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# The Builder

AN

ILLUSTRATED WEEKLY MAGAZINE,

FOR THE

Architect, Engineer, Archaeologist, Constructor, & Artist,

CONDUCTED BY

GEORGE GODWIN, F.R.S.

*Fellow of the Royal Institute of Architects, and Honorary Member of several Societies.*

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"Every man's proper mansion-house, and home, being the theater of his hospitality, the seat of self-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kinde of private principedome, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

"Architecture can want no commendation, where there are noble men, or noble mindes."—SIR HENRY WOTTON.

"Our English word To BUILD is the Anglo-Saxon Bylsan, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen; and is applicable to all other things as well as to dwelling-places."—DIVERIONS OF PURLEY.

"Art shows us man as he can by no other means be made known. Art gives us 'nobler loves and nobler cares,'—furnishing objects by the contemplation of which we are taught and exalted,—and so are ultimately led to seek beauty in its highest form, which is GODDNESS."

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# THE BUREAU

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# The Builder

VOLUME FOR 1857.

**I**NVENTIONS for facilitating building operations, improved materials, and modes of cheapening those in general use, offer themselves every day for consideration; and, what is equally important, have a greater chance of examination and trial than has hitherto been the case. The Architectural Exhibition affords the means of publicity in this respect to all who desire it, and will gradually, we have no doubt, be largely taken advantage of, as well by the public as by manufacturers, inventors, and merchants. In the year now opening upon us, we have reason to expect we shall have many improvements and new modes of construction to examine and chronicle, and we shall lose no opportunity to do so.

It promises, indeed, to be a busy and prolific year. The Government Offices Competition; the Manchester Art Exhibition; the drainage of London (especially as it is now taking a business-like shape); the National Gallery question; the general adornment of the metropolis; the artistical education of the people, and the more special education of architects, are amongst the subjects which already put in claims for earnest consideration. The last-named question will probably be agitated strongly; the want of systematic instruction for the profession being more and more universally felt every day. The proposition on this head, made by Mr. Kerr to the Institute of British Architects, namely, that the Council should draw up a list of books conveying a complete system of education, and admit, as graduates, with certain advantages, those who proved themselves perfect in the prescribed course of study, is a very different thing to the call for a Diploma as brought forward some time since, and commends itself to us more strongly. Of this, however, on another occasion,—simply saying in the meantime to our youngest readers that the most valuable education is that which a man gives himself, and that will and determination on their own part will go far to overcome any difficulties in the way of acquiring knowledge that may now exist. As Charles Swain asks and advises, in his last published verses,—

"Is it wise to rest contented  
With this half-instructed state?  
Lost time we'er was unrepeated—  
But regret may come too late!

Work then, youth, while yet 'tis morning,  
Broad the land before you lies,  
Neither task nor labour scorning,  
Which the fruit of thought supplies,  
As you work so choose your station,  
Knowing life and its demands,  
Knowing 'tis through cultivation  
That the living Mind expands!"

But all this is a digression, and we return to what we had in our mind at the commencement, the collection of materials and inventions connected with building now in the Suffolk-street Rooms.

There are about fifty exhibitors in this department, and the specimens sent more than fill the

two rooms at the disposal of the committee for this purpose. At the top of the stairs on entering,—

The Architectural Pottery Company, of Poole, to whose productions we referred some time ago, exhibit a selection of their glazed and coloured bricks, with a drawing of a villa (Parkstone, Dorset), the exterior of which is faced with the stone-buff bricks and dark grey quoins. The arches, brackets, and cantilevers are also formed in their coloured material. The buff bricks and a cornice have been used, we understand, for the facing of a house in Park Village West, Regent's-park. Inside the Exhibition rooms are laid specimens of their inlaid mosaic for floors and hearths,—even for table-tops. The quarries, 4 inches square, are inlaid in squares ranging from one inch to one-eighth of an inch to form the patterns, and then burnt, so that it is in truth a mosaic pavement, though at first sight it gives the impression of being an imitation of one. As in other ornamental tile pavements, something has yet to be done to keep the quarries square and uniform, so as to make the lines range. Near the bricks on the landing is—No. 50, a very good piece of stone carving by Mr. Earp, in the shape of part of a monumental tomb to the memory of Archdeacon Hodson, designed by Mr. Street, for the south aisle of Lichfield Cathedral. Passing into the first room, we come against—

The metal-work sent by Messrs. Hart (43). This enterprising firm make a smaller show on the present occasion than they did last year, but it includes some excellent work of Mediæval character, in the shape of standards, finger plates, and other fittings. The capital decorated with the convolvulus, in iron, painted in exact imitation of nature, is not a success, and must be viewed as an example of what to avoid. It is not desirable that we should mistake the metal decoration of a capital for a convolvulus, but that the mind should recognise and appreciate the skill of the artist in the conveyance, by means of the material at hand, of the effect produced by a work of nature. Close by,—

Mr. Magnus, of Pimlico, by whom the process of enamelling slate was discovered about sixteen years ago, maintains his supremacy over his imitators: he exhibits amongst other things (36) a moveable cabinet-formed stove of Louis XIV. design, with blue engraved ground, and flowers and landscapes in panels, which is very elegant.

Messrs. Botten's collection deserves examination: their patent Regulator Closets appear to have strong claims to consideration. "If the handle of a common closet is pulled up and let down again immediately, without being held up long enough to charge the service-box, a very inefficient wash of water is obtained, and as this is how closets are too often used, stoppage of the trap is the frequent result; whereas, in the Regulator Closet, if the handle is pulled up ever so suddenly, the regulator *must* be charged with air, and therefore take a given time to go down again, during which a copious supply of water is running into the basin; and this time is regulated when the closet is fixed, to ensure any quantity that may be thought necessary in that particular situation."

Mr. Gilbert's Terra Cotta (46); Mr. Chapuis' Reflectors (49); Mr. Leake's specimens of "Relievo Leather" (44); Horner's Self-discharging House Cistern (40) for cleansing drains, should all be looked at. No. 42 is a very fairly carved altar-table in oak, exhibited by Francis Smith and Co.

The Lizard Serpentine Company (13) have some excellent specimens of their beautiful material, to the value of which for the adornment of buildings, both ecclesiastical and civil, we have on more than one occasion borne testimony. It is obtainable in large blocks, and of infinite variety in colour. It ought to be largely used.

Lambert's Careless Bib Valve (38), whereby water cannot be let to run to waste, might be usefully applied in many situations.

Of Ransome's patent Silicious Stone, a number of specimens are exhibited (37). Professor Austed's evidence, and the experience of twelve years, appear to show that, as a material, it is durable and good. The process of manufacture is described to be as follows:—Common flints, with caustic soda, are dissolved into a fluid state by the action of great heat in close steam-boilers, forming a silicate of soda or soluble glass, which is mixed with about 92 per cent. of sand. This plastic composition is then pressed into moulds, dried, and subjected to the action of intense heat in kilns or chambers, causing the silicate of soda to form a glass cement, connecting the particles of sand together. The chief specimen exhibited, a highly-ornamented chimney-piece, is not successful in execution. The figures are very bad, the foliage has no sharpness, and its aspect altogether is little better than one of cement.

The specimens of wood carving from the Lambeth Company's works (33) include some rough from the machine, which show strikingly its capabilities. The company is of recent formation: it has adopted Jordan's patents, and is prepared to carry out work to any amount.

Near these carvings will be found specimens of the patent Fibrous Slab (32), the qualities of which were described by us some time ago, and brought a pile of inquiries, to which (as it turned out that the company was not then formed) we were unable to reply. This material has been used very largely in the new reading-room at the British Museum. It offers an admirable face for painting on, can be bent to any curve inexpensively, as compared with wood, and, if it be all like a portion on which we have experimented, may be regarded as incombustible. For theatre-building it would be very useful.

In connection with a specimen of Mr. Fryer's patent hoop-iron for building purposes (29), the patentee gives the following account of some experiments made upon it, in comparison with the ordinary hoop-iron bond. He says:—

"Some strips of plain hoop, of the tarred and sanded hoop, and of the patent bond, 1½ inch wide, No. 15 gauge, were built in mortar in the ordinary method, into a wall, 1 foot 6 inches thick, 10 feet long, and were weighted to the extent of four tons. The plain and the tarred and sanded hoops were easily drawn out; but the Patent bond, although submitted to eight times the test to that at which the tarred and sanded hoop was drawn, remained firm until the iron



was severed three times, where not built into the brickwork. On the last occasion, previously to the iron breaking, the patent bond had been drawn about a quarter of an inch.

The above experiments were carried out a few hours after the erection of the brickwork.

The same experiment was tried after the mortar had been allowed ten days to set. The plain hoop, and the tarred and sanded hoop, were again easily drawn; but it was found perfectly impossible to move the patent bond, although the iron was broken as before.

Again, some strips of the plain hoop, and of the tarred and sanded hoop, 10 feet long, 2 inches wide, and a strip of the patent bond, 5 feet long, 2 inches wide, were built in cement into brickwork, and weighted as before. At the expiration of ten days, the plain and the tarred and sanded hoops were drawn, but the short length of the patent bond remained perfectly firm, although the iron was broken in the same manner as in previous experiments."

These experiments would seem to assert the comparatively little use of the ordinary hoop-iron bond, in opposition to many elaborate and well-known experiments on brickwork constructed with it, when it was first introduced some years ago.

Passing to the inner room, we find in the centre several pieces of walling, affording specimens of Mr. John Taylor's patent facing, both in stone and brick, and a model, showing the method of cutting the facing out of the block without waste. The system was fully illustrated in our pages when first patented, and has since been applied extensively by the patentee at Springrove, Middlesex.

Mr. George Jennings, of the Blackfriars-road, exhibits a large number of his excellent patents (15), from his now largely adopted shutters, shoes and fasteners, which led us first to make him known to our readers, down to propositions only a few weeks old,—his lavatories, closets, valves, substitute for wood—bricks, his pumps, and drain-pipes. The last, as we have before taken occasion to say, are certainly the best in arrangement that can be used.

There are a number of specimens of parquet floors and borders, wooden tiles, and venerated decorations, from the London Parquetry, Whitefriars; grates and stoves from Mr. Pierce; specimens of glazing without putty; and of Nixon's oil-stains; a self-acting water-bar from Mr. Thomas Smith; examples, from Messrs. Jackson and Sons, of their beautiful Carton-pierre; some famous bricks from Eastwood and Sons (No. 1), of Lambeth, together with crest ornaments.

Mr. Looker's Imperishable Ground Indicators and Garden Labels (4) are useful things. They are made by machinery, under steam pressure, and burnt to great hardness, with any required inscription or indication upon them.

Beadon's Patent Eaves Gutter Tile, specimens of which are near the last-named (3) may be very usefully employed in many cases, though its appearance might be improved. An illustration of the tiles which occurs occasionally in our advertising columns (suggesting, by the way, at first sight, a reading-desk rather than a gutter), will explain the construction. As the patentee says,—“In many cottages, where for the sake of economy the walls are only carried up to the tops of the windows, common spouting cannot be used without preventing them from being opened; but, since with the Patent Gutter the water-course is placed over instead of under the eaves, the windows are perfectly free from any interference with their proper action, or with the admission of light. In agricultural buildings it is essential to have the headway as low as possible, to cut off the wind, and the Patent Gutter is the only contrivance that can give a sufficiently low headway with the roof properly spouted.”

With this we must conclude our present notice of the inventions and materials connected with building which now form part of the Architectural Exhibition.

## ATHENS.

FOREMOST amongst the numerous distinguishing features which mark the progress of refining and civilization in modern nations, and which constitute the greatest charm of the times we live in, may be cited an intense love for investigating and laying bare the histories of mighty nations long since passed away, the visible records of whose existence consist but in crumbling ruins and grass-grown mounds, and the annals of whose greatness are limited to the conflicting and scant authority of early writers, or the still vaguer and more doubtful testimony of mere tradition. The antiquary, the artist, and the scholar vie with each other in the delightful tasks of exhumation, description, and illustration; the appliances of modern science, the inexhaustible stores of modern learning, are daily employed in unravelling the tangled thread of ancient history, unfolding the perfection of ancient art, and convincing the world of the surpassing interest of fact over fiction.

The lapse of 3,000 years, though an obstacle, is no preventive to the obtaining an extended knowledge of the languages, arts, and domestic habits of mighty nations long since removed from the scene of their power, the very site of whose territory is wrapped in uncertainty; for the astounding revelations of modern research but increase the zest for the study of the records of the great nations of antiquity in an inverse ratio to the period elapsing between their existence and our own. Thus has modern enterprise explored the classic climes of Italy, and restored in idea the architectural grandeur of the Eternal City, or traced its regal offspring in the ruins of Balbec and Palmyra, Spalatro, and the widely-scattered monuments of its extended rule, or followed its waning grandeur to Byzantium, and marked its declining lustre to its fall. Thus has it traced the courses of the Ganges and the Indus, the Tigris and the Euphrates, the Nile and the Niger, examined the pagoda of the Hindoo mythology, and the rock-cut temples of Elephanta and Ellora; penetrated the recesses of the pyramids, followed the African savage to his inland home, and exhumed the sculptured wonders of Assyria; thus crossed the Atlantic and investigated the temples of Mexico and cities of Yucatan: thus followed the Saracens into Spain, and gazed in rapture upon the fairy creations of the Alhambra: thus tracked the matchless tracery of the Gothic art through the dark period of the Middle Ages, and finally welcomed the return of classic design in the masterpieces of the Revival.

In all profane history, the beginnings of great nations are generally enveloped in the mists of mythicism. Gods, demigods, and heroes, beings having their type in the eternal works of nature, the sun, moon, and planets;—her convulsions, the storm and the earthquake;—remarkable men, warriors, legislators, poets;—these, combined with small portions of historic truth, mixed up with fragments of universal tradition, as the Deluge, the Fall, make up the history of the earliest times. The testimony of early writers with regard to dates is so conflicting, that we can only arrive at an approximation to truth in that essential particular, the weakness of claiming long descent applying as much to nations as to individuals. Egypt, according to Manetho, who is referred to by Josephus, Julius Africanus, and Eusebius, was governed by thirty-one distinct dynasties, after the gods. This mixture of divinity with mortality, which constitutes so beautiful a feature in the poetry of history, robs it at the same time of its value. The mystic Buddha of India, the Saturn of the Phœnicians, the elementary deities of the Pelasgians, the Naith and Serapis of Egypt, the Ormuzd of Persia, the Bel of Babylon, the winged Genii of Etruria, the barbarous Edda of Scandinavia, and the classic mythology of Greece, if wrested from the respective lands of their creation, would rob history of half its charm, and yet not help us in our search after truth. It is singular, that there is no hint in Scripture about the Pyramids, which could therefore hardly have been effected by the Israelites, but subsequent to their quitting Egypt. For similar reasons we would refer hieroglyphics to a mysterious cypher of the priests, and ascribe them to a

later epoch than the alphabetical writing of Moses.

How the attributes of the gods were perverted and distorted to suit the depraved ideas of the poets and their readers, was apparent even to the ancients themselves, as proved by the language of Cicero, where he says, “Qui et irā inflammatus et libidine furentes induxerunt Deos;—feceruntque ut eorum bella, pugnas, prælia, vulnera videremus; odia præterea, dissidia, discordias, ortus, interitus, querelas, lamentationes, effusus in omni intemperantiā libidines, adulteria, vincula, cum humano genere concubitus, mortalesque ex immortalī procreatos.”

But, waiving these considerations of mistaken notions of divine rule, there is one country whose claims, above all others, to the admiration, gratitude, and imitation of posterity seem, by universal consent, to be admitted;—a country which comprised within itself all that was perfect in art—all that was noble in patriotism—all that was mastery in eloquence;—a country whose mythology, language, poetry, and history will form the theme for scholars to expatiate upon for all ages; whose architecture is allowed to have been the most symmetrical, chaste, and dignified that the invention of man has produced;—a country where selfishness was more repudiated, vice more loathed, and virtue more applauded than any other in the world:—that country is Greece.

In shape a rude triangle, bounded on two sides by the sea, on the third divided from Boeotia by the mountain-range of Parnes and Cithæra, is the small tract of land known as Attica. Its principal mountains are the Cape of Sunium, Hymettus, and Pentelicus; its chief streams, the Cephissus and the Ilissus; in its extremest length, not exceeding sixty miles; in its greatest width, twenty-four. Between four and five miles from the sea-coast, in the central plain of Attica, surrounded by Mounts Parnes, Pentelicus, Hymettus, and Ægaleos, washed on the east by the Ilissus, on the west by the Cephissus, stands the city that called forth the legislation of a Solon, the devotion of a Miltiades, the splendour of a Pericles, the courage of an Alcibiades, the philosophy of a Plato, the eloquence of a Demosthenes, the dramatic genius of an Æschylus and an Aristophanes,—ATHENS.

It is of this city, its history, topography, and departed architectural grandeur, that we would principally confine our observations; and amongst the numerous works that treat of it, there is none more interesting in its matter, more distinguished for the profundity of its learning, than the elaborate notice of it contained in the “Dictionary of Greek and Roman Geography,” edited by Dr. William Smith, now on the eve of completion.\*

The well-known and received opinions as to the origin of the Greek nation are patent to the world. It was not till the first Olympiad, about 776 B.C. that writing was employed by them for the perpetuation of facts; therefore their early history may be considered as not much more than a beautiful legend. It would be an endless task to more than allude to the fables that adorn the mythical or heroic ages, whose improbabilities procured for her, at an early date, the epithet of “Mendacious.”

\* “Quicquid Græciæ mendar audent in historia.”

The recognition of the Pelasgi as the most ancient inhabitants of the land, their division into several tribes, as the Hellenes, Leleges, Dryopes, Caucones, &c.—the dominant superiority amongst these of the Hellenes, or subjects of Hellen,—the birth of his sons and grandsons, Dorus and Æolus, Ion and Achæus, the founders of the four great divisions of the Hellenic race,—the peculiar settlement of the Pelasgiic root in Attica and Arcadia,—the discussion as to whether the Pelasgi were anciently a foreign or a Grecian race, and the consequent derivation of the Greek language,—the immigration into Attica of Cærops and his band of Saïtes,—the foundation of Argos, by Danaus and his fifty daughters,—the settlement in Peloponnesus

\* “A Dictionary of Greek and Roman Geography.” By Various Writers. Edited by William Smith, LL.D., editor of the “Dictionary of Greek and Roman Antiquities,” and of “Biography and Mythology.” London: Taylor, Walton and Maberly; John Murray.



of Pelops and his followers; and, lastly, the introduction of letters from Phœnicia, by Cadmus, are canons in Greek faith, that all delight in believing, but whose authenticity the learned are not always warranted in admitting.

The Pelasgi were the oldest inhabitants of Greece, and, according to Herodotus, spoke a barbarian language, which, from their alliance with the Ionian, had some affinity with Sanscrit. To this oldest element Latin owed its parentage, now considered the more ancient of the two. Subsequently, when the Hellenes of Ionic race took possession of Attica, the two became commingled, and, doubtless, in their reconstruction, formed the early Greek language. Of the mythical poets, Orpheus, Eumolpus, and Musæus, and their disciples, we know nothing but their attributes.

"Sylvestres homines sacer, interpresque Deorum  
Cædibus et victu fœdo deteruit Orpheus,  
Dietus ob hoc leuire tigris rabidoque leone."

The classic literature of Greece may be divided into two eras.—1st. From the infancy of literature, written and unwritten, to the time of the Pisistratide. 2nd. The era at which national literature attained its climax, commencing with Simonides and ending with Aristotle; during which period tragedy arrived at maturity, and stopped! Comedy flourished, and history and philosophy culminated to their highest point of excellence.

The three above-named poets were mythical bards, and composers of hymns, and with a number of wandering minstrels, who, it is known actually existed, occupied a high position in public estimation, being at that time the only depositories of historic legend and family pedigree. Parnassus, Helicon, Libethra, and Hippocrene became consecrated to the Muses, probably from the settlement of these bards in their locality.

The love of Orpheus for the ill-fated Eurydice forms one of the most beautiful passages in the *Georgics* of Virgil.

Authentic Greek literature commences with Homer and Hesiod. Modern scepticism would assert that the former existed but in name, and that the works ascribed to him were by the rhapsodists, and first arranged as a whole under Pisistratus. Cicero is cited in proof of this:—"Quis doctor isdem temporibus aut cuius eloquentia literis instructor quam Pisistrati, qui prius Homer libros confusus antea, sic depossuisse dicitur ut nunc habemus."

It is, indeed, a difficult question, for as easily might we ascribe a various authorship to each of the great epic poems of Virgil, Dante, Tasso, and Milton. There can be but little doubt that Homer was an Asiatic Greek, but whether Ionian or Æolian is not so clear. The time when he flourished is also unknown, but Herodotus makes it about four centuries before his time. The place of Hesiod's birth, or the home of his adoption, was Boeotia. He was supposed to have been contemporary with Homer. The title of the Epic Cycle was given to the collection of epic writers made by the Alexandrian grammarians in the second century B.C. It consisted of the *Iliad* and *Odyssey*, and all the inferior epic poems of the Homeric form contrasted with those of the Hesiodic mould.

The dissertations on this subject, and on the great works of Homer, are a favourite theme of scholarship.

Elegiac and iambic poetry succeeded. The first of the former poets was Callinus, of Ephesus; and Archilochus was the inventor of the latter, the chief characteristic of which, as opposed to the epic, was rapidity.

"In celeros iambos misit furem."

The Lyric period followed, a style inseparately connected with music. As the Greeks knew nothing of harmony, but only sang in unison, their term *ἀρμονική* could only apply to melody. Terpander was the first who applied science to music. For a critical account of the state of Greek music, the elaborate work of Burney must be consulted.

Greek lyric poetry was peculiarly of that race of which the Dorians and Æolians formed the two branches. The nine great lyric poets were Alcamæ, Alcæus, Sappho, Stesichorus, Ibycus, Anacreon, Symonides, Bacchylædes, and Pindar. Of these, Sappho naturally excites our greatest

interest. Though called by Plato *ἡ καλὴ*, Maximus Tyrius makes her swarthy, and Ovid diminutive, where she writes to Phaon,—

"Sæm brevis, at nomen quod terras impleat omnes  
Est mihi."

Stesichorus first invested bucolic or pastoral poetry with a classical character, afterwards more familiar to us in the pastorals of Theocritus and the eclogues of Virgil.

The great feature in Pindar was rapidity in seeing analogy,—

"Monte decurrens velut annis, imbres  
Quem super notas aluere ripas,  
Fervet, immensusque fuit profundo  
Pindarus ore."

Of Anacreon, we need only remark that the graceful odds that bear his name were not by him but *after* him.

The flourishing era of Greek literature commenced with the time of Pisistratus. Thespis is considered the inventor of tragedy, Æschylus, Sophocles, and Euripides its greatest writers. The drama was of Attic growth, its writers Attic, their language Attic. Comedy and tragedy in Greece had similar origins. As the latter was the offspring of the Dithyrambic chorus, so was the former of the phallic song. The band of revellers (*κῶμος*) danced round the *φαλλόφοροι*, or bearers of the *φαλλός*, the emblem of increase, whilst joining in rude chorus the song of their leader. Hence the etymology of the term comedy—the ode of the *Comus*. Of a series of 104 comic poets, Epicharmus was the first whose works took a written form. What is termed the old Attic comedy finds its chief representative in Aristophanes. His extant works are eleven in number. The remaining poets of the old and middle comedy form a long list of names, but of their works only a few fragments remain. The poets of the new comedy are of a subsequent date.

Unlike the Egyptians and Assyrians, who, by their hieroglyphics and cuneiform inscriptions, preserved the records of the great events of their empires, the Greeks, until the flourishing era of their literature, had no regular history.

Of the four great Greek historians, beginning with Herodotus, and ending with Ctesias, Thucydides and Xenophon were Athenians. Of the ten Athenian orators, the highest rank is accorded to Demosthenes and Æschines. Of the numerous schools of philosophy established at Athens, Socrates, Plato, and Aristotle were the most renowned. The two former were Athenian by birth, the latter by adoption.

This short digression upon the poetry and literature of Greece is excusable, for, with this extraordinary people, arts, architecture, poetry, and history seemed so linked together in perfect unity, that to expatiate upon any one of these points, without so much as alluding to the others, would be to do violence to the subject, and leave our work but half performed.

It is singular how a style of architecture known to be the parent of that of ancient Rome, could have remained so long unvisited, or at least uninvestigated, like some mythical creation of legendary lore, instead of the actual and tangible remains of the most world-renowned city in Europe. But so it was. The earliest English travellers of pretension to this classic ground were Messrs. Wheler and Spon, who, in 1676, visited Athens, and subsequently gave the result of their labours to the astonished world. To them succeeded M. Le Roy, who, in his work entitled "*Les Ruines des plus beaux Monuments de la Grèce*," embraced all the errors of his English predecessors, using their prior observations as convenient stepping-stones for his own. The third and the most important visit to the same classic regions was that of Messrs. Stewart and Revett, who, in 1751, first landed in the ancient harbour of the Piræus, and at once proceeded to take accurate measurements and make graphic delineations of those master-pieces of art that were afterwards destined to create a new era in the annals of modern architecture. In their critical analysis they exposed the inaccuracies of Le Roy and his predecessors, and by their artistic drawings convinced the world of the surpassing beauty of Greek form over Roman, and effected a revolution in English design, that the lapse of a century has only tended to confirm.

The example thus set, a host of enlightened travellers have since explored the ground; artists, architects, poets, and scholars, have in legions drunk inspiration from the lands that nurtured this marvellous people, so divided by race, so united by sentiment, and poured the varied results of their labours into the storehouse of general knowledge. For architectural purposes, the publications of the Dilettanti Society, of the researches in Ionia of Chandler and Revett, those of Hittorf in Eleusis, Rhamnum, Sunium, and Thorius; and Penrose's "*Investigation of the Principles of Athenian Architecture*;" Inwood's work on the Erechtheion; the supplementary additions to Stewart and Revett, by Cockerell, Donaldson, &c.; Wilkins's "*Antiquities of Magna Græcia*," and other works, have effectually preserved the crumbling monuments they describe from the chance of being for ever obliterated from the memory of mankind.

South of the plain of Athens rises the Mount Lycabettus, a prominent object from the city; and south-west of Lycabettus are four hills of moderate height, all of which formed part of the city. Of these, the nearest to Lycabettus, and a mile from it, was the Acropolis, or citadel, a square craggy rock, rising abruptly about 150 feet, with a flat summit of about 1,000 feet long from east to west, by 500 feet broad from north to south. Immediately west of the Acropolis is a second hill, the Areiopagus; to the south-west rises a third hill, the Pnyx, on which the assemblies of the citizens were held; and to the south of the latter is a fourth hill, known as the Museum.

The Ilissus on the east was joined by the Eridanus close to the Lycæum, outside the walls, and then flowed in a south-west direction through the southern portion of the city. The Cephissus, on the west, runs due south, at the distance of about a mile and a half from the walls. South of the city was seen the Saronic Gulph, with the harbours of Athens. The city stands on a bed of hard limestone rock, in most places thinly covered with a surface of soil. From this surface the rock itself frequently projects, and almost always is visible. The surpassing beauty and clearness of the Athenian atmosphere is noticed by Euripides, as well as by modern travellers.

The Acropolis was the boundary of the original city, and bore the name of Cecropia from that of its founder. From the limit of the city to this one point, it is indiscriminately termed in the historical period, *Ἀκρόπολις*, or *Πόλις*; hence Zeus of the citadel, was termed *Πολιεύς*, and Athena, *Πολιάς*. Erechtheus dedicated to Athena a temple on the Acropolis, in which he placed a statue of his patron saint, and being afterwards interred there, it took the name of Erechtheum: Athena was the *Miuvra* of the Greeks, the tutelary deity of the Athenians. The Pelagic inhabitants, afterwards styled Cecropide, were now called Athenians. Theseus was the national hero of Attica, in whose honour the Theseum was built; his exploits need not be repeated. His advice to the ungodly when in Tartarus,—"*Discite justitiam moniti, et non temere divos*," is, perhaps, the most valuable part of his history. It was in the mythical age that the Pelasgi fortified the Acropolis, a portion of which long retained their name. It was during the administration of Pisistratus (B.C. 560—514), that, according to Thucydides and Aristotle, many temples were built; amongst them that of Apollo Pytheus, and that of Zeus Olympius, which latter, however, was not finished for centuries. It was during the interval between the battle of Salamis and the Peloponnesian war, that the first public buildings were erected by Cimon and Pericles. Previous to this Themistocles had surrounded the city with a fortified wall, sixty stadia in circumference, and at the same time fortified the harbour of the Piræus. It was under Cimon that the Theseum was built, and the Stoa Poecile adorned with paintings, the Academy and Agora planted and adorned. To Pericles, however, the splendour of Athens owed its being; and the Parthenon, the Erechtheum, and the Propylæa will ever attest his taste and munificence. Various other buildings are attributed to him. After the naval victory over the



Lacedemonians off Cnidus, the Athenians again tried to improve their city and restore the damage sustained in its capture, and it was then that the Dionysiac Theatre, the Stadium, and Lyceum were completed. After the battle of Chæronæa (B.C. 338) Athens became a dependency of Macedonia. Upon two occasions Athens sustained serious damage,—upon the invasion of Philip of Macedonia, B.C. 200, who destroyed the suburbs of the city and temples of its plain; and upon its capture by the Roman general, Sulla, B.C. 86, when the long walls and the fortifications of the city and of Piræus were destroyed, and the commerce of Athens as a maritime place was for ever annihilated.

Under Roman rule Athens continued the centre of Grecian philosophy, and was frequented by her conquerors as the school of learning and refinement; and many of her finest public buildings date from this period.

Hadrian (A.D. 117—138) was a great benefactor of Athens. He not only completed the temple of Zeus Olympius, but adorned the city with numerous other public buildings,—two temples, a gymnasium, a library, and a stoa,—and gave the name of Hadrianopolis to a new quarter of the city, which he supplied with water by an aqueduct. In the time of the Antonines, Herodes Atticus, a citizen of Athens, emulated the imperial munificence by erecting a magnificent theatre on the south-west side of the Acropolis, dedicated to his wife Regilla, and also covered with Pentelic marble the seats in the stadium of Lycurgus. Nor, says Gibbon, was his liberality confined to the walls of Athens. The most splendid ornaments bestowed on the temple of Neptune, in the Isthmus, a theatre at Corinth, a stadium at Delphi, a bath at Thermopile, and an aqueduct at Canusium, in Italy, were insufficient to exhaust his treasures. The people of Epirus, Thessaly, Eubœa, Bœotia, and Peloponnesus experienced his favours, and many inscriptions of the cities of Greece and Asia gratefully style Herodes Atticus their patron and benefactor.

Athens was never more splendid than in the age of the Antonines. The great works of Pericles and of his period still retained their original freshness and perfection. The Olympieum, the most colossal temple in Greece, had been completed; and the city had yet lost few of its unrivalled works of art. It was to the visit of Pausanias at this epoch, that we are principally indebted for our knowledge of its topography. From that period Athens received no further embellishments, but her buildings appear to have existed in undiminished glory till the third or even the fourth century of the Christian era.

Their gradual decay may be attributed partly to the declining prosperity of the city, which could not afford to keep them in repair, and partly to the fall of paganism, and the progress of the new faith.

The walls of Athens ruined by Sulla, were restored by Valerian, A.D. 253; and the fortifications protected it from the attacks of the Goths and other barbarians. In the reign of Gallienus, A.D. 267, they effected an entrance into the city, but were driven out by Dexippus. In A.D. 396, Alaric appeared before the city, but being unable to take it by force as an enemy, he accepted its hospitality, and entered it as a friend.

Notwithstanding the edicts against Paganism issued by Theodosius, Arcadius, and Honorius, in the fourth and fifth centuries, the Pagan religion continued to flourish at Athens till the abolition of its schools of philosophy by Justinian, in the sixth century. It was probably at this time that many of its temples were converted into churches. Thus the Parthenon, or temple of the Virgin Goddess, became a church dedicated to the Virgin Mary; and the temple of Theseus was dedicated to St. George of Cappadocia.

During the Middle Ages, Athens had degenerated from its once high estate into a mere provincial town, and its subsequent alternations of fortune excite a painful feeling of regret. After the capture of Constantinople by the Latins in 1204, it became a dependency of the king of Thessalonica, and subsequently remained in possession of the Franks till its incorporation into the Turkish empire in 1456. The Parthenon, which had braved the lapse of 2,000 years with

impunity, received its severest injury during the siege of Athens by the Venetians. It was before this siege that Wheler and Spon visited it, and at that time, says Colonel Leake, the Parthenon was perfect, with the exception of the roof and a few figures in the pediments; the Propylæa preserved its pediment, the Temple of Victory Apterus was complete, and the Erechtheum but little injured.

In 1834, Athens was made the capital of the new kingdom of Greece; and, since that time, the increased knowledge displayed by modern scholarship has enabled the able and persevering investigators of its topography and ruins to clear up many doubts that before existed, and give to the world the results of their invaluable labours, in the elaborate and learned descriptions we now have the advantage of possessing.

We must here break off for the present.

#### PROPOSED ALTERATION OF NAMES OF LONDON STREETS.

THE proposal made by the Metropolitan Board to change the names of our streets should be looked at very jealously, and accepted with much caution, great as the inconvenience may be which results from the multitude of repetitions. The time was when the streets of London were without properly recognised names, and it is only as it were the other day that the houses in the metropolis and other large towns were numbered. The previous state of things must have been very inconvenient, and explains why a gentleman directing a note to a young lady would say,—

“These for y<sup>e</sup> hands of y<sup>e</sup> fair Dame Matilda, at y<sup>e</sup> Golden Fleece, over against the Roaming Lion and Seven Crowns, high unto the Conduit in Chepe.”

We wish we knew the name of the person to whom we are indebted for the introduction of the system of numbering the houses: he should be honoured.

Named without concert and according to the impulses of individuals, the same names have been applied to streets in all quarters. There are thirty-three New-streets, thirty-eight Queen-streets, forty-four King-streets, fifty-five Charles-streets, and sixty-two George-streets. This is very undesirable: we would gladly have it otherwise, and arrangements should be made to prevent further multiplication. Nevertheless we should much regret to see the names of established streets changed: in many instances they have a historical and peculiar interest,—as, for instance, Watling street, Knight-Ryder-street, Crutched Friars, Feuchurch-street, the streets named from the City gates, Cheapside, Giltspur-street, and a hundred others, which tell a story, and cause the passenger to reflect. Take, as an example which occurs to us, the streets built on the site of York-house, in the Strand,—George-street, Villiers-street, Duke-street, Off-alley, and Buckingham-street, preserving the name and title of the last Duke of Buckingham of the Villiers family and last possessor of York House, and telling a long story of how Henry VIII. took York House, afterwards Whitehall, from Cardinal Wolsey; how Queen Mary, in recompense, presented this York House in the Strand, then called Norwich House, to the see of York, and many things besides.

The scheme thoroughly carried out would deprive London of all its significance and suggestiveness, to say nothing of the difficulties and annoyances it would cause for a long time. Our own Great Queen-street, Lincoln's-inn-fields, is marked down in the committee's report to be changed into Brougham-street. With all due admiration of the wonderful man to be thus commemorated, why should we lose sight of the fact that this street was named after Henrietta Maria, the queen of Charles I. or give up the association with it of Luigo Jones, Sir Godfrey Kneller, and others, in connection with whom it is referred to by name by the writers of their period?

Even in newer neighbourhoods the names of streets are not without significance, and as time advances will become more curious. In places which are now pent in by heaps of bricks and mortar, we have such titles as the Grange-walk, Crabtree-row, Grove-place, Primrose-street, Forest-road, Rose-place, Arbour-square,

Pleasant-row, Wilderness-row, Short's-garden, and even Whetstone-park,—Punch's preserve,—which smack of the country, and sustain the memory of the original condition of the place.

Then there are names which record the passing events at the period of their erection,—Trafalgar squares and streets, Nelson-streets, Wellington-streets, Vincent-squares, Collingwood-streets, and so on, commemorating, in a certain way, the men of the long war.

Passing over the places which are of the date of the regency—when Charlotte-streets were common in small neighbourhoods, and Regent-streets sprang up—we will take a glance at another and the most numerous class of London street names. In one locality, joining each other, are Ernest, John, Alfred, Henry, Louisa, and Marian streets. There are numbers of streets called by Christian names which have been given by some thriving man as a mark of affection for the different members of his family, as the north country and other ship-owners call their vessels the *Bouncing Sally*, the *Eliza*, or some other name which is suggested by affection. As a natural consequence, too, we have many Church-lanes, Church-streets, &c. which are so called from their position, like some of the main roads, such as Tottenham-court-road, White-chapel-road, and others.

The names of the late royal family (Gloucester, Cumberland, York) have been given to many streets and rows of houses.

Those who notice the names of streets in the neighbourhood of London-wall—such as Basinghall-street, Redcross-street, Whitecross-street, Jewin-street, Cripplegate—will find that all have significance. Bridgewater-square was formerly the site of the residence of the Bridgewater family, and was the first regular square built in London. Near it is the ancient “Grub-street” of the poets, in which it is said that the family of Milton once resided. After his time the street fell into decay, and poets of less note there pursued their precarious calling; and then other tenants occupied the place, and the name of *Grub-street* was considered disreputable, and it has, therefore, been recently changed to Milton-street. So far as feeling is concerned, we should have preferred that the original name of Grub-street should have remained, and that some other street should have been invested with the name of our great poet.

The *Maiden-lane* from King's-cross seems to be changing to the York-road. This thoroughfare, not long since a rural road, has been a Maiden-lane from Battle-bridge since the Saxon time. Why change the name? The monstrous effigy of George IV. to which we have referred on more than one occasion has been the means of giving the name “King's-cross” to one of the most important positions in the metropolis. Before the erection of that figure of a king the place was called Battle-bridge—probably from the circumstance of a great struggle having taken place on this spot between Queen Boadicea and the Romans.

Would it not have been better to have preserved the memory of this historical event, and called this station “Battle-bridge,” rather than after the abominable work of no-art which has been so properly removed?

Some of the recently constructed lines of way have been well named; the Commercial-road for instance, which leads towards the Docks and other great mercantile establishments. The road through Islington which leads off towards the north, and which, before many years are past, will be as bustling as Oxford-street, has been well named the Caledonian-road. And in Islington, where the remains of Roman work were formerly to be seen, a large street has been called the Roman-road.

In glancing around it is easy to observe that more discretion in naming of streets is now shown than was at one time exercised; and while acknowledging that inconvenience has been caused by the haphazard mode pursued, we must reiterate the necessity for the greatest caution in making changes. All England would protest against re-christening Rannymead: the whole world would flout the notion in the case of Marathon. Many of our streets have the same claim in a less degree to be allowed to retain their ancient appellation. London must not lose its memories.



## SOME ACCOUNT OF ALNWICK CASTLE, NORTHUMBERLAND.\*

This important stronghold formed a species of frontier fortress between Scotland and England, being only at the distance of about 30 miles from the Scottish border, and lying within 4 miles of the sea coast: it therefore commanded the high road from one country to the other. It is placed on a plateau, partly natural and partly artificial, midway up the hill, which rises from the River Alne to the south. On the west side is the principal entrance with its barbican, affording access from Alnwick. This town is attached to the castle, and is itself surrounded by a strong wall, and entered by gates, one of which, an old one, still remains in tolerable preservation, the two others now standing being comparatively modern. The fortifications of the town in their present extension are attributed to the second Earl of Northumberland, the son of Hotspur, about 1434; but doubtless so important a place, and one exposed to the continued incursions of the hostile Scotch, and the not very scrupulous raids of the Borderers, must have been surrounded at an earlier date by a circumvallation or some degree of fortification, to protect the inhabitants from surprise, and enable them to resist for a time an advancing host.

The mediæval castles of Great Britain may be divided into four classes: the simple fortified tower (a tradition of the remoter periods and similar to the outposts sculptured on the Trajan column), not of any considerable size, and yet sufficiently large to receive a small body of warriors, and afford accommodation for their provision and their arms. These may have stood singly, as towers of observation, to watch and harass for a time an aggressive force, and may have been surrounded by a temporary ditch, or a space enclosed by a stockade to receive cattle at night, or those of the countrymen near, in case of attack. They thus formed places of shelter even to the peasantry in times of danger. Such a tower was most likely the earliest predecessor of Alnwick Castle.

A second class of castles consisted of a large square donjon or tower, like those of London, Rochester, Richmond in Yorkshire, Bamfrough Castle, Newcastle, and others, usually attributed to our Norman invaders. These were divided into several stories in height, and each story distributed into one or more central halls, and several chambers and galleries gained in the thickness of the walls. A fortified curtain surrounded them, enclosing a considerable space, with intermediate towers, and one or two entrance gateways, with barbican, and postern, and sally gates. Some of these, as at Rochester and Newcastle, received considerable architectural decoration in the interior, the mouldings being carved in the doorways, chapel, and halls.

A third class of castle consists of a central group of distinct towers of considerable size, surrounding a middle court, united by curtain walls, and each tower more or less extensive, according to the distinctive purpose for which it was intended, as the entrance-gate, with its porter's rooms and marshal or constable's accommodation, and with the prisons. Another was appropriated to the baron; a third to the baroness communicating therewith; a fourth to the officers of the household; a fifth to guests; and another to the hall, kitchen, butteries, cellars, and offices for inferior retainers. The whole formed in itself a position of great strength, enabling the chief, his warriors and family, when the outworks were in possession of the enemy, still to hold out, until the means of resistance or the patience of the besieged were exhausted. Of this class is Alnwick, as likewise Conway and Caernarvon, and the old Bastille at Paris. They were generally surrounded by extensive areas, like the previous class, consisting of what are called the outer or entrance bailliou or ward, middle bailey, and so on; but occasionally, when attached to a town, as at Conway or in the case of the Bastille, these outer courts did not exist.

Our notice on castles in general should not stop here, and we may be permitted perhaps to

notice cursorily another class, consisting of a large square or circular court, having a fortified entrance gateway flanked by towers, with circular towers at the angles, or in the circumference of the precinct, united by curtain walls, against which were attached within the court subordinated buildings for residence, and offices of all descriptions, and the whole castle surrounded by a fosse. Such is Barnwell Castle, near Oundle, in Northamptonshire, and Rothsay, in the Isle of Bute, N.B. both which are very interesting examples, and deserve special study.

To resume, however, our history of Alnwick, for which purpose I avail myself of the elegant quarto volume, published by Charlotte Florentia, the present Dowager Duchess of Northumberland, illustrated by effective views, lithographed by Harding, from her Grace's very clever drawings, and accompanied by text written by Archdeacon Singleton, which is the authority for the annals it records,—

At the period of the Conquest, 1066, the castle and barony of Alnwick belonged to Gilbert Tyson, who was slain at the side of Harold. The Conqueror gave the granddaughter of Tyson in marriage to Ivo de Vesci, a Norman favourite, and the inheritance continued in the family till 1297, when it passed, in default of legitimate issue, to Anthony Bec, Bishop of Durham. The precise extent and features of the earliest castle under Tyson, it is impossible to ascertain; but it was enlarged by De Vesci, and it may be assumed that it consisted generally of the parts now standing, varied from time to time as necessity or expediency required, and which we shall find involved changes in certain parts, though not so radical as to alter the general aspect.

The Castle consists of a central keep, formed of a group of towers surrounding a court-yard about 100 feet square inside. This keep is encircled by a considerable plot of open ground, divided into two large courts, both which served as "places d'armes" for exercising and manoeuvring the troops, as we find drawn on the plans of about the middle of the seventeenth century, and probably in the outer one, was a jousting-ring and space for the tournaments, without doubt occasionally held here upon occasions of Royal visits. The whole contained about five acres within the walls, and was inclosed by a curtain wall fortified at distances by square and circular towers, with a principal barbican and entrance-gate next the town, by which access was given to the interior of the fortress.

The Curtain is the construction of various periods, the earliest portions being considered to be those of De Vesci; and the courses, instead of being stepped up into horizontal courses, follow the varied surface of the ground, in curved and parallel lines, and generally there are no projecting footings to form the foundation. There are very obvious traces of the De Vesci walls quite distinct from those of his successors; and signs of reparations, alterations, and additions are apparent in various parts. The curtain wall did not at first entirely inclose the keep, one of whose sides to the N.E. next the river, at the part where there was a steep ascent, was exposed to the country; but after the report of Clarkson, in 1556, who recommended the donjon being entirely disconnected and free from the park without, a portion of the outside ground was inclosed by constructing a curved curtain wall from the postern to the armourer's tower, and thus the keep was thereafter surrounded in its entire circuit by a continuous court. Originally, as we shall presently more particularly observe, the dwellings and offices for the retainers, and the subordinate domestic erections, were inside the outer and middle bailliums or wards, but in more peaceful recent times they have been removed outside to give more space to the courts, and more freedom to the noble's dwelling.

We will now take our survey of the circuit of the castle, and enumerate the several parts, with some short remarks on each division of the subject, following Clarkson's description of 1556, and certain plans now in existence, apparently made about the middle of the seventeenth century. It may here be mentioned, that we have some very remarkable records of the condition of the castle at certain fixed

periods, about a century apart;—A survey by Bellysis and others in 1537; Clarkson's survey in 1567, in consequence of which considerable works were done by Earl Thomas; and one of about 1650; and the middle of the last century is marked by the alterations under Hugh, first Duke of Northumberland.

The Entrance Gate from the town is preceded by a barbican, or outer enclosure, like the city gates of York up to a recent date, which gave great strength to this part as forming the approach. There was the outer gateway opening into a narrow way between two lofty walls, so that if an enemy had passed the outer gate, the warriors could be hemmed in, and be here exposed to the weapons and missiles of the besieged on the walls above. Clarkson in his survey, 1556, states, that there was once at this part a drawbridge, for further security. It is evident that a fosse, or ditch, ran along this western face of the curtain. Then there was a portcullis and several pairs of wooden gates, as mentioned by Clarkson, and inside is the porter's lodge, as of old. The architectural features of this gate-house and its barbican are very bold and striking, and the date may be assumed to be about 1350, at the time of Lord Percy, who added, it is supposed, some of the stone figures on the tops of the parapets. The only old figures are upon the middle gateway, and the half octagonal towers of the entrance-keep, and are in quiet attitudes; but the later ones are in all sorts of violent fantastic action. This gateway is a very striking feature, with the two advancing turrets of rough stonework rising up to a noble height; the parapets pierced with embrasures, and surmounted by figures in various attitudes; the return wall enclosing the narrow passage-way, backed by the gate-house rising above all, and by its frowning aspect forbidding approach to the foe. Clarkson notices this gate-house as two stories high, and as being in a very dilapidated condition.

Exchequer House.—Immediately within the gate-house, or porter's lodge, and in the court, there was a large building, two stories high, named the exchequer-house, but not now existing. It served for lodging, and possibly may have been appropriated to receive those strangers whom it was not expedient or prudent to allow to enter the inner part of the castle. To the right hand, immediately within the gate, was another large two-storied building, the lower part appropriated to stabling for the horses of strangers or retainers, or common uses; the upper floor for grain. This Clarkson represents as having been recently built (1567).

Abbot's Tower.—Turning northward, or to the left, on leaving the porter's lodge, the curtain wall follows in a straight line from north to south for a distance of 150 feet, up to a large square corner tower, 40 feet by 30 feet, called the Abbot's Tower, and supposed to have served as a place to receive the abbot of Alnwick Abbey, when that place was threatened or possessed by the enemy. Clarkson notices this tower as being, as it now is, three stories high; the lowermost then occupied as an armoury. Between the gate-house and the Abbot's Tower, the curtain wall has an unbattled gallery all along, with parapets and embrasures, and midway between the gate-house and the tower is a turret, sometimes, and now-a-days, called a garret, and, according to Clarkson, covered with freestone and two (houses) stories high. These small interior garrets served as abutments to the walls, from the face of which they project, and thus afforded an opportunity to the warriors of enfilading the outside of the walls from tower to tower.

The Abbot's Tower forms a noble and commanding object at the angle, and rises up high above the curtain, with a turret at its outer angle, and its stone figures on the parapets. Thence the enclosure wall pursues another north-easterly direction, almost at right angles, but in a sweep, towards one of the lofty towers of the keep. In its course it is divided into three sections by two garrets, with a chamber in each. The two first divisions have battlements to walk upon, parapets, and embrasures; and the construction for some height above the ground is remarkable for some of the Norman construction, consisting of parallel courses of

\* From a paper compiled from materials furnished by Mr. Salvin, the Commandant of the Castle, and other sources read by Professor Donaldson at the ordinary meetings of the Royal Institute of British Architects, on the 3rd and 17th of November last. See also p. 646, Vol. XIV.



small square stones. The third division, next the keep, had no battlement to walk upon, a precaution probably adopted in consequence of its proximity to the keep, so that the top might not form a gangway, affording easier means of access to the tower of the donjon.

As this forms the conclusion of the curtain wall on this side of the castle, we must resume the survey of its circuit by starting afresh from the Porter's Lodge House, in the same manner as Clarkson. On the southern side of the Gate House, the enclosure wall proceeds southward for about 80 feet in a straight direction to a square garret or turret like the ones already mentioned rising above the wall, the lower part acting as a buttress to the wall, and the upper part forming a small circular chamber. In a slightly slanting direction the circuit wall runs 70 feet to the corner tower, which is circular with a square base, consisting of three stories.

The various towers, the chapel, and the conduit were then described.

*The Keep or Donjon*, as Clarkson calls it, formed a polygon, with a court-yard in the centre, which was encircled by seven round towers and one square tower, under which was the gateway. The approach was by a draw-bridge over the moat, and on either side, in advance, semi-octagonal towers, added by the second Lord Percy, about 1350, to the original square Norman tower. These semi-octagonal towers rise four stories high, and contain on the entrance-floor accommodation for a porter, and, under the chamber, to the right, is a deep dungeon-prison, the only access to which is through the bottle-shaped ceiling by a trap in the floor, and there are loop-holes in the walls. The outer face of the archway next the court consists of a noble series of Norman mouldings, carved with enrichments, and there were originally two columns with their capitals on each side. Within the court, to the right, is a draw-well in the thickness of the wall, with three pointed arches, surmounted by one large discharging arch, forming a very picturesque object; beyond which is a doorway, leading into a vaulted chamber, called by Clarkson "a fayre vault, which is the buttery, in length xij yards, in breadth vi." Above this "fayre vault" was the hall, approached by an external flight of steps, and over the hall was the peculiar feature of two chambers. In the tower next that of the hall were contained the kitchen, sculleries, buttery, larder, &c. The lord's and lady's lodging was over the gate-house. The other towers contained the accommodation for the household. They were all detached, except in one case, forming separate dwellings, united by curtain walls for the purposes of defence. And again, to use Clarkson's own words, "upon the sayde lead ys a trimme walk and a fayre prospect." "There is rayzed on the west side of the said donjone one lytle square tower, called y<sup>e</sup> watche towre, above the lead xiv yards, wherein ys place for a watchman to be and a beken to be sett or hung."

But there is one curious paragraph highly illustrative of the economy of the times, which we shall quote literally. "And because thowre extreame wind the glase of the windowes of this & other my Lords Castells and houses here in this cuntry doothe decaye and waste, yt were goode the whole height of everie windowe, at the depart<sup>r</sup> of his L. from lyinge at any of his said Castells & houses & duringe the tyme of his L. absence or others lying in them, were taken down & lade apart in safetie; and, at sooch tyme as either his L. or any other sholde lie at anie of the said places, the same might then be sett uppe of newe, with small charge to his L. where nowe the decaye thereof shall be verie costlie & chargeable to be repayed."

We will now pursue the history of the castle of Alnwick, with occasional reference to some of its lords. As we have already noticed, in 1297 it came into the possession of Lord Henry de Percy by a deed of conveyance, the original of which is preserved among the family muniments of his Grace, now in the charge of Mr. Williams, as record-keeper, who has most obligingly called my attention to this very valuable and remarkable record. It is from Anthony Beck, Bishop of Durham, who, it is said, always wore a suit of armour under his bishop's robe, and was called the fighting bishop. It bears date

19th November, 1309, and two days hence will be 547 years old. It conveys to Henry de Percy and his heirs the barony, castle, manor, and town of Alnwick, with the towns, hamlets, and appurtenances thereunto belonging, with whatsoever else the said bishop had of the gift of the noble Lord William de Vesey within the barony aforesaid, and elsewhere in the county of Northumberland; and also the reversions of the dower lands of Isabella, widow of Lord John de Vesey the elder, and Isabella, widow of William de Vesey, expectant of the deaths of these ladies respectively.

The son of Henry de Percy defeated and took prisoner David, King of Scotland, at Neville's Cross, where 15,000 Scotchmen fell. He constructed the semi-octagon towers to the keep, as an advanced work, put up stone figures on the parapets, and added the barbican to the entrance gateway, and many other works.

The great grandson of the first Henry de Percy was created Earl of Northumberland at the coronation of the wretched Richard II. and, after vanquishing the Scots at Hamilton, in 1462, was himself slain at the battle of Bramham Moor, 2nd of March, 1497. His son was the valiant Hotspur, whom Shakespeare has immortalized, who was slain at Shrewsbury, 21st July, 1403, that is, four years before, and the son of Hotspur succeeded to the grandfather's inheritance. He repaired the castle, and fortified the town of Alnwick. Then succeeded the cruel and disastrous times of the civil wars, in which the Percys took always a conspicuous part, and paid with their blood their devotion to their allegiance for their sovereigns. The son of Hotspur fell at St. Alban's, and was buried in the lady chapel of the abbey: his son was slain at the battle of Towton, and Henry Percy, the fourth earl, was murdered in a popular tumult at Cockledge, in Yorkshire.

Mr. Dick, in his "Inscriptions and Devices in the Beauchamp Tower of the Tower of London," recently published, has the following remarkable paragraph in connection with this noble family, p. 28. Immediately below the above names is the following inscription:—

SARO: FIDELI:—  
INGGRAM  
PERCY  
1537.

(I will be faithful, Ingram Percy, 1537.)

During the year 1537, being the 28th of Henry VIII. we read of several rebellions in different parts of the country, caused through the great dislike that was generally felt to the alterations, which were being introduced in the religion of the country. In the latter part of the above year several of the northern gentlemen joined in a conspiracy (Aske's) to oppose the measures that were then being passed. Among others, were the two sons of Henry, the fifth Earl of Northumberland, (Sir) Thomas and Ingram Percy. This rebellion was quickly suppressed, and the authors of it apprehended. Thomas Percy was condemned and executed at Tyburn, the same year; but Ingram (the author of the above inscription) after being in confinement a short time, was liberated, and died in the latter end of the following year, 1538. The title and estates then seem to have been estrated for nineteen years, but were restored, in 1556, to Thomas, the grandson of the aforesaid Sir Thomas, and he became seventh Earl of Northumberland, by a grant of Philip and Mary. He executed considerable works to make good the dilapidations into which the castle had fallen during the period so disastrous to the family; and it was during this period that Clarkson's survey was made. The ravine tower was taken down, and the reparations and alterations carried out in pursuance of his report. This earl seems to have maintained the faith of his fathers, not adopting that of the Reformation. He was beheaded at York, August 22, 1572, under Elizabeth, avowing the Pope's supremacy, and was buried in the church of St. Crux, outside which he had suffered, and his iron helmet still hangs suspended on the wall near his grave. His son and successor was found shot dead in the Tower of London, 1555, also during the reign of Elizabeth.

In 1632, Algernon Percy, the tenth earl, succeeded to the inheritance: he was the Lord

High Admiral of England, and had the charge of the children of Charles I.; and during his life the large drawings appear to have been made, which give the plans and views of the castle with considerable accuracy and enable us more fully to appreciate its actual state at that time.

Afterwards the castle fell into great decay, and at the time of Charles II. 1649-60, it is described by Ogilvy, the cosmographer, as "once large but now ruined."

No incident of any importance is recorded as occurring in connection with Alnwick Castle from the middle of the seventeenth century till the middle of the last, when Lady Elizabeth Seymour, the heiress of this noble line, married Sir Hugh Smithson, bart. who, on the death of his wife's father, Algernon Duke of Somerset, became the thirteenth Earl of Northumberland, and was created Duke of Northumberland in October, 1766.

In his time were executed, by Adam the celebrated architect, very important works, that materially changed the aspect of the castle. The chapel, and all the domestic buildings which existed in the middle ward or ballium, were taken down, as also the exchequer-house in the outer ballium near the porter's lodge, and the large two-storied building opposite to it, so that the two wards were left quite free and disencumbered of buildings, and the moat round the keep was filled in, and earth piled up high against the donjon tower and its curtain walls. Numerous domestic offices were erected outside the south curtain wall from the southwest corner tower to the Garden tower. \* \* \*

There was the desire to retain the Decorative style of the Mediaeval times; but it assumed the taste since so expressively attributed to Batty Langley; and in order to gain more light, the narrow apertures of the original times were widened, and the upper range exhibited a series of quatrefoils, which destroyed the sentiment of the earlier character of the castle. But still, although the sizes of the dining-hall and reception-rooms were spacious, and they were lofty in height, they were devoid of facility of access, one room often serving as passage way to the other. Such was Alnwick about 1780.

#### THE WESTMINSTER-BRIDGE QUESTION.

A CORRESPONDENT, who signs himself "A Competitor," complains that in our article of December 13th, urging the prosecution of the works of the new Westminster-bridge, we had acted inconsistently with our constant advocacy of "justice to architects in the management of competitions"—and remembering that the question of the site of the bridge has been left for suggestions by competitors for the Government Offices, whose labour might be thrown away in case of any present decision;—and he argues that a delay of a few months might be tolerated even should the bridge afterwards go on. Now, as we urged in our number of August 30th, just one month before the particulars for the Government Offices were issued,—that Mr. Page should "be permitted" then "forthwith to carry out his design to completion," we rather think that the *inconsistency* would have been in our *omitting* to lend any additional force to an opinion which obviously must be formed by all who may balance the opposing arguments. Sooner or later, such arguments would have been brought to the case; and we really thought that in disclosing them some three months before the time for sending in designs for the Offices, we were doing our duty every way.

We were guided by the desire that we ever have for justice to our profession, as to another interest which we claim also to consider,—that of the tax-paying public. Indeed, it is not for the advantage of the profession that more money for public works should be wasted.

Our plea for justice involves more than our correspondent may at first perceive. Justice to the profession requires that we should expose these constant blunders and vacillations on the part of the administrators in public works,—fatal to the advancement of our art, equally by the false parsimony and the extravagance which are involved in the system. Justice is the





THE ORIGINAL ABODE OF THE ARCHITECTURAL MUSEUM, CANON-ROW, WESTMINSTER.

object with us when we claim, as in the case of the New Westminster-bridge, that professional knowledge should be deferred to, that professional character should be trusted, and that professional opinions after study of a subject should be preferred to opinions given after no study. Justice to the whole profession, again, requires that we should support an individual member of it when called to defend himself from erroneous imputations.

We must look to interests beyond the present hour, and even beyond the competition that is in question, which last, our readers know we think is not announced in terms calculated to secure the objects on either side. All the competitors, like ourselves, have gone through the same course of reasoning that we have done, if their designs can be based upon correct data,—which have been known to be in blue books and plans just as they were found by us. Probably many competitors will be misled, and will feel as though the conditions required the removal of Westminster-bridge, just as they may have been mistaken as to the limits of the street improvements. We shall regret these cases; but having done our part in warning competing architects as to their position through the confused instructions, surely we might next consider general professional interests and the interests of the public. No good, ultimate or immediate, will come to our profession from keeping back the truth. This simply is that several bridges are required, and that good sites have been named for them; that the existing route must be maintained as well for London communications as for the interests of the districts joined by the bridge; that waste of money cannot be sanctioned by us; that ground for approaches is provided,—and must, for the Middlesex side, by the very nature of the site, be left unbuild on in all the plans,—and that the bridge works should and will go on, whatever may be the plans submitted. The actual necessity for the continuance of the bridge we think is perceived by our

correspondent; but we do not think with him that anything is gained, but that rather much would be lost, by concealing for any time the facts.

#### THE FIRST HOME OF THE ARCHITECTURAL MUSEUM.

##### THE ARCHITECTURE OF THAMES-SIDE.

As it appears certain that the Architectural Museum will speedily be removed to Brompton, we have been led to engrave a view of the exterior of the building, or rather aggregate of buildings, in which the scheme has been nurtured, and the collection brought to its present size. It may be added, too, to our series illustrative of the architecture of Thames-side, and will serve to show how happily, in some instances, the most unlikely locality may be rendered serviceable. In a former number, we gave a view of the interior, and some of its multifarious contents. The present view will show that it is a primitive and many-gabled building of wood, similar to those which we have described, as forming a very large portion of old London before the Great Fire of 1666. If the picturesque block had been situated in some foreign place, we should probably have had numerous sketches of it by travelling artists.

In the foreground of our sketch "Father Thames" brings up the coal-barges to convenient piers, from which the contents of the vessels can be landed. On the right-hand side is a building with about a dozen peaked roofs, with troughs, and the sides covered upon massive upright posts of wood, with planks; the whole more resembling the timbering of an old-fashioned ship than a building on dry land; while the ladders at each end help to carry out the idea. The lower part of the building is occupied as stabling, and the upper story by the Museum. At the time the collection was first commenced here, the long loft bore a deserted and ruinous aspect, and did not seem a place to select for the

purpose of bringing together, for the use of students in the metropolis, casts, &c. of the choicest specimens of the carver's skill. However, as no other offered, and it being found that the nation would do nothing in the matter, it was determined by a few resolute individuals to take possession of this ark-like building, and bring into it those specimens of art which now so thickly occupy the long perspective of the gallery.

It has not been an easy matter to get the Institution recognised. Through perseverance and a good cause, however, the merits of the Architectural Museum have been acknowledged by the Government, and soon the Institution will be provided with larger space and a more certain status. It is nevertheless doubtful if it will produce the same effect in its new shell that it does in the picturesque though inconvenient building we have illustrated.

Amongst the recent additions to the Museum, Captain Tupper, of the Athenæum Club, has deposited a carefully-painted set of heraldic shields of the arms of England, from William I. to the present time; also a portion of a carved chimney-piece, from a house in King-street, Covent-garden. Mr. Mocatta has added to the collection a series of casts, of Greek and Roman ornament, very carefully taken; and Mr. W. P. Griffith has presented to the Museum the whole of his collection of fragments from the Temple Church, London, as well as a set of casts from St. Alban's Abbey, and some specimens taken from Roman candelabra, &c. Want of space sufficient for the proper exhibition of such valuable additions, has been one of the chief difficulties of the Museum.

VALUE OF PROPERTY IN WOLVERHAMPTON.—A shop and premises in the occupation of a poultryer, at the corner of St. John's-street, were last week submitted for sale by auction. A very large company was present. The premises are copyhold. After a spirited competition, they were knocked down to the occupier for 1,350*l.* The premises contain 52 square yards of land, so that, if the buildings (which have been erected many years) were not taken into consideration, 1,350*l.* would give 26*l.* per yard.



## THE CONVENTIONALISM OF ORNAMENT.

In the course of the discussion which occurred at the close of Mr. Owen Jones's paper "On Ornament," printed in our last and previous number, Mr. Donaldson said he concurred with the lecturer in stating that all ornament should be derived from nature, and also that in adopting natural forms some conventionalism must be introduced. To merely copy any leaf, for instance, in stone or marble, would be incongruous and unsuitable to the material. The subject of imitation in art, in respect to painting and sculpture, had been ably treated by M. Quatremère de Quincy, who showed how vulgar it was to copy literally natural objects. The highest effort of the mind, and the greatest proof of its creative power, was to be found, not in copying, but in the realization of certain impressions in a way that should not be different from that which nature had produced. In adapting any leaf or flower to the purpose of architectural ornament, some conventionalism must be used,—not a mere caprice, but a good, sound, sensible, philosophical development, in order to make it answer the necessary purpose, and produce a similar impression to that of nature itself. Probably in Mr. Owen Jones's complete work this idea might be illustrated by taking any special plant, as the lotus of the Egyptians, the acanthus or the parsley of the Greeks. The lotus in particular afforded great variety of form for ornamental purposes, both in the leaves, the bud, and the expanded flower; and the Egyptians had most fully availed themselves of it.

Mr. G. G. Scott said the only point on which he had intended to offer a remark had been anticipated by Mr. Donaldson; namely, the conventionalism of foliage. This was an exceedingly difficult subject, and it was hardly possible to determine the right principle. It might, however, be hoped that while each person earnestly worked in his own course they would get right in the end. The line of thought which he had himself generally followed, was based upon observing that during the Medieval period, up to a certain point, a purely conventional foliage was employed. This was not nature conventionalized: it was not derived from nature at all: it was derived by imitation from the earliest periods of antiquity; from the Assyrians through the Greeks and the Eastern Romans, or later Greeks, and thence from the Byzantines and the Early Gothic artists; and this process of imitation had led to the exquisitely beautiful style illustrated on the present occasion by the specimen from Stone Church, Kent. Many other specimens of the same era existed, which were as beautiful as conventional foliage could possibly be. In France, however, at the middle of the thirteenth century (and in England a little later, about 1280 or 1290), that conventional system was abandoned, and a very direct imitation of nature was adopted; but it appeared to him that the success which attended the change was hardly such as to bear out Mr. Owen Jones's remarks. The instances of copying in the latter part of the fourteenth century were not direct imitations of nature, and were, in fact, very inferior to the earlier specimens. In the Sainte Chapelle in Paris, nature was imitated absolutely, and there the effect was infinitely superior to the works of the latter part of the fourteenth and fifteenth centuries. The question, however, whether this direct imitation was equal to the earlier and purely conventional foliage, was not so easily settled. He himself thought the absolutely conventional was the best. The great point to which he wished to call attention was, that nature was the only source from which they had a right to copy at all. Beautiful as the specimen from Stone Church was (and there were thousands of examples equally beautiful), it would be wrong to copy any of it; but if they could invent an equally conventional foliage, they would do right. Until this could be done, they should study nature, and how to conventionalize it,—as Mr. Donaldson had said,—philosophically. No conventionalism could be excusable for which there was not a reason. If leaves were more beautiful than any other object for ornamental purposes they should be adhered to;

but it was natural to suppose that as they were not intended for ornaments for capitals (although they might suggest beautiful forms), some adaptation of them was essential to suit their forms to the place and the material in which they were employed, and especially to make up for the want of colour which they possessed in nature, and which must always affect any imitation of them. The little lines and markings of a natural leaf were merely the result of colour, and this was necessarily represented in carving by relief, more or less prominent; and this mode of conventionalism formed a style by itself. Another system of conventionalism was that of making ornament absolutely flat, so as to destroy all idea of relief, both being equally reasonable and philosophical. He thought Mr. Owen Jones's remarks a little too sweeping in speaking against the direct imitation of nature; but he agreed most entirely with him in the results which he was aiming at.

## BAD CEMENT CAST-WORK.

Much has been said of late with truth upon the subject of bad plaster cast-work and its chief cause, but I think there is still greater reason to complain of the cement cast-work—goodness being more important, as it is subject to influence of weather. It is not only bad indeed, in appearance, but in durability, the latter being seldom thought or cared about: this is in consequence of the builders or contractors getting it done in the cheapest manner, regardless, generally, of the quality, frequently not understanding good from bad, and the architect cannot discern the difference as regards durability: in fact, that which looks finest to the eye is frequently the worst to stand the weather, owing to the general practice of casting with little or no sand with the cement, causing a considerable saving of labour, and producing the smoothest surface, while a cheaper quality of cement can be used than if a proper quantity of sand is used; but the system of every trade being contracted for by one person, generally a carpenter by trade, or a painter, or no trade at all, so that anything fair to the eye passes for good in quality, is the chief cause;—thus it is we see so many failures in the use of cement, not only in cast-work, but in external work generally, for it is frequently the case that the best apparently executed job is the worst to endure; therefore, no architect or contractor knows when he is right with it. This arises out of several causes, as cheap, bad cement, of which there is much sold, cement only in name, too little sand used, quantity being, as I am told by journeymen, demanded by builders more than quality. Sometimes too little sand is used in ignorance, with the idea of greater durability. The system of sub-letting to task-masters, so prevalent, I need not comment upon, being notoriously bad. It requires all the vigilance of a responsible master plasterer, who is interested in the work he has to do, and will insist on every care being used to secure good cement work; but your last correspondent says masters of note are scarce, therefore it need be no wonder that the trade of plasterer is degenerating, for there cannot be so many apprentices to learn their trade properly; for an apprentice to a builder is at the mercy of the men in general, and if they are a "wet lot," as too many are, he must join with them or be despised. Many call themselves plasterers now; they start up when they become overgrown hawk-boys, and pick it up as they can in the crowd, for a builder seldom knows, with a large number of men of different trades, the abilities of one man more than another, and it is impossible for a foreman to feel the interest and credit at stake, to urge the care that is constantly necessary with most plasterers in the use of cement now, like a master who cares for his reputation and has the responsibility.

Architects generally specify great things, that cause a man of reputation to provide accordingly, but a low cutter comes in, gets the job, cuts everything very fine, and takes such advantage that a man of judgment and reputation would not think of, even to the putting an ordinary moulding upside down,—and then all

pass as certified; but dilapidations are found out when the contractor is paid, and it is too late; but cement-work should be guaranteed for durability,—for a man who understands his trade can do it with the cements of the present day.

Perhaps I may digress a little to say that it is a pity that cement is used at all for cast-work, as terra-cotta is to be had at little or no more expense than well-executed cement, and its superiority and durability are well known: it is capable, too, of high finish and bold relief, impossible with any cement, and may be made to match with it in general appearance for the decorative parts of a building.

JAS. PULHAM.

## THE BUILDING ACT.

THE first careful perusal of the "Metropolitan Building Act, 1855," suggested to me some sins both of omission and commission; and I could but reflect how the offences of commission aggravated the laches of omission; also how very preferable the Act would be with much of it expunged, selecting for excision those portions which were needless and with trifles, which were unnecessary, and which cramped the artistic design and constructive skill of the architect. We have now had a year's experience of the Act, and it has been my lot to note its working in divers districts, and from the somewhat peculiar character of my practice, under a great variety of circumstances. The observation has in no degree mitigated my objections, and has in addition manifested imperfections and absurdities which I did not foresee.

I am all-conscious of the difficulty of making prospective laws to meet every point in the infinite change of shape assumed by common events. I am aware how circumstances, like faces, are never precisely similar in all their features. The interference I draw is, that it is an error to attempt to bring about such uniformity by legislation. The peddling spirit that would interfere by Act of Parliament, with all the small incidents of existence, is now rampant. Individual members vigorously "ride a cock-horse" their respective illipitany hobby; while questions of universal social import are left to resolve themselves.

The district surveyors are in a more or less confessed state of obfuscation, for which they are in no sort to be blamed, because they are in no way accountable for their perplexity. The brightest intellect has the sorriest task, inasmuch as it grasps the larger quantity of inconsistencies and contradictions with which the Act teems. To the district surveyors my experience prompts me to award praise for the general intelligence and urbanity with which they perform their thankless duty; but the Act cannot be carried out literally; therefore, despite all the common sense and politeness of these officers, there exists the fatal want of uniformity in their views, and the practitioner has to contend with, or yield to, each peculiar interpretation. Hence arises the very usual prefatory remark before an opinion on any point of the Act is ventured, "Who is the district surveyor?" This ambiguity in the Act deters me now from setting forth some of the follies and grievances which have been forced on my attention, for I feel my statements and application of the clauses would meet many assailants; and it would be indeed unreasonable to occupy your columns with a battle of words which, from the very nature of the combat, must result in confusion. It may be said, in cases of differences of interpretation, a power of reference to the Board of Works is provided; but this, in small matters, is a vexatious, dilatory, and expensive process, and in important matters, the tribunal, to my mind, is also inadequate.

The Board of Works have likewise power to modify some of the rules of the Act; but the constitution of that Board does not inspire a belief that the wisdom of Imperial Parliament will be rendered more lucid and reasonable by their lucubrations. No, we must have a new Act; but it behoves us to take care we do not, as we have twice already done, go from bad to worse.

Here is a fit vocation for the Institute of Architects. Let them appoint a committee to



receive information and opinions by whomsoever tendered, and especially to incite the district surveyors to furnish up their intellects, and send laconic clear statements of faults in the Act; with their impression of a remedy. Let the committee weigh well the few—the very few points on which it is expedient to legislate, and then, from the careful digest of all their information, prepare the necessary schedules as lucidly as practicable, to enforce what is expedient, and no more. The scheme, when mature, should be submitted for discussion and adoption by the Institute, and presented to Government, with a petition for the repeal of the present and the substitution of a new Act in accordance with the resolutions.

Let the Institute do this work well, and they will raise themselves in the estimation of the public, and do good service to the State.

C. F.

### THE METROPOLITAN BUILDING ACT.

#### OPENINGS AND RECESSES.

Your correspondent, "An Observer," with reference to his observations on the stack of offices in Fenchurch-street, has made them somewhat prematurely, and not with that circumspection which an observer addressing a public journal should exercise; for if he will take another observation when the building is completed, and then reckon in the area of the cornice and that portion of the substructure below the level of the ground-line not apparent to the casual observer, he will then find that the thirteenth section of the Metropolitan Building Act has been complied with.

Although in this case I am enabled to show that the requirements of the Act have been complied with, I entirely concur in your observations that in City buildings,—built as they are for purposes of business, trade, or manufacture, where every particle of light in the dark and narrow streets is of the utmost importance, and where, as every foot of ground attains its maximum of value, large open spaces for light are practically unobtainable,—it is in some instances impossible, without serious detriment, to comply strictly with the thirteenth section of the Act before referred to.

EDWARD FAISON,

Architect of the Fenchurch-street Offices.

You have inserted a communication from a correspondent, under the head of "The Metropolitan Building Act," which appears to reflect upon the manner in which the district surveyors perform their duties.

The Building Act is, no doubt, very defective, and there are many of the regulations which it is extremely difficult to enforce, but in the case referred to the "contravention of the Act" is so far from clear, that it is the opinion of many district surveyors, besides myself, that the legal effect of section 13 is only to prevent any recesses being made in a wall when the openings exceed one-half of the whole area of the wall.

The words are "taken together," and any other interpretation would prevent any windows being made on the upper story of a house when the whole ground story was a shop-front, and there was only one story above of less height than the shop.

A DISTRICT SURVEYOR.

### THE MAIN DRAINAGE QUESTION.

SINCE our last notice of this matter, the names of the three engineers, one military and two civil, who are appointed by Sir Benjamin Hall to consider the plan B\* of the Metropolitan Board of Works, to receive any other plans, and to review the whole subject preparatory to the application to Parliament for the funds, have been mentioned. They are, Captain Douglas Galton, R.E. Mr. Simpson, and Mr. Thos. E. Blackwell, of Clifton, Bristol. Of the special qualifications of the first we know little; the second has had much experience, and is now conducting the drainage of Stockholm; and the third has a certain reputation, and is the engineer to the drainage commissioners for the lower level of the county of Gloucester, for which he has constructed a new outfall in the Severn, in conjunction with Mr. Brunel and the late Mr. Rendel. Mr. Robert Stephenson and Sir Wm. Cubitt were, we believe, considered as already pledged to a particular course.

Thus, after the lapse of a year, the question is just in the same state as when it was taken up by the Metropolitan Board. No satisfactory result was to be expected from giving over such

a subject to a body of men—very well meaning, perhaps but—hardly possessed of professional experience or the special scientific knowledge. Sir Benjamin Hall now does just that which we advised the Board to do,—he has submitted the whole case to the judgment of two or three engineers. The gentlemen named will of course be in communication with the Treasury Commission, appointed to inquire into the most effectual means of distributing the sewage of towns, and of applying it to beneficial and profitable uses; and which consists of Lord Fortman, Messrs. H. Ker Seymour, M.P.; J. K. Brunel, Robert Rawlinson, Professor J. T. Way, Mr. J. B. Lawes, and Dr. Southwood Smith. The success of the lime process of conversion, as noticed in our last number but one, has been at least such as lends great importance to this branch of the question, which was very inadequately attended to by the Metropolitan Board. The plans of the 150 or more engineers who were induced to send in their projects to the first Metropolitan Commission of Sewers, will perhaps be brought forth, and for which none of the number have yet received any reward.

The purification of the river cannot be considered as complete till the same process of diversion or conversion which is adopted for London is applied in the case of towns on the upper part of the river, where the new system of sewerage has not always avoided the substitution of one evil for another. Some reference has already been made to this question at the Board, as also to the provision of sub-ways.

### A PARK FOR SOUTHWARK.

CONSIDERING the unhealthful pre-eminence of the south side of the metropolis, and especially of Bermondsey and adjoining districts of Southwark, there is no quarter of the metropolitan bounds which can urge such strong claims to the immediate formation of a park in which something like vital power to resist the debilitating agencies peculiar to the district may be inhaled by the thousands who inhabit its teeming and pent-up courts and lanes. The vestry of Bermondsey have shown that in this excellent cause they have at heart the good of their humbler brethren, as well as their own, inasmuch as they some time since caused their surveyor, Mr. George Elkington, to prepare a plan of an available site for a park within a mile-and-a-half of London-bridge, and therefore easily accessible to the densely-populated districts in the parish of St. Saviour, St. Olave, St. John, St. George, and Bermondsey, lying between it and London-bridge; and within a mile of the populous parts of Rotherhithe, and by means of the Thames Tunnel easily accessible even to the parishes on the north bank of the Thames. This site is at present principally occupied by market gardeners, and may therefore now be purchased at moderate cost, although shortly, as buildings increase in the parish, it will become valuable as building land.

Having had the plan printed, the vestry caused an application to be made to Sir B. Hall for aid from the Consolidated Fund to carry out the object in view. Sir Benjamin expressed a strong opinion as to the desirableness of some such large open space as that suggested, but stated that the Commons would be certain to refuse any sum from the Consolidated Fund even for this purpose, and requested the vestry to lay the matter before the Metropolitan Board of Works, who had power to deal with it.

This the vestry have done, and we rejoice to learn that their plan is now under the careful consideration of the Board, and that the chairman, Mr. Thwaites, with other members, have personally inspected the land proposed to be purchased for the public. They were also, we believe, about to view the intended Finsbury-park and Hampstead; and, at a period when the subject of open spaces for public recreation is about to be discussed, the advocacy of the *Builder* shall not be wanting towards an urgent pleading for the interests of the working population.

At present there is no open space appropriated for the public use within the south-eastern district; and as the site shown in the plan has been selected by the vestry as the nearest avail-

able spot to the most crowded localities in the Borough, we earnestly hope that all interested will, if possible, unite with one accord in insisting on its speedy conversion into a park for Southwark.

### PROVINCIAL NEWS.

**Norwich.**—The guardians appear to be in no hurry to carry out the adopted designs for the new workhouse (those of "Humanitas"), and it is even hinted that the execution of the works is to be postponed for the present. This, however, appears improbable. The new free library building is very nearly ready for opening, great progress having been made lately with the interior fittings.

**Morville (Bridgnorth).**—New schools have been lately erected in Morville. They stand on a piece of ground to the right of the road from Bridgnorth, nearly opposite Morville Hall, and are built of stone in the Early English style. The architect was Mr. R. Griffiths, of Quatford. The building comprises a school-room, accommodating about seventy boys and girls, and a residence for the master and mistress. The ground on which the building stands, as well as the stone of which it is composed, were given by Sir John Acton, of Aldenham. The school is intended to accommodate the children of the three parishes of Acton, Morville, and Round Acton. Since the opening the number of scholars has amounted to seventy, so that, in fact, there already is no room for more. Industrial training is to be practised, and a piece of land at the side of the schools is to be laid out in allotments of 5 yards by 4, for purposes of gardening. The profit realized by this kind of industrial employment will be given to the scholars as prizes.

**West Bromwich.**—It has been resolved by the local Commissioners to advertise for a site on which to erect a new market-place.

**Liverpool.**—Mr. Milner having added, to his already extensive safe-works at Windsor, a large hall 100 feet square, called the Phoenix-hall, the new building was inaugurated on Friday last, when the proprietor, several of his friends, and 350 of his workmen, together with their wives and sweethearts, took tea together. In all about 800 sat down, in the light safe department, which is on the third floor of the hall. The extension of the works of the New Phoenix-hall, as described in the local *Journal*, consists of three stories, about 100 feet square each, and the height of the floor is from 14 to 16 feet, but the area will be doubled when another contemplated addition is effected. The gable of the principal front is surmounted with a phoenix, and there is provision made for a clock tower, which is not yet erected. Attention has been paid to light, ventilation, and the comforts and conveniences of the workmen. The building has been erected in three months: Messrs. Jones and Jump were the contractors. The machinery to be erected in this hall embraces every appliance for carrying out the manufacture of Messrs. Milner's safes, and in it 350 workmen can pursue their calling with ease.

### CHURCH-BUILDING NEWS.

**Stonemarket.**—The chapels in the new cemetery at this place, were completed on the 20th ult. The design is Early English, and the materials used are red and black bricks, with cut flints. The roofs are covered with green Bangor slates, and ornamental ridge tiles. The windows are glazed with cathedral glass. All the interior woodwork is stained oak, and varnished. The roofs are plastered between the rafters, and tinted a slight blue. The contractor for the works was Mr. Smith, of Rutlesden; and the architect, Mr. Edwin G. Pennington, of London.

**Halesworth.**—The parish church of Holton, near Halesworth, has lately been restored and enlarged. The enlargement consists of a north aisle, the length of the nave and nearly half that of the chancel. In the restoration, the south wall, eastern jambs, arch gable, and south arch, were nearly rebuilt, and the roofs re-framed. The interior has been fitted up with new benches, the aisle floors laid with small red-and-buff tiles, and the pulpit, desk, vestry,



screens, and doors, executed in oak, with iron-work. A small artistic window, executed by Heaton and Butler, of London, has been fixed in the west-side of the tower, open to the church, through the western archway. The chancel has also been improved, the walls plastered with stone copings, new floor, benches, and altar rail. The entire works were carried out by Mr. Thomas Farrow, of Diss, from plans furnished by Mr. J. H. Hakewell, of London, architect.

**Newport (Isle of Wight).**—The monument to the memory of the daughter of Charles I. which the Queen commissioned Baron Marochetti to execute, has just been erected in St. Thomas's Church, Newport, where the Princess, who died in captivity at Carisbrook Castle, lies buried. The monument represents the figure of a youthful woman, reclining in a recess, resembling the cell of a prison. The pillow on which the head of the figure rests is an open Bible, in which can be seen the following words:—"Come unto me, all ye that are weary and heavy laden, and I will give you rest." The following inscription is on the monument, viz.,—"To the memory of the Princess Elizabeth, daughter of King Charles I. who died at Carisbrook Castle, on Sunday, Sept. 8, 1650, and is interred beneath the chancel of this church. This monument is erected, as a token of respect for her virtues and of sympathy for her sufferings, by Victoria, R. 1856." The figure of the Princess is of white marble. The recess or cell is of Caen stone.

**Worcester.**—A monumental slab is shortly to be placed in the cathedral here, to the memory of members of the St. John family. It is of black marble, inlaid with brass, and is 7 feet 6 inches high by 3 feet 9 inches wide. The centre represents a floriated cross, on Mount Calvary, and on either side are the arms of the late Canon St. John and his wife. The emblems of the four Evangelists are wrought in the angles of the slab. Messrs. Hardman and Co. of Birmingham, executed this memorial under the direction of Mr. Perkins, the architect of the Dean and Chapter. When the new east window has been completed, the slab will be laid flat on the floor in the Lady Chapel, above the graves of Canon and Mrs. St. John.

**Winborne.**—The minister, to which we lately made a brief allusion, is, it seems, about to undergo a complete restoration. The chancel and its aisles having recently been repaired, under the superintendence of Mr. Wyatt, at a cost of 5,000*l.*, raised on the tiles. The necessity of restoring the remainder of the edifice has become more apparent. Mr. E. G. Banks, Sir R. P. Glynn, Mr. W. Digby, the Earl of Shaftesbury, and other leading persons of the county of Dorset and vicinity, have offered their aid, and it is fully expected that the work will rapidly progress.

**Bristol.**—A new church is about to be built in this city, chiefly for the accommodation of mariners; at the cost of the Rev. R. H. W. Miles, son of the late Mr. P. Miles, of Leigh-court.

**Morville.**—The church of Morville, near Bridgnorth, has been reopened, after having been under repair since June last, during which time service has been carried on in the chancel. The roof of the nave has been raised to the old pitch, and a clerestory, with three triplet-pointed windows, added. The gable is coped with Westwood stone, and terminated by an ornamental stone cross. The south wall of the church has been recessed, and the windows again inserted. A new porch has been added on the south side. The roof of this porch is in open timber work, and the floor is laid with encaustic tiles. There is an old Norman entrance from this porch, and the timber which disfigured the upper part has been removed, the capitals and columns cleaned-up, and a new stone arch filled in. The interior of the church consists of a nave, two side aisles, and a commodious chancel. The architecture is of an unusual character. The nave is separated from the aisles by high Norman arches supported on piers of peculiar construction, having four light shafts clustering round a square centre. The capitals of these pillars are in good condition, and are all different from each other. The chancel arch is set in fine ashlar work, and has billetted mouldings. In clearing away the plaster which covered the

ashlar, a course of brickwork directly surrounding the arch has come to light, which gives an unusual effect. The nave had formerly a flat ordinary ceiling at a level with the top of the nave arches; but this has been removed, and a high peaked roof substituted, showing the construction timber, the trusses having arched ribs carried on moulded stone corbels. The chancel was re-roofed about two years ago (at the joint expense of Lord Sudeley and the Rev. G. L. Waysey, the incumbent) with open timber work, but of rather later date than that of the nave. The chancel is lighted with plain perpendicular windows. The floor within the communion rails is slightly raised, and laid with varnished encaustic tiles. There is also a wainscoting of panelled oak.

**West Bromwich.**—The money requisite for a new cemetery and chapels (not to exceed 7,000*l.*) is to be borrowed by the local commissioners, who have fixed upon a site for the same of eight acres.

**Doncaster.**—The parish church building committee, at a conference held at the Mansion House, have pointed out to the town council that they have paid to the contractors for work done, the sum of 20,446*l.* with the further liability of 6,525*l.* making a total of 26,971*l.* The subscriptions amount to 29,201*l.*; leaving a probable balance in hand of 1,229*l.* The estimated cost of the final completion of the church is an additional sum of 10,749*l.*; making a total amount of 37,720*l.* So that a further sum of 8,519*l.* is now required. It will be found, says the local *Gazette* in allusion to these figures, that the burgesses and the inhabitants generally will be almost unanimous in their opinion that the tower should be built forthwith. We, therefore, it adds, confidently trust that the means will be shortly procured for at once completing the edifice, firmly believing that the funds of the town council, under these unprecedented circumstances, cannot be devoted to a more useful or better purpose.

**Wigan.**—The local burial board has found it necessary to borrow another 1,500*l.* in order to complete the new cemetery. The sum previously borrowed was 14,000*l.* The preliminary expenses, land, and tenants' compensation amounted to 3,950*l.* and there have been paid on account of contracts, architect's and surveyor's commissions, laying out and planning, &c. 9,667*l.* The balance due on the contract for chapels and other work is 1,116*l.*; commissions and charges for plans, &c. by architect and surveyor, 400*l.*

**Baekie.**—The new chapel for the accommodation of the Roman Catholic congregation here is being pushed towards completion. The interior has of late been fitted up; the chancel, in particular, is being finished. On either side of the altar appear what are intended to be highly-finished copies in oil of the Nativity, of Christ Stilling the Tempest, of the Taking Down from the Cross, and of the Resurrection. These are nearly 20 feet high. The artist who is painting these is a Mr. Russell.

#### STAINED GLASS.

**Portsea.**—The north window of the transept of the church of the Holy Trinity, Portsea, has been filled with stained glass, to the memory of the late incumbent, the Rev. Richard John Scobell Valentine, M.A. The window contains four subjects from the New Testament. The artists were Messrs. Wailes, of Newcastle.

**Springfield (Chelmsford).**—The churches in Springfield have just received some offerings. A memorial three-light window, executed by Messrs. Powell, has been erected on the north side of the nave of the parish church, placed there by Mr. Wyndham Holgate and his sisters, in memory of their mother. At Trinity Chapel a tribute of respect and sympathy has been paid to the Rev. G. B. Hamilton and his family, in the shape of a window placed there by the subscription of friends, aided by the Amateur Society of Glass Painters, in memory of his son, who last year lost his life in the wreck of the *St. Aob.*

**Stonehurst.**—In the church connected with the R.C. College, a stained-glass window has recently been placed. The window is dedicated to St. Joseph, and is of six lights, each containing one principal subject from the life of the

saint, viz.,—"The journey into Bethlehem," "St. Joseph with the infant Christ in his arms," "The journey into Egypt," "The disputation in the Temple," "Christ in Nazareth, subject to his parents," and "The death of St. Joseph." Choirs of angels are introduced in the heads of the lights, bearing texts. The tracery lights are filled with emblematical foliated ornaments and scrolls. The window was designed and executed by Messrs. Pilkington, of St. Helen's, Lancashire.

**Oldham.**—In the new Lyceum building, lately opened, is a stained-glass window, consisting of one large central plate (of about 40 superficial feet), with allegorical group of Science, Art, and Literature, treated in monochrome, producing the effect of *basso-relievo*. Above and below are two smaller plates; the upper principally composed of appropriate ornament, the lower also ornamental, but additionally inclosing the "arms" of the town. There are also a series of plates surrounding the three thus mentioned, forming an ornamental border or setting thereto. The whole were designed and executed by Messrs. Pilkington.

**Lillington (Warwickshire).**—In Lillington Church, Mr. Holland, of Warwick, has put up a stained-glass east window, in the Decorated style, containing the following subjects, namely, the Baptism, Last Supper, and Crucifixion of our Lord, under canopies, with the figures of the twelve apostles. In a small side window is the figure of our Saviour, as the good shepherd, supported by St. Peter and St. Paul, with appropriate emblems; also a single light, containing the subject—our Saviour appearing to Mary Magdalen, to whom the church is dedicated.

**Various.**—Mr. Holland has also put up painted windows in the following churches:—In Brotherton Church, Yorkshire, dedicated to the memory of William and Arabella Ramsden; at North Mimms, Hertfordshire, to the memory of Harriet and Richard Gould; at St. Mary's Church, Lancaster, to the memory of Joseph Dockray; a stained-glass memorial window in North Kilworth Church; a stained-glass east window, containing the principal subjects in the life of Christ, in Addingham Church, Yorkshire; and a stained-glass window in the church of St. Denys, Sleaford, Lincolnshire, to the memory of Henrietta Banks, of Hickington, near Sleaford.

#### THE GALLERY OF THE BANK OF FRANCE.

RUE DE LA VILLIÈRE, PARIS.

THE Hôtel de la Villière was built by François Mansart, in 1620, and restored in a splendid manner, in 1719, by Robert de Cotte. François was the uncle of Jules Hardouin Mansart, who built the dome of the Invalides, in Paris. François is mentioned with great commendation by Quatremère de Quincy, in his *Memoir of Jules Hardouin*.

After the Duke de la Villière, the Count de Toulouze, brother of the Duke du Maine, and son, like him, of Madame de Montespan and Louis XIV. inhabited this hotel, which took his name, and remained in his family until the revolution of 1789. At that epoch it was the residence of his son, the Duke de Penthièvre, and of his daughter, the beautiful and unfortunate Princess de Lamballe, who withdrew to be near her father on the death of her husband. Florian also inhabited this hotel, and composed many of his fables beneath its elaborate ceilings.

The gallery, the only portion that has not undergone change, is a superb specimen of the magnificence of the interiors of that age. However much we may miss the admirable hangings, screens, and furniture, which made up the decorative whole of this gallery, an idea may be formed, from our engraving, of the effect the richness of its decorations must have produced.

In 1812 the Bank of France gave up the Hôtel Massiac, and took possession of this structure, which, since that period, has been considerably increased in size.

It is in the gallery here represented by us that the Bank holds its meetings.

**GAS.**—The Hartlepool Gas and Water Company have reduced the price of their gas for the ensuing half-year from 4s. 6d. to 4s. 2d. per 1,000 cubic feet.





THE GALLERY OF THE BANK OF FRANCE, PARIS.—F. MASSART, ARCHITECT.







## FOREIGN INTELLIGENCE.

"Leonard da Vinci et son Ecole." Par A. F. Rio. Paris, 1855.—M. Rio is an art-historian advantageously known by the seriousness of his observations, and the wide bearing of his views. The present work forms the second volume of his "*Art Chrétien*." There are persons who ascribe to Leonardo the highest pitch of general information and inventiveness, and M. Rio compares him with Schelling, and states that he had, a hundred years before Bacon, uttered some of the finest philosophies of the English sage. His practical skill was of equal extent, and thus he could write *naively* to Lodovigo il Moro, in Milan,—“I can execute any sculpture in clay, marble, and bronze; and every painting like any one, whoever he may be.” At the same time he offers his services as a military engineer and inventor of new war-machines, and as a hydraulic architect: later he undertakes the construction of large churches. On the top of all his acquirements come his thorough knowledge of mathematics and his ease in writing, by which also he became the founder of a great school of painters. Leonardo da Vinci's literary MSS. and designs lie *untouched* (?) in the Paris library, and M. Rio does not much enter on them, neither does he do so in reference to Leonardo's engineering and architectural labours. On the unmatched Last Supper of Milan new light is thrown, and the similar pictures by Giotto, Raffaele, in St. Onofrio, and Florence, where, also, in the refectory of St. Marco, the same subject is painted by the hand of Ghirlandajo. In this place, we may state, that the original sketches of the heads of the apostles, by Leonardo, are in possession of the present Grand Duchess of Saxe Weimar, probably directed thither by Goethe. Leonardo da Vinci was one of the few men who could afford to be universal, without merging into superficiality. It was the pupils of Da Vinci who, for a while, stayed that decay of the art of painting, which those of Raffaele and Michelangelo could not. M. Rio's work will probably accelerate one on the same subject by M. Passavant, in Frankfurt, who possesses the richest materials on the old Milanese masters.

Transylvania.—National Museum.—The establishing of a similar institution has been broached before, but the present plan is one much improved, as it comprises an *ensemble* of literary, historical, archæological, and natural collections and activity. The chief inducement was the late Count Kemeny, who left his whole collection to his fatherland, and Count Miklo presented his summer palace, near Clausenburg for the same purpose.

The Winkelmann Festival, Bonn.—This yearly celebration took place on the 9th ult. Professor Welcker spoke of the merits of Winkelmann in connection with his great contemporary Goethe. He then gave a description of two mural paintings in the Ternite collection—one representing a famished father nurtured by the breasts of his daughter. Professor Jahn showed representations of other wall-paintings of a Columbarium of the Villa Pamphili, Rome, which affords some new information on the public and private life of the Romans. M. Freudenberg spoke of the bed of the Rhine as a source of archæological specimens, and stated that on occasion of a late dragging for a new quay building near Bonn, many valuable specimens were found at a depth of from 5 to 7 feet; amongst them a unique specimen of a *Gladius Hispanicus*, the blade being 22 inches in length and 2 inches in width, and the handle  $7\frac{1}{2}$  inches in length. The next number of the "*Transactions of the Verein*" will contain engravings of the most interesting of these Rhine-bed *trouvailles*.

Egypt.—Public Works.—As the telegraphic line between Sardinia and Africa seems impracticable, on account of the great depth of the sea, one from Candia to Alexandria is now contemplated. In the interior of Egypt, the lines from Rosetta and Damiette to Alexandria and Suez, and that from Cairo to Upper Egypt, are in progress. The contract for an iron railway bridge across the Rosetta arm of the Nile, near Kafr Laiss, has been entered into. It is to be 40 feet broad, with two lines of rails, beside two tram-roads for camels. The income of the railroad from Alexandria to Cairo is most

satisfactory, and no accident has happened yet on it.

Munich: Collection of Vases.—It has been long regretted, that the collection of painted vases given by King Ludwig to the Pinakotheka did not produce its adequate advantages, either to art-study or art-practice, for want of a proper catalogue. This has been remedied of late by Professor Otto Jahn, whose work, besides a detailed description of the single specimens, contains an introduction of some extent (246 pages), where not only the history of this department of art is treated with great acumen, but also the place assigned which the vase painting of the ancients occupies in the whole economy of art.

The Wittelsbach Museum.—King Max. has endeavoured to add to the many art-collections of the Bavarian capital, one bearing on the history of his own family, but which has been lately enlarged into one of *Bavarian national antiquities*. A number of specimens have thus become collected, amongst which are *basso-reliefs* of Ludwig the Bearded, found at Kufstein, a sculpture of the famous Altenhof church, representing Emperor Ludwig and his wife. The collection of seals is very considerable, and it is intended that by the multiplication of casts, the now almost exploded art of the die-sinker may be somewhat revived.

## THE STRENGTH OF WROUGHT AND CAST IRON.

INSTITUTION OF CIVIL ENGINEERS.

We have already mentioned that on the 9th of December, a paper “On the Laws of the Strength of Wrought and Cast Iron,” by Mr. William Bell, was read.

In this paper, it was stated that the chief point had been the consideration of the longitudinal, as compared with the transverse, strength of wrought and cast iron. For this purpose the whole of the experiments made up to the present time, on tearing asunder, or crushing, bars of cast iron, and those made by breaking bars transversely, had been taken, and from them, and the known formulae of elasticity, such values of the constants in the formulae had been deduced, as would satisfy each experiment individually. And by comparison a general view of the accordance or non-accordance of theory with experiment had been obtained, and some general laws arrived at.

The mathematical theory of elasticity, as given by Poisson and Navier, was assumed. By finding, for each experimental beam, the centre of gravity of the area of cross section, through which, according to this theory, the neutral axis passed, and calculating the moment of the forces with respect to this axis, the application of the formulae to the experiments was easily made.

The first constant obtained, was the weight per square inch of the modulus of elasticity, and this, when deduced from the transverse strain, was taken from the deflexions produced by small weights, and in all cases where the beam, or bar, was very little strained. For wrought iron, the most comparable experiments were considered to be those detailed in the “Iron Commissioners’ Report,” which gave, by transverse strain, from 12,200 tons to 12,750 tons per square inch, and by extension of bars, from 12,200 tons to 12,900 tons per square inch. For cast iron the averages of Low Moor, Bladenovon, and Gartsherrie irons were, from tension 6,305 tons, from compression 5,698 tons, and from transverse strain 5,968 tons per square inch. Other experiments on the transverse strain of wrought iron gave from 9,000 to 14,000 tons per square inch; whilst with cast iron the results were found to vary from 4,000 to 8,000 tons. On this point, it was stated, that Mr. W. H. Barlow, F.R.S. in some experiments on the neutral axis, recently laid before the Royal Society, found results nearly agreeing with the higher number.

Another mode of arriving at the value of the modulus of elasticity, by means of the bending or breaking weight of “long pillars,” was also examined; the ratios of the lengths of the pillars to their diameters being taken as abscissæ, and the bending weights, obtained both from theory and experiment, as ordinates. It was thus found that, for the experiments on wrought-iron pillars, given in the before-mentioned Report, the curve of theory agreed very well with the curve of observation, until the length became shorter than 70 times the thickness. The experiments on cast-iron pillars examined were those in the second volume of “*Treggold on Cast Iron*.” The correspondence with theory was very good for those with the ends rounded, until the length became shorter than 20 times the diameter; and for those with the ends flat, until the length became shorter than 50 times

the diameter. The hollow cylindrical pillars, with one exception—that of a short pillar—gave values for the modulus of elasticity of from 4,350 to 6,680 tons. The correspondence between theory and experiment seemed, in the author's opinion, to warrant the conclusion, that the theory was perfectly trustworthy when only small compressions and extensions were concerned.

One constant obtained was the value in tons per square inch of the tension and compression of the outside particles, when the beam became ruptured by transverse strain. For wrought iron the experiments on solid iron bars were fewer than could be wished, and gave results varying between  $14\frac{1}{2}$  and 18½ tons per square inch. In this material it was thought that it might probably be the compressive, rather than the tensile, force which determined the fracture. The only experiments on the direct compression of wrought iron were those on two bars, given in the Iron Commissioners’ Report, where one gave way under a strain of 14½ tons, the other under 13½ tons per square inch. The quality of iron was not stated, but it was believed to have been soft. It was asserted that the better kinds of wrought iron were able to sustain a greater tensile force, the worse kinds a greater compressive force. According to Mr. Eason Hodgkinson's experiments, wrought iron might be defined to have its tensile to its compressive force nearly in a ratio of equality; cast iron to have those forces in a ratio of about 1 to 6. This being so, it was thought worthy of consideration, whether in the plates of a large wrought-iron bridge subjected to compression, a slightly inferior quality of iron might be used, not only as more economical but as better in itself.

With regard to riveted iron, the results from all the wrought-iron tubes in the before-mentioned report, gave from 7½ to 24½ tons per square inch. The lower numbers were apparently caused by using thin plates for tubes of comparatively large diameter. If this were avoided, it was thought that in calculating the strength of wrought-iron tubes, 15 tons per square inch might be allowed for the breaking force on the outside particles.

When the experiments on cast-iron were examined in this manner, the following fact became apparent: experiments on small bars broken transversely gave results of 20 tons, and even more, for the tension and compression of the outside particles, when the experiments were examined by the ordinary theory. If these results were diminished by 20 per cent, which it appeared would more than make up the difference caused by assuming the ordinary law, there was still a result of, say 16 tons, while by direct experiments on the tensile force of cast iron, 7 or 8 tons was found to be the utmost that it would bear. In regard to this subject, Mr. W. H. Barlow had alluded to the alternative hypothesis that the neutral axis shifted its position as the beam became strained, and that when rupture took place the neutral axis was “at, or above, the top of the beam.” This hypothesis was considered by the author to be contrary to the elementary principles of mechanics; for as the sum of the compressive forces on one side of the axis must be equal to the sum of the tensile forces on the other, therefore if there were tensions on one side of the axis, there must be an area out of which to get compressions sufficient to balance them on the other.

In experiments on the direct tensile strength, it was assumed that the outward force was uniformly distributed over the area of the bar; in other words, that the resultant of the external forces acting on the bar passed through, and had the same direction with, the axis. This probably obtained in wrought iron from its great extensibility before rupture; but in cast iron there was no such extensibility, and this point was, therefore, to some extent, doubtful. If a few experiments were made, in which the force deviated from the axis by certain large and measurable amounts, and then were made to approach the axis, until some law was obtained which could be tested, this point would be set at rest. A table was then given, showing the values of the forces on the outside particles at the time of rupture, in tons per square inch, from which it appeared that there was a diminution as the size of the beams increased. Beams 3 inches by 3 inches, as compared with those of 1 inch by 1 inch, showed a falling off of strength to the extent of about 4 tons per square inch. The results derived from Mr. Hodgkinson's and Mr. T. Cubitt's experiments gave about 10 tons per square inch, when the sound beams only of the latter experimenter were included in the calculation, or 9½ tons per square inch when the unsound beams were taken into account. From this table it appeared, that the break-weight of tolerably large girders might be calculated with considerable accuracy, by using 7 or 8 tons per square inch as the force of tension on the outside particles, when rupture took place.

In conclusion the author expressed the hope that



he had succeeded in establishing the following propositions—

1st. That in experiments where the materials were but slightly strained, theory and experiment coincided.

2nd. That where the ordinary theory was applied to the rupture of beams, and especially large beams, of wrought iron, theory and experiment practically coincided.

3rd. That there appeared to be no good reason for supposing that the neutral axis shifted its position, to any extent worth noticing, even up to the time of fracture.

4th. That in cast iron, although theory seemed to differ from experiment, when the transverse strength of small bars was compared with the direct tensile strength, assuming the latter to be correctly stated at 7 or 8 tons per square inch, yet when the transverse strength of large girders was compared with the direct tensile strength, the coincidence of theory and experiment was nearly exact.

5th. That the ordinary theory of the strength of materials was more trustworthy than was generally supposed.

#### COMPOSITION OF ORNAMENT: ANGLES IN NATURE.

I AM glad to see Mr. Owen Jones's very able lecture, on the composition of ornament, given in your pages; but at the same time I cannot agree with him entirely, and there is one point more especially, which I cannot help noticing. He states that, "All junctions of curved lines with curved, or of curved lines with straight, should be tangential to each other;" that this is a natural law, and "that in the whole range of vegetable productions, it will be impossible to find a line butting on another line."\*

Now, I have studied nature pretty closely for many years, and in all my observations I have found, on the contrary, vegetation to be full of angles, butting lines, and curves directly opposed to the tangential, and instead of nature "abhorring an angle," she literally appears to revel in angles. She even condescends to use the right angle, which perhaps may be considered the least beautiful of all angles.

The ferns grow by forking in angles, and the leaflets are usually at an angle with the stem, often at right angles. The mistletoe grows by forking, with the berries growing in the angles: the terminal leaves are curved, and opposed to the tangential.

The common poplar grows with its branches opposed to the tangential, that is, the branch issues with a curve from the parent stem in such a manner, that if the curve were continued it would directly cross the stem. And, further, the branches issue one out of the other so constantly in this manner, as to form curves issuing from curves opposed to the tangential. (See fig. 1.)

It is also common in many other trees and plants besides the poplar, as in the horse chestnut, where the branches issue in pairs, and at the top of the tree may be seen forming nearly an inverted semicircle across the centre stem. The leaf bud issues from the axilla or angle, formed by the branch, and the contrary curve is for the express purpose of giving room for the leaf bud to expand and grow. The branches of the elm and oak, besides many others, all issue in angles, and at this time of the year may be distinctly seen, and I imagine require only to be mentioned to be recognised.

In the acacia the leaflets, which are arranged in pairs, with one terminal one, often issue at right angles to the centre stem. In the reticulation of leaves it is more common still. Annexed is a tracing from a natural leaf of the woody nightshade, in which, from the main rib which runs up the centre, issue ribs at right angles, which run into the side lobes, and in the upper part of the leaf small ribs issue from the centre in curves opposed to the tangential; and so often is this the case, in leaves, that it would almost appear that the tangential is the exception. (See fig. 2.)

I shall probably be told that there are still minute curves which join these angular lines to

#### COMPOSITION OF ORNAMENTAL ANGLES IN NATURE.



Fig. 1.



Fig. 2.—Natural Leaf, Woody Nightshade.

the parent stem: in some cases this is so, but in many cases, in the leaf I have sent you, for instance, I cannot detect it even with the aid of a powerful magnifying glass.

Now, this angular manner and opposition to the tangential, should be taken advantage of in art; and if it were, I do not doubt but that, being in accordance with nature's laws, we should find in it another element of the beautiful; while, if we confine ourselves, as has hitherto been done, to the strictly flowing and tangential lines, we shall probably never get beyond the beaten track.

In one of my own designs for ornament, which I exhibited at a lecture,\* I gave last year at the Architectural Museum, I formed the branching, or leading lines in the foliage, in an angular manner, concealing the junctions of the stems with stipule, as in nature, and I have since put the principle into practice in several cases, with (according to my own opinion) a good deal of success.

There is one great fault in the classical compositions of ornament of the present day, which is entirely opposed to natural laws. I should have liked to have seen this particularly noticed by Mr. Jones: it is the constant practice of making foliage grow two ways. There is a large lamp bracket now in the Architectural Exhibition, with an animal balancing a lamp on its head, and with its tail twisted round the scroll, in which the foliage is made to grow two ways twice in the same scroll. This practice is such a violation of nature, that it cannot be too strongly condemned. JAMES K. COLLING.

#### THE STAGE AN INSTRUCTOR IN ART.

WE have some early impressions which are as fixed in the memory now as if the matters had happened yesterday, and the most vivid of these are—the first sight of a great English cathedral; the first peep of the sea from a rocky coast; a glimpse at a glorious picture by Vandyke, in an ancient hall; and the first visit to the theatre, fitted with what seemed magical views, enlivened by actors in sparkling costume. The name of the play has gone out of memory, and yet we could sketch the wood scene, the ancient castle, the garden walk and wrought-iron gates, the cottage, mill, and stream; the dungeon-like interior, in which were grim iron bars and massive clamps and chains, and a room of the fashion of thirty years ago. No doubt there were many discrepancies in the dates and styles of things, and that the same castle represented the keep in "Macbeth," and that which belonged to the libertine marquis in the play of 1790. It was all one then. Neither the value of fitness of costume nor of pictorial representations was generally felt. Fine

prints were not then to be seen in every shop-window, and the *Penny Magazine* and cheap yet carefully illustrated histories had not fallen into the hands of the rising generation. There were no exhibition of pictures in the provinces, no schools of art, so that to thousands the only pictures of any merit at all were those which were presented upon the stage.

Owing to various causes, so great has been the spread of information, that at the present day there are few who visit the boxes and pits of the better theatres, who have not a strong notion that the accessories of a play (the scenery, dresses, and music) ought to be correct and in keeping with the time and place portrayed. The day was when Garrick played all characters in a dress-wig and laced coat, and our painters painted, in subjects connected with modern English history, the figures dressed in Roman and other classical costume. If the best actor at present in existence were to attempt what Garrick did, he would surely be hooted off the stage by the most ignorant in the theatre.

Long after Shakespeare's time, it was from the stage alone that the populace could acquire a glimmering idea of history, and, when scene-painting was introduced, some notion of the power of pictorial art.

Many of our great plays have the power of fascination in themselves, and certain fastidious persons would rather read than witness their performance. The stage, however, has still a mission to fulfil, for in another and important way it has become almost as much a means of diffusing taste and love of art as, before the days of books, it was the means of conveying other instruction.

We have of late years seen pictures on the London stage as powerful in effect and other high qualities of art, as can be found on more permanent canvass, and this is not without its use, not only to those who witness them, but far beyond, for the taste inculcated reflects into many byways, where a sparkle of the beautiful irradiates, and is useful.

There seems to be a natural taste for beauty in every sensible human creature that is born; but this is too often marred, quenched, and polluted. It is astounding to witness the avidity with which those who have had no education rush off to supply the want by various musical and other amusements. At an early age they run to the penny concert and theatre, and we have heard more than one city missionary express his gladness that cheap panoramas and other harmless yet amusing things, which keep many of their visitors out of worse places and give fresh ideas, were being opened to them. No doubt much vice is assembled in some of the lower metropolitan theatres; but the vicious are likely to be improved, rather than otherwise, by having good things put before them, and as the smaller theatres follow, accord-

\* When the paper was read, Mr. T'Anson took the same objection to the remark and the lecture, in explanation replied that he only intended to say that Nature abhorred an angle, not the angular. However angular the leading lines of any natural production might be, there was always a curve at their point of junction. Modern artists too often forget the curve, and put the angles instead.—Ed.

\* On form, light, and shade in architectural foliage, and given in the *Builder*, vol. xiii p. 620.



ing to their means, the larger ones, it must be a natural consequence that the greater the amount of perfection attained in the better houses, the greater will become the artistic skill which will be bestowed upon those who so much require every good aid.

CHRISTMAS has given the scene-painters an opportunity to exhibit their skill and fancy, and in some cases has been well taken advantage of. We hear great praises of two scenes in the Pantomime at Drury-lane, and of Mr. Fenton's doings at the Lyceum, but have not yet seen them.

At the *Princess's*, where "Aladdin and his Wonderful Lamp" have been taken for the subject, the crowd was so great on the night we visited it, that with the exception of a glittering scene of the descent of the Flying Palace, built apparently of mother of pearl and jewels (Query: Should the architect have 5 per cent. on the cost when such materials are used?), which we glimpsed over the heads of a lobbyful of people behind the upper boxes, we have as yet seen little of it.

The artists of this theatre, and some extra hands, are all busy on a play of the "immortal Williams," as the French critic called him the other day, which will introduce a large amount of architectural scenery. Mr. Kean is never tired, and deserves his success.

At the *Haymarket*, Mr. Calcott has painted some charming scenes for the opening story, written by Mr. Buckstone, and founded on "The Babes in the Wood." Mr. Beverley must look to his laurels, for with much of the skill of the latter in mechanical arrangements, Mr. Calcott, in natural scenery, will beat him if he choose to study. By a glance at nature he might have made the scene of "a Blackberry Brake, at the fall of the leaf," perfect—as it is, it is a beautiful picture. The transformation scene, with a Turner-like background, and the apotheosis of the Babes, is highly creditable to him, and very elegant.

For *The Olympic*, our Aristophanes, Mr. Planché, has taken the outline of the fairy tale, *Jeanne et Belle*, for his groundwork, and under the title of "Young and Handsome," has, with language delicately nice, and sentiment so pure it would not soil bookmush, contributed to the stage a perfectly original poem, full of philosophy and wit, which will be dug up in a time to come, and commented on as a composition irrespective of its acting capabilities. Mr. Gray has painted for it two or three very pretty scenes, especially the Valley of Violets and the Castle of Flowers, although not quite such as the author's compositions were usually set in by Madame Vestris. The last scene, which has a number of beautiful candelabra of Dresden ware, is marred by some dark "flies" close to the flat canvass, which produce a gloom where all should be light. Robson is admirable in a new line, and though some of the actors are manifestly unequal to the parts assigned them, and prevent the recognition of the completeness of the allegory throughout, the whole is a great success.

#### LONDON MECHANICS' INSTITUTION.

FROM the great interest you at all times take in any matters connected with mechanical and ornamental art, I think it will not prove altogether uninteresting to yourself or subscribers, to be made acquainted with the fact, that the members of this Institution will hold an exhibition of drawings, on Friday, January 2nd, 1857, and three following days, to which the public will be admitted free, by tickets, to be obtained of myself, or by application at the library of the Institution.

The exhibition will be entirely confined to the productions of members, and I believe that most of them will possess sufficient merit to convince the public, that although the Institution has suffered much in consequence of its heavy debt to the family of its great benefactor, the late Dr. Birkbeck, to whom it owes, for principal and interest, the sum of about 8,000*l.*, which we are now compelled to appeal to the public to assist us in paying, — it is still pursuing a career useful to the community at large, and worthy of the public support it so much stands in need of. I and my colleagues feel confident that the public will never allow the parent Institution — the founder of upwards of 600 Literary

and Scientific Institutions, now existing in all parts of the kingdom, that has given instruction to upwards of 40,000 adults (amongst whom have been men who are now occupying a high position in the learned professions and useful manufactures of this country), — to perish for want of that timely aid which, promptly given, may restore it to the former proud position it occupied amongst the institutions of this metropolis.

GEO. WM. EAGLE,

Hon. Sec. to Exhibition and other Committees.

#### THE LAY OF THE LAST COMPETITOR.

Ye great and mighty architects, who sit at home at ease,  
Accustom'd long to calculate at five per cent. your fees;  
(Now feasible no more, alas! unless we one and all  
Unite like bricks to save ourselves from going to the wall).

Let sleep and health and happiness, await a future day,  
And let your midnight lamps be trimmed, to lengthen out  
the ray;

For a prize is in the market, a fat prize to be won!  
So says the *Builder's* title-page, and all can read who run.

The burial board of Sunderland require of plans the best,  
For chapels, lodges, cemetery-grounds, walls, fences, and  
the rest;

And that liberal and fair may be the order of the day,  
Full twenty pounds they offer for the best designs to pay.

Reserving to themselves, of course, the right to keep the  
best,

Or send them to their authors back, condemn'd amongst  
the rest;

But still each worthy candidate should bear in mind  
that he

Who pays his journey there and back, the ground may  
visit free!

No fame nor fortune to the wight who wins the bulky prize,  
His services the burial board will never recognise!  
Wry-hopes, indeed! these Rye-hope-men hold out unto the  
craft,

They look upon the draughtsmen as an animal of draught.

Almost two thousand pounds they'll spend, whilst twenty  
is the prize,

As architects have sinecure appointments in their eyes;  
Their labour is diversion, or they work perhaps for fame,  
Content to leave posterity a tombstone, and a name.

The architects who notice such advertisements as these  
Shall due the death of men who lived to feed their own  
dis ease;

And burial board, while wandering their cemetery round,  
May see the ghosts of those who paid a visit to the ground.

Why, England, merry England, "where health and plenty  
cheer

The lab'ring swain," are architects denied their beef and  
beer?

Have cultivated intellects no claim upon your soil?  
Or is the labour lighted'n when the mind bears all the  
toil?

If competition still goes on, as it is wont to go,  
The day will come when burial boards may yet, for aught  
we know,

Have competition for their graves, nor ever die vacuity to fill!  
Each member finds the cheapest man his duty to fill!

Dublin.

C. G.

#### AN INSCRIPTION FOR THE WESTMINSTER BELL.

GREAT Tom of Canterbury was thus inscribed:—

"In magni Thomæ laude,  
Risono bin bon sine fraude."

Allow me to suggest the following for the  
Westminster Bell:—

"In Beckettii, Q. C. laude,  
Risono Big Den sine fraude."

CLAPPER.

#### IRON AND STEEL.

THE preliminary meeting of the South Staffordshire ironmasters was held at Wolverhampton, on Wednesday in last week, when it was decided to retain present rates. The attendance was greater than for many previous meetings. These prices, nominally recognised, are 9*l.* for best common bars; hoops and sheets, without being more definitely fixed, being—the former from 10*l.* to 20*l.*; and the latter from 30*l.* to 40*l.* above the price of bars. It is felt that these rates are likely to cause the American demand to continue limited, as, with the addition of the import duty of 30 per cent. exacted in the country, the American ironmasters in Pennsylvania are able to compete with English iron. Pig iron has been firmer for the last few weeks. No attempt will now be made to reduce wages.

The Uchatius steel appears to be favourably regarded. The Bbbw Vale Iron Company are manufacturing it into rails, which are said to have three times the strength of the best iron rails of the same weight. The Company do not intend to appropriate their license exclusively to their own manufacture, and have already granted licenses to others, it is said, on moderate terms. Messrs. Spence and Son are licensed to employ the Uchatius process.

The Sheffield manufacturers long complained of the difficulty of preserving the polish on their exported steel goods, till they reached the consumer. The following process has been adopted:—Dissolve lime in a sufficient quantity of water to form a cream;

dip the instruments, and let them dry in the air. This process is said to be equally applicable to tinplate, sheet-iron, and cast metal, and effectually to protect the article coated from any appearance of rust, even when exposed to damp.

A process by which copper, it is alleged, can not only be deposited on the surface of iron, but allow of rolling and stamping to any requisite extent, has been patented by Mr. Tytherleigh, of Birmingham, and *Aris's Gazette* reports favourably of it. The principle is analogous to that of soldering, the difference being that the granulated metal used in soldering is spread over the surface of the iron, instead of being merely applied to the edges which the workman desires to unite. The patentee prepares the iron by what is technically called "pickling," or cleansing it. He then spreads evenly over the surface the common brass solder, and over this he spreads a quantity of borax to act as a flux. The sheet so prepared is placed in a furnace heated to the proper degree, and after remaining in the fire for about ten seconds, is withdrawn and permitted to cool, the short space of time mentioned being amply sufficient to ensure the union of the metals. Iron thus coated has been subjected to the severest tests in annealing, rolling, and planishing, and has successfully endured them all. Iron nails, &c. can also be coated in a bath of copper or brass. The advantages of such an invention are obvious. The innumerable articles now made of brass or copper may in future be made of iron, coated with either of these, and the danger arising from oxidation of the iron be obviated.

#### COMPETITIONS.

*Scarborough.*—In reply to some inquiries we are able to say that a design, by Mr. T. Oliver, jun., has been adopted for the new Congregational Church and Schools, proposed to be erected on the North Cliff, Scarborough. The Venetian Gothic has been selected as the basis of the style of architecture for the buildings. They will display alternate bands of coloured brickwork, with terra-cotta enrichments and dressings.

*Foleshill Workhouse Competition.*—In reply to the queries of A. M. in your issue of December 20th, I can only state, in answer to "What next?" that having been in Coventry on purpose to make some inquiries, with a view to further proceedings, I found there were twenty-four sets of plans sent in on Monday evening, and that the board of guardians met on the Wednesday at eleven, and separated at four o'clock, having in five hours thoroughly examined each of the plans, as they were justly bound to do. Their mode of selection was as follows. The chairman took one plan apparently promiscuously from the pile, and placing it on the table, said,—"Gentlemen, I propose this plan stay at the top of the table till a better be found." The plan remained there: one other was selected; and the authors of the others were informed, per circular, that their plans "might be had for fetching!" The author of the first-named plan was then invited to the house of the chairman, whose guest he remained for some time, and returned home; from whence, on the 16th of December, a fresh ground-plan, much smaller than the one selected, was sent, together with a letter, in which he stated that, "by doing away with the first ground-plan, and adopting the one now sent, he thinks he can reduce the cost of the building to the sum mentioned," and alleging as his reason for so doing, that during the preparation of the original design he was so busy he could not devote that attention to it he ought to have done. Under these circumstances, would it not be well for the competitors whose designs have been thus summarily disposed of, to meet in Coventry, exhibit their designs to the ratepayers, and consult as to the best mode of forcing the guardians to adopt some fairer method of dealing with those who in good faith replied to their advertisement? I send you my name, and am,

ONE WHOSE DESIGN WAS "SENT  
TO COVENTRY."

#### SHEERNESS WATERWORKS.

A COMPANY is now in the course of formation for the supply of the town of Sheerness with water. It appears that the inhabitants are dependent upon two wells, and that the water is distributed from house to house in barrels, drawn by donkeys, and sold at so much per pailful. Within the last few months one of the wells has become choked up, and it has been thought by some persons a favourable opportunity to form a company to establish efficient waterworks, and to carry the water through pipes to every house in the place. A public meeting was held on the 18th ult. which was well attended. The promoters explained the necessitous condition of the town, and the means by which they proposed to carry out the company under the new Limited Liability Act. Mr. John Whichcord,



as engineer, pointed out the probable cost of the scheme, and drew a comparison showing the great saving which will be effected by the consumers if the company is carried out, as they will then obtain an abundant supply for a mere trifle, whereas they now pay heavily for a meagre dole. Mr. Freud, contractor, gave his opinions as to the practicability of carrying out the proposed scheme, and resolutions were unanimously passed by the meeting, expressing its sympathy with the movement, and pledging itself to support it by every means in its power.

#### "NATIONAL GALLERY."

THE point as to where and how the new National Gallery is to be erected is now variously mooted.

As one who is much devoted to architecture and the fine arts, I beg leave to throw in a suggestion which, to my thinking, if adopted, would put us nationally on somewhat as good a footing as our continental neighbours.

Three things appear to be first in consideration,—first, the site; secondly, the arrangements; thirdly, the style. As to the first, the nation has a good right to say, this ought to be "Trafalgar-square," as to the second, that the structure should consist of a grand marble hall of entrance, a grand marble staircase, with steps having risers of only 4 inches, which makes ascent easy for the weakest, and is—architecturally—the only proper scale of stair for buildings of consequence. The building to be otherwise occupied by three grand galleries; the whole paved with encaustic tiles, in plain chiaroscuro, and to form a grand quadrangle. The three galleries to be divided, by way of distinction and for effect, into saloons.

The lower gallery to be devoted to sculpture, ancient and modern, with copies by our best sculptors of ancient *chef-d'œuvres* in that art from all parts of Europe; the archaeological relics,—curious objects without exhibition of high art,—to be kept in their appropriate place, the British Museum, where the broken wonders from Nineveh and other places are well placed for the research of the learned antiquarian. The second gallery, or first-floor, to be devoted to the sciences; and the third gallery—the loftiest of the whole, lighted from above—to be devoted to ancient and modern painting, and copies of the first merit from the great works of all the galleries in existence.

At the four angles, I should say there ought to be four staircases, to give access and egress for the officials, or for such of the public as might wish to ascend or descend in such direction.

For accommodating this arrangement, I should say Government cannot do better to meet the national wish than clear the ground north of the present gallery, and realise a grand area for constructing "a magnificent quadrangle," being composed of the three galleries above described, and in the area within, to place a splendid fountain, to be called the "Fountain of Neptune," formed by a figure of Neptune, of heroic size, culminating a group, composed of the four quarters of the globe, with secondary jets by Tritons, and with tributary ones by dolphins round. The third point to consider is the style, and this I should say ought to be Roman; the Romans having the credit of introducing the lieue of beauty into architecture, by the adoption of the arch, and thus getting rid of the monotonous character of Grecian structure, which presents to the eye only perpendicular and horizontal lines.

With the Roman style comes in all the noble enrichment of high art, in all its branches; and in my mind's eye, I now behold a palatial building rising lofty to view on the site of our present gallery, which by altitude should inspire the sublime, and by the richness of its pillared, arched, and sculptured front disclose, by its glorious combination, the beautiful; which would make it vie with any structure raised for like purposes among the nations of the earth. If Parliament, for its own use and benefit, does not scruple to expend a million of money on the Palace of Westminster, the nation has a good right to demand a million of its own levies, to give expression to its own views as to high art and the sciences. The nation never ought to submit to having its accumulating treasures put into temporary snobbish receptacles, where multitudes of the people, who help to pay for every national expenditure, would have to make a day's journey to get to them.

If such design against the national will is carried out, I, for one, who have to contribute a good sum annually to the exigencies and exchequer of the country, shall, with multitudes of others, no doubt, necessarily feel deeply indignant.

WM. MASON, Lieut.-Colonel.

THAMES TUNNEL.—During the week ending 27th December, 24,870 passengers passed through, and paid the sum of 1037. 12s. 6d.

#### THE WESTMINSTER CLOCK HAMMER.

MR. LOSEBY may depend upon it that he will find some little regard to truth expedient in the long run, even if he gets people to believe him for a week without it. In justification of his foolish and malicious charge, that I designed the Westminster clock for a hammer of only 120 lbs. he now goes back to a table of sizes of bells and hammers furnished to the Astronomer Royal by the late Mr. Dent, in 1846, with which I had no more to do than Mr. Loseby himself. And of this table he knows the following things as well as I do:—

1. The hammer there set down with 120 lbs. opposite to it is not a hammer of that weight, but is the reduced weight of a heavier hammer for the angle of 35 deg.

2. It was expressly stated there to be proposed as the hammer for a bell, not of 14 tons, like Mr. Vulliamy's 150 lbs. hammer, but for a bell like the Oxford one, which is the worst large bell in England, and therefore has a much lighter hammer.

3. That plan never was adopted by any contract whatever.

4. It was proposed six years before I was consulted about the clock.

5. As soon as I was consulted I prepared a new plan, with the concurrence of the Astronomer Royal, which the Company of Clockmakers themselves described as so different from Mr. Dent's former plan, that it ought to have been, in their opinion, thrown open to a fresh competition.

He says that my statement that I contemplated a hammer of nearly eight times the power represented by him, is not confirmed by the Parliamentary papers. He knows perfectly well that that was not the place to which I referred him to find it, but to the Encyclopædia Britannica Treatise on Clockmaking, written by me in 1854, and sold by Mr. Dent. Nothing at all appears about it in the Parliamentary papers, because that and all other details were left to the judgment of Mr. Airy and myself by the contract.

He says that Mr. Vulliamy's plan, adopted by the Company of Clockmakers, was stronger than mine, because the great wheel of their striking part was 3½ feet, whereas mine is only 3 feet. But he knows that in that plan the great wheel was not the striking wheel; and he ought to know that that was one of the most glaring defects of that most defective plan. It was actually intended to raise the hammer for a 14-ton bell by pins set in the second wheel of the train, acting on a lever consisting of a half-inch round rod, where mine is 2 inches square in section.

His rage against cast-iron wheels is only the old Clerkenwell clockmakers' prejudice, with which they have steadily resisted every improvement in clock-making, and I shall not enter into that here. When any of them can make a turret clock on their plan, equal in performance to Mr. Dent's cast-iron ones, it will be time enough to discuss it.

Mr. Loseby has really outdone himself in his desire to give a finishing stroke to my plan, by saying that the Government is to pay Mr. Dent, for executing it, as much as they would have paid Mr. Vulliamy, if they had adopted his. Even if that were so, I do not see what the Government, or the public, would have to complain of, since Mr. Vulliamy's clock (as the Astronomer Royal reported) was nothing better, in point of accuracy, than "a large village clock," and it was totally unfit for its work besides. But the fact is, as Mr. Loseby again very well knows, Mr. Dent's contract is for 1900*l.* and Mr. Vulliamy's estimate (which he never would give until he knew it could not be accepted) was 3,500*l.*

This is a pretty fair amount of "fabrication" for one letter, I think.

If Mr. Loseby prefers bad bells, like the Oxford one, and most of the large English bells, which will only bear a clapper of ¼th of their weight, or less, to good ones, like the Westminster bell and some of the great continental bells, with clappers two or three times as heavy, that is a matter of taste, on which he must have his own way. I wish the Clockmakers' Company, and the opposition bell-founders, joy of their advocate's taste, as well as his veracity.

E. B. DENISON.

#### Books Received.

*The Churches of Essex Architecturally Described and Illustrated.* By GEORGE BUCKLER, Architect. Bell and Daldy, 186, Fleet-street, London. 1856. Eighth and concluding part of the volume.

WE regret to find that what was designed to be an account of the Essex churches has resolved itself into a volume containing descriptions of twenty-two only of these edifices, a circumstance which suggests a fear that the work has not met with the success which it merits, although

we think it is also to be regretted that the illustrations were not more numerous. The present part is devoted to Stebbing Church, with ground-plan, and a view of the chancel arch; All Saints' Church, Stanway, with ground-plan, and a sketch of the tower basement; and to St. Albright's Chapel, Stanway, with ground-plan. The title-page, index, and preface, are also comprised in the part now issued.

*The Transactions of the Institution of Civil Engineers of Ireland. Sessions 1849-54. Vol. IV. Parts I. II. and III. Dublin: S. B. Oldham, 8, Suffolk-street. London: Weale, High Holborn.*

THOUGH late in issue, these transactions form a publication of permanent value. The parts under notice contain important papers on railways, tunnels, bridges, viaducts and roads, and on river discharges and rain falls, sluice-doors, screw pumps, blasting, drainage, iron girders, earthworks, and various other subjects, chiefly by members of the Institution.

*Curiosities of History; with new Lights: a Book for Old and Young.* By JOHN TIMBS, F.S.A. Bogue, Fleet-street. 1857.

WE could not have opened our list of books dated "1857" with one more generally suitable to this holiday season of relaxation from professional duties, than Mr. Timbs's little volume: it is, indeed, a suitable one for old and young; and its curt little sections of historical curiosities afford a never-ending fund of refreshing "living waters" to dive occasionally into, and to clear the mind of jading wrinkling cares.

*England's Greatness: its Rise and Progress in Government, Laws, Religion, and social Life; Agriculture, Commerce, and Manufactures; Science, Literature, and the Arts; from the earliest Period to the Peace of Paris.* By JOHN WADE, V. P. Institut D'Afrique (Historical Section), Paris. Longman and Co. London. 1856.

IT is not our part to enter here into any elaborate exposition or criticism on the contents of this very interesting and able volume, although there is not a little in it that is professionally interesting to architects, as well as generally interesting to men of mind in all professions, as indeed any work on such a subject, displaying anything like research and reflection, cannot but be.

The author's aim has been to supply a deficiency in English literature, and compendiously, but in sufficient breadth of facts and philosophy, to exemplify, to the historical student or the more elaborate inquirer, the mystery of England's power, diversified interests, and resplendent name. The work is not a mere abridgment of British history, or a brief narrative of political progress with which every one is familiar; but a condensed embodiment, in spirit and form, of national development, as characterised by its most remarkable epochs illustrated by individual traits and memorable transitions, and exemplified in the contemporary growth of art, industry, intellect, social life, and gradations. The national picture has been completed by laying under contribution, history, biography, science, art, and literature; and in the art-review, neither architecture, engineering sculpture, nor painting, is overlooked. On the whole, this rather bulky little volume of 800 pages, small octavo, cannot fail to be regarded and treated as an important subject for discussion and quotation by our literary critics.

#### VARIORUM.

"NOTES on Toll Reform and the Turnpike and Ticket System; with suggested Plans for the Abolition of Toll-gates," &c. by Mr. J. E. Bradfield, is a pamphlet, published at the Toll Reform (Central) Office, 19, Strand, and containing a complete Compendium of all that has been written and published on this subject, as well as of the views and suggestions of the author, who, in fact, is the conductor of the toll reform movement. A movement, so popular, with a conductor so able, can scarcely fail to be successful; and we hope it may now be safely predicted, that the doom of the metropolitan toll-bar nuisance is sealed. The plans



suggested by Mr. Bradfield appear to be well worthy of close consideration. He proposes to remove all the gates, to a radius of six miles from Charing-cross, so as at once to free, as it were, the "lungs" of London of the incubus, and at same time consolidating the districts into five or six instead of sixteen, as at present; and that a head office be established in a central situation, such as Charing-cross, whence tickets shall be issued, running by the month or quarter, freeing all the owners' horses, day tickets being similarly issued at each gate, for say sixpence each; and by these and other arrangements, the author is of opinion, that in five, or at least in ten years, the whole of the turnpikes in Middlesex would be got rid of altogether. The merits of this and other suggestions, however, must be gathered from the author's own words, and not from the imperfect outline which alone our space allows us to give. To any additional tax on horses we may add, Mr. Bradfield strongly and justly objects. "A little shilling tract on 'Domestic Economy,' in the School Series edited by the Rev. G. R. Gleig, M.A. Inspector General of Military Schools, has been issued by Messrs. Longman and Co. It seems to be full of useful hints, recipes, prescriptions, &c. specially intended for families with small incomes.

### Miscellanea.

**YORK SCHOOL OF ART.**—On the evening of Wednesday in last week, Mr. J. C. Swallow made public his last Free Lesson on Drawing to the working men of York. The lecturer was aided by a series of white chalk drawings on a black ground, which he said were the actual drawings he had made upon the black board at previous lessons, having been able, after various experiments, to transfer them in the state they then saw them. The lecturer drew line after line on the black board, his pupils copying each line and touch as it was done, till the design was developed, explaining and describing as he proceeded. At the close, he made some remarks on the study of art. This study, as he observed, possesses the great and peculiar charm, that it is absolutely unmoaned with the contests of ordinary life: men are often deeply divided and set at variance by private interests, by political questions, and by philosophical problems, whilst they are attracted and united by a taste for the beautiful in art. It was the high privilege of art that it had fallen to its lot to contribute to the happiness and prosperity of man in the most different epochs or states of society. Art had shed its splendours over the Roman empire and the Greek Commonwealth, and had flourished equally in the bosom of the turbulent republics of the middle ages, and under the majestic sway of Louis XIV. But if it be true, as we learn from history and experience, that free governments afford a soil most suitable to the production of native talent, to the maturing the powers of the human mind, and to the growth of every species of excellence, by opening to merit the prospect of reward and distinction, no country could be better adapted than our own to encourage every one, from the highest to the lowest, to pursue the study of the fine arts.

**IRON ORE DISCOVERIES AT SEEND.**—The mineral treasures recently discovered at Seend, Wilts, exist to a far greater extent than was at first anticipated. The whole of the village is situated on an outcrop of the lower green sand, and it appears that the greater portion of this stratum consists of a ferruginous sandstone, more or less rich in peroxide of iron, yielding in some cases as much as 50 per cent. of pure metal. A gentleman largely engaged in the iron ore trade, has already extracted 4,000 tons of ore, which have been sent into Wales for smelting. There is not the slightest symptom of the existence of coal in the iron fields at Seend.

**SUPPORT OF FREE LIBRARIES BY THE WORKING CLASSES.**—At Preston, the working classes are efficiently seconding the efforts of the Working Men's Committee there, to obtain 1,000*l.* from their own class. The whole of the hands employed in the cotton mills and other establishments are making collections among themselves. The spinners in one mill have unanimously agreed to give ten shillings each, by four weekly instalments of 2*s.* 6*d.* At another mill the spinners determined to outstrip their neighbours, and agreed to give ten shillings and sixpence each, to be paid as above. At a third establishment, seven of the moulderers promised 1*l.* each: five of them have paid already, and the other two have each repaid 15*s.* A young woman, a power-loom weaver, has given 17*s.* 4*d.* The contrast between such conduct as this and certain recent doings in the metropolis is rather humiliating to the latter.

**ROYAL INSTITUTE OF BRITISH ARCHITECTS.**—At the next ordinary meeting of the Institute, which will be held on Monday evening, the 12th of January, a paper, "On the Ruin of Heidelberg," will be read by Mr. E. T. Anson, Fellow. At the last meeting, held on the 15th December, the following gentlemen were elected:—Mr. John Billing, Mr. Henry Astley Darbishire, Mr. George Devey, and Mr. Samuel Struton Markham, as Fellows; and Mr. Alfred Porter, as Associate. Mr. Perrey exhibited some very elaborate wood carvings; and Mons. Desachy some specimens of his method of forming plaster casts of large dimensions, in which strength and very great lightness are combined. It consists in backing a thin layer of plaster with canvass, or other similar material, which gives great strength and toughness.

**LECTURE ON "THE ECONOMY OF THE WORKING CLASSES."**—At the Birmingham and Midland Institute, on Monday in last week, Mr. W. L. Sargent read a paper on this subject, founded on an elaborate work published in 1855, by M. Le Play. Mr. Sargent remarked that M. Le Play had furnished or suggested matter enough for twenty or thirty papers such as the one before them. He proposed to consider the relation existing between the working man and his employer in Europe generally. They were so accustomed to see the working classes amongst themselves employed by capitalists and paid wages, either by the day or by the piece, that they were apt to lose sight of the fact that the relation elsewhere was quite different. Agricultural labour was mainly treated of. Formerly the ordinary condition of a farmer in France, Spain, and Italy was that of a metayer, who was a working partner in the business. Then they had the more primitive relation of landowners, with peasants working for them on *corvée* (or labour given for land tenanted), which was the ordinary condition of the fertile parts of Russia, of Poland, and till lately of Hungary. Then, in the less fertile provinces in the north and west of Russia, there was another organization, namely, the *abrok* system, by which a seigneur gave up his land to a community in consideration of a rent, for which the whole community was liable, and which was payable by every individual member of that community, even after they had migrated to other towns. The lecturer next remarked upon the right assumed by men of appropriating land to themselves, and showed that the grand principle of the Mahomdians was that the land was the property of the Divine Being, and could not be allotted to individual men. But this principle was greatly modified in practice, and indeed society could scarcely exist without something like an assignment to individuals of property and land; for who would build a cottage, or lay out a garden, if he could not be secure of enjoying them. In England, and most Christian countries, the landowner had great control over his estate, and could sell or mortgage it; cultivate it himself, or let it to farmers; and turn out one tenant to put in another. If there were a different organization, a great obstacle would be thrown in the way of all progress. Some estimate should have been given to show the condition of the labourers under the different systems, but it was impossible to treat the whole subject in one paper, and he had chosen that portion of it which he thought most likely to provoke discussion. The thanks of the meeting were awarded to Mr. Sargent.

**STRIKE OF SHIPWRIGHTS ON THE WEAR.**—An anticipated strike of the Wear shipwrights has unfortunately taken place. The men had previously adopted a resolution, and sent notice to the masters, that, unless the proposed reduction in their wages from 6*s.* to 5*s.* per day was abandoned, they would strike work. Several of the masters gave way, but the great majority refused. The number of men on strike, added to those previously unemployed through dulness of trade, will amount to about 300. A meeting of a number of the shipbuilders has since been held at Bishopwearmouth, when it was resolved to adhere to the proposed reduction of wages. The shipbuilders, however, are said not to be unanimous on the subject.

**THE ANTIQUITIES DISCOVERED AT BATH.**—The *Bath Chronicle* enumerates the many Roman and other antiquities turned up from the soil on the site of the ancient city, even during the last twelve months, and regrets that there is no local society having for one of its objects the collection and preservation of just such remains. As it is, many valuable relics have passed away from the city, which, with timely interference and proper care, would have enriched the local museum.

**THE ARCHITECTURAL EXHIBITION.**—I quite agree with your remarks respecting the darkness of the Suffolk-street rooms, where the Architectural Exhibition is at present held. Do you not think that they ought to be kept open later than dusk, as many young men are unable to see the drawings except on lecture nights, which of course they cannot do when they go for the direct purpose of hearing a lecture?

G. S.

**OPENING OF NEW SAILORS' HOME AT SUNDERLAND.**—The new Sailors' Home at Sunderland has been opened. It is a fine building with a Flemish front, erected on the edge of the Town Moor, contiguous to the docks, and, including the purchase money of the site, has cost about 4,000*l.*; one-half of which has been raised by subscriptions from the inhabitants of the borough and neighbourhood. It contains accommodation for seventy seamen. The business of the shipping office is transacted in a portion of the building.

**FALL OF A BUILDING IN HOLME.**—The roof and the upper walls of a two-story building at the lower end of Blake-street, Holme, gave way and fell on Wednesday in last week. Surrounding an open yard are three buildings, the lower story of each of which is occupied by butchers as slaughter-houses. One of these buildings, from 16 to 18 yards in length, had one of its side walls only 4*ft.* thick, and the accumulated snow, which had fallen heavily during the evening, broke in the roof and forced out the walls. There was a dancing party in an adjoining building, and the vibration caused may have contributed to the downfall. The building belongs to the King's Head Building Society, Salford, and is said to be a fair specimen of "Jerry work."

**LECTURE ON ARCHITECTURE AT ALNWICK.**—On the 17th December, in the Town-hall, Mr. F. R. Wilson, Associate of the Royal Institute of British Architects, now superintending the works at Alnwick Castle, delivered a lecture to the members of the Alnwick Scientific and Mechanics' Institute, on English Gothic Architecture, its historical associations, origin, successive periods, decline, and contemporary revival. The hall was completely filled, and the Rev. R. W. Bosanquet, one of the vice-presidents of the Institute, was in the chair.

**CONSECRATION OF ST. MATTHEW'S CHURCH, ST. PANCRAS.**—On the 22nd ult. the consecration of another church in this densely-populated district took place. The site for this church was a gift of the Duke of Bedford, to whom the property in the neighbourhood belongs, and who also contributed 750*l.* towards the building, and 250*l.* more on condition that the edifice was provided with a spire. The duke has also contributed 1,000*l.* a year, for ten years, towards the Diocesan Church-building Society, out of which sum that society have this year contributed 400*l.* towards the building, and 600*l.* more on loan. The edifice is in the style of the more florid period of Gothic architecture. The estimated cost was 7,600*l.* with extras, about 9,000*l.* The work has been done under the superintendence, and from the design, of Mr. John Johnstone, of Adelphi, architect. The windows are of green glass, surmounted by florid borders. One of the principal stained glass windows in the east aisle was a memorial present from General Sir Henry Brown, K.C.B. The number of seats is 1,240, upwards of 350, or nearly half, free. A bronze medallion, commemorative of the opening, has been executed by Mr. Wyon, medallist to the Mint.

**CONSECRATION OF ST. PAUL'S CHURCH, WALWORTH.**—This church, which was mostly erected about three years since, is now completed, and was consecrated on Christmas-day. The church stands in the centre of Lorrimer-square. It is built of Kentish rag, in the Early English style of thirteenth century. It consists of nave, chancel, and north and south aisles, and is 77 feet in length, and 52 feet in height to the centre of the roof, which is gabled with oak; the width, including the aisles, being 62 feet 3 inches. The vestry robing-room is situate on the south-east side of the chancel, which is 26 feet long and 44 feet high. The organ is placed in a recess on the north side of the chancel, about 4 feet from the ground. There are two galleries, one over either aisle, but the light from the western window will be left free. There are sittings for 1,204 persons, 602 free. The seats are open varnished oak. The church is warmed and ventilated by Messrs. Stevens' gas apparatus, erected by Messrs. Deane and Dray, of London-bridge; and lighted by gas standards, erected by Messrs. Debaufre and Co. of Creed-lane. Messrs. Myers, of Belvedere-road, were the contractors; and Mr. H. Jarvis, of Southwark, the architect. The contract for the erection of the edifice amounted to 6,000*l.*

**ACCIDENT AT THE NEW CORN EXCHANGE, CHELMSFORD.**—Last week an accident occurred at the New Corn Exchange, but fortunately none of the workmen were injured. It appears that the last of the seven iron girders which are to support the roof was being hoisted by means of a windlass, when the rope broke, and the immense weight of iron fell to the floor, shattering the bolts, which were about two inches thick, and injuring one of the piers.

**NEW MANSION IN SOMERSET.**—The Right Hon. H. Labouchere, Colonial Secretary, is about to erect a new family mansion on his property at Stowey, Somerset. The contract has been already taken by a London firm, and amounts to about 16,000*l.* The works are to be proceeded with immediately.







**ARCHITECTS, BUILDERS, ENGINEERS, AND SURVEYORS, CAN BE IMMEDIATELY SUPPLIED WITH COMPETENT ASSISTANTS** (temporary or otherwise). Those only recommended whose efficiency and character would be guaranteed. The office is open to employers, or those furnished therefrom (free), on application to Mr. RICHARDS, Engineer and Surveyor, 4, Trafalgar-square.

**ARTICLED PUPIL.**—An Engineer and Surveyor, of considerable experience in railways and waterworks, and now holding the appointment of Inspector of Works in the City of London, is desirous to receive an intelligent YOUTH into his office. As the practice is considerably extended, the pupil would be enabled to acquire a knowledge of learning his profession thoroughly, and a first-class introduction to permanent employment. Premium required.—Address, G. B. Postoffice, Strand, Essex.

**THERE IS A VACANCY FOR THREE PUPILS IN THE EVENING CLASSES OF THE ARCHITECTS, BUILDERS, CIVIL ENGINEERS, AND MECHANICS DRAWING CLASSES.** Terms, One Guinea per quarter. For detailed prospectuses of the Classes, apply to Mr. T. J. HILL, Architect, at the Offices, 25, Old Street, City-road. The Classes RE-OPEN on MONDAY 5th of JANUARY.

**TO CLERKS OF WORKS.**—WANTED immediately, a CLERK OF WORKS, to superintend the erection of a Country Manse. A good knowledge of joinery and carpentry required. Apply, by letter, stating terms, and amount of salary required, to A. B. No. 1, Thames Inn, Holborn.

**TO MASTER MARBLE-MASONS, &c.**—WANTED, a Practical Man, as FOREMAN or PARTNER, of twenty years' experience in the quality of marble and granite, capable of recommending a large number of hands to the best advantage for the working a marble factory.—Apply, by letter, to F. K. Office of "The Builder."

**WANTED, a MANAGING CLERK, in a BUILDERS' OFFICE.** One who could look after buildings and the general business in the principal's absence. He will be required to be a good penman, write specifications, make out detailed estimates, keep the books of the office, and make himself generally useful. A Protestant preferred. State the age. Apply to JOSEPH MADDY, Post-office, Salisbury.

**WANTED IMMEDIATELY, a middle aged married Man, as CLERK, who possesses a thorough knowledge and is conversant with all the details of the business of a building office; he must also be a good draughtsman. A residence will be provided, and should the party suit, the situation would be permanent.—Apply, by letter, stating terms, with references, and where last employed, to E. B. Mr. May's, Townsley Court Office, Tauxton.**

**WANTED, a respectable Person, accustomed to superintend BUILDING AND REPAIRS.** He will be required to be a good penman, write specifications, make out specifications of repairs. Salary, 1500. per annum. Address to A. B. at Mr. Beck's, St. Chaspeide.

**WANTED, in a Surveyor's Office, a WRITING CLERK.** He must be able to write expeditiously, and with great accuracy, the copy of the surveyor's handwriting, and the amount of salary required, to be sent to A. B. at Mr. Warren's, 45, High Holborn.

**WANTED, a CLERK, in a BUILDERS' OFFICE, in the country.** Address, by letter only, stating age, salary, and where last employed, to C. DAVIDSON, 25, Bechill, Surrey.

**WANTED IMMEDIATELY, in a Builder's Office, a CLERK, who must be conversant with the usual office duties.—Apply, by letter only, stating age, experience, and salary required, to A. B. Adelaide-road, Havercot-hill.**

**TO BUILDERS AND OTHERS.**—WANTED, a SITUATION, as CLERK or otherwise, by a good Draughtsman, Colourist, and Penman. Testimonials for the last six years. Security given if required. Address, J. N. B. No. 6, Portland-place South, Clapham-road.

**TO STONE AND RED POTTERS.**—WANTED, by a Practical Man, a SITUATION, either to make or burn red ware or stone ware, having had twenty years' experience in both branches alternately.—Address, F. G. No. 1, Hanover-square, Clapham-road, Kensington.

**WANTED, by the Advertiser, a SITUATION, to do the general REPAIRS on an ESTATE, and COLLECT the RENTS, if required. A satisfactory residence will be given for leaving the present office. The advertiser understands drawing, &c. Security will be given, if required.—Address, A. B. W. Gibb's, 25, Brunswick-place, City-road, Hoxton (N.).**

**TO CIVIL ENGINEERS, BUILDERS, &c.**—WANTED, by a thorough Practical Man, an ENGAGEMENT as FOREMAN or BRICKLAYERS, having had ten years' experience in the last two and half years, on an eminent engineer for the last two and half years. Can give levels. First-rate testimonials.—Address, post-paid, 70, Ganton street, Clerkenwell, London.

**MECHANICAL DRAUGHTSMAN.**—WANTED, an Active Young Man, to undertake the Superintendence of the Detail and Construction of Iron Roofs, Buildings, &c. He must be a good draughtsman, and careful of finishing details and estimates, or general work connected with Iron structures.—Apply by letter, stating capabilities, to Messrs TUPPER and CARL, 4, Mansion-house-place, London.

**TO BUILDERS CONTRACTORS, TIMBER MERCHANTS, &c.**—WANTED, by a young married Man, who has had ten years' experience in the Joinery and Building line, an ENGAGEMENT, as TIMBERKEEPER, COLLECTOR, UNDER FOREMAN, in any of the counties of England and Wales. Unexceptionable references can be produced. For terms, apply to A. Z. Z. Street, London, Kent-road.

**TO PLUMBERS AND BUILDERS.**—WANTED, by a stout, active Young Man, aged 19, a SITUATION as IMPROVER in the PLUMBING line, such as painting and glazing. Wages not an object.—Address, J. S. 23, Great Titchfield-street, Marylebone.

**WANTED, a SITUATION.**—The Advertiser has had 23 years' experience in the Quarrying and Building departments, and the making of Estimates. He wishes an ENGAGEMENT in any of the counties of England and Wales. Unexceptionable references can be produced. For terms, apply to A. Z. Z. Street, London, Kent-road.

**WANTED, a SITUATION, as CLERK OF WORKS, in a Building Office.** One who could look after buildings and the general business in the principal's absence. He will be required to be a good penman, write specifications, make out detailed estimates, keep the books of the office, and make himself generally useful. A Protestant preferred. State the age. Apply to JOSEPH MADDY, Post-office, Salisbury.

**TO PLUMBERS, BUILDERS, AND OTHERS.**—WANTED, a SITUATION as PLUMBER, ZINC-WORKER, GLAZIER, and PAINTER.—Apply to B. D. 32, Walmer-place, Brighthelmston, Sussex.

**TO BUILDERS AND PLUMBERS.**—WANTED, by a Young Man, EMPLOYMENT as PLUMBER, to all up to the required.—Address, H. BLACKMORE, 23, Northampton-road, Clerkenwell.

**TO ENGINEERS, WHITESMITHS, AND GAS-FITTERS.**—WANTED, to APPRENTICE an active, intelligent LAD, who has some knowledge of the business.—Address, W. G. Post-office, Great Cornam-street.

**WANTED, a SITUATION as WORKING FOREMAN, by a thorough practical Joiner, &c.** Fully competent to carry out first-class work. Can well be recommended by several architects of London.—Address, J. H. No. 2, Great-street, Clarendon-square. No objection to the country.

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**TO ARCHITECTS AND BUILDERS.**—THE Advertiser, a person fully qualified to make working drawings, and drawings in perspective, offers his SERVICES, temporarily or otherwise, to an Architect or Builder, preparing plans for competition on modern or antique designs.—Address, A. B. at Mr. Heath's, 17, St. Martin's Lane-road.

**TO ARCHITECTS, SURVEYORS, AND BUILDERS.**—THE Advertiser, who is thoroughly qualified to get up fair working, detail, and other drawings, and materially assist in taking out quantities, measuring up works, &c. for a SITUATION.—Address, L. M. J. Mr. How's, 35, Alfred-road, Harrow-road.

**EVENING EMPLOYMENT.**—TO TRADESMEN, &c.—WANTED, by a Young Man, an experienced book-keeper, and at leisure during the evening, an ENGAGEMENT as book-keeper, or other employment. Accustomed to measured accounts, &c.—Address, W. H. Post-office, Great Ru-sell-street, Covent-garden.

**TO ARCHITECTS AND SURVEYORS.**—A YOUNG MAN is desirous of obtaining a SITUATION in an Architect's or Surveyor's office. He has been in the service of the above for nearly three years, and is well acquainted with the various branches of surveying, &c.; also a neat draughtsman.—Address, N. A. at Mr. Heath's, 17, St. Martin's Lane-road.

**TO PLUMBERS, GLAZIERS, PAINTERS, AND PAPER-HANGERS.**—A STEADY and experienced Workman, aged 28, is desirous of obtaining a SITUATION. Can also write and grain tolerably, and is an expert glass-cutter. Would take the entire management of the above branches for a builder. First-rate reference as to character and ability. Terms moderate.—Apply to Mr. J. C. Caldwell's, in Great May's-buildings, St. Martin's-lane, London.

**TO BUILDERS, &c.**—AS GENERAL FOREMAN, Foreman of a large Job, or Foreman of Carpenters.—An experienced Foreman, with useful practical testimonials. Is open for an ENGAGEMENT.—Address, J. F. 20, Edith-street, Great Cambridge-street, Hackney-road.

**A YOUNG ARCHITECT, whose time is not wholly occupied, and who thoroughly understands the practical part of his profession, as well as being a good draughtsman, offers to PREPARE, in his own residence, WORKING or FINISHED DRAWINGS for architects.—Address, A. J. Adelpi-chambers, 6, John-street, Strand.**

**TO PLUMBERS AND BUILDERS.**—A YOUNG MAN wishes for a SITUATION as PLUMBER, &c. of the above.—Address, J. F. A. B. No. 4, Northampton-place, Holloway, Islington.

**AN experienced Man, with a practical knowledge of building, a CARPENTER and JOINER, is open to an ENGAGEMENT as CLERK OF WORKS, GENERAL FOREMAN, or in any of the above.—Address, G. M. 1, Fosbury-place, Vauxhall-bridge-road, London.**

**TO CARPENTERS AND JOINERS.**—A YOUNG MAN, of steady habits, who undertakes his business, and who has just left a respectable firm, near town, WANTED, by a respectable firm, 8, Shoe Warehouse, 1, Queen's Head-row, Newington, Surrey.

**TO BUILDERS, PAINTERS, &c.**—A YOUNG MAN, who has served five years to the PLUMBING, PAINTING, and GLAZING, is desirous of obtaining a SITUATION as an IMPROVER.—Address, by letter, stating terms, &c. to F. 7, Blizard-place, Fulham-road, Brentford.

**AS CARMAN, or in any other capacity, to a Builder, a respectable man, aged 48.—Direct to H. H. 27, Collingwood-street, Blackfriars-road.**

**TO BUILDERS, CONTRACTORS, &c.**—A YOUNG MAN, who thoroughly understands his business, is willing to take PAINTING, DISTEMPERING, GLAZING, &c. piecework or otherwise. No objection to take low wages for permanent situation.—Address, A. B. No. 10, Barred-street, Finsbury, London.

**TO ARCHITECTS.**—AN experienced, practical CLERK OF WORKS is desirous of a RE-ENGAGEMENT, in town or country.—Address, G. F. 23, Lower Sloane-street, Chelsea.

**A PRACTICAL LAND SURVEYOR and LEVELLER, and a good DRAUGHTSMAN, thoroughly conversant with parish, town, and railway surveying, &c. and who can be highly recommended, wishes a RE-ENGAGEMENT, at home or on the continent. Salary a reasonable consideration.—Address, E. T. Post-office, Strand, London.**

**TO ARCHITECTS.**—A PRACTICAL CLERK OF WORKS is desirous of a RE-ENGAGEMENT, either in town or country. Has had the management of extensive public and private works. Unexceptionable references.—Address, B. H. K. Office of "The Builder."

**AFTER CHRISTMAS, a Young Man, 33 years of age, who has had ten years' experience in the Joinery and Building line, is desirous of meeting with EMPLOYMENT, either temporary or permanent, in making up trade-measures, &c. or other in a small or large way of business.—Address, V. G. G. Office of "The Builder."**

**TO WATERWORKS AND SEWERAGE ENGINEERS.**—AN ASSISTANT, aged 32, wants a RE-ENGAGEMENT, either to get out contract or other, or to superintend the construction of sewers in a large provincial town, as he is experienced in erecting pumping and other engines, and understands machinery well. Has good testimonials.—Address, A. M. Z. Davies's Newspaper Office, Edgeware-road.

**TO BUILDERS.**—A BUILDER'S ACCOUNTANT, of Twenty years' experience, also an efficient Measurer, Estimator, Quantity Surveyor, offers TEMPORARY ASSISTANCE, to BUILDERS, upon reasonable terms. References given.—Address, Mr. WILLIS, Office of "The Builder."

**TO BUILDERS AND OTHERS.**—A HIGHLY RESPECTABLE, middle-aged Gentleman, accustomed to the routine of a counting-house or builder's office, an efficient penman, and a good calculator, wishes for EMPLOYMENT in any capacity where the above qualifications, added to steadiness and integrity, are deemed desirable. Accounts in arrears made up on very low terms. The most satisfactory references can be given.—Address, S. V. T. X. Office of "The Builder."

**AN ARCHITECT and SURVEYOR in practice in the City, OFFERS his SERVICES to Noblemen, Estates Owners, and Capitalists, in all matters relating to the Management of Estates, &c. whether for Building purposes or otherwise. Also to gentlemen, members of land and building societies, and others contemplating building alterations, or repairs, to whom every kind of assistance and advice is afforded. Solicitors also, will find this a ready means of having plans prepared for, and put on, skids and documents, and other professional assistance; and architects, surveyors, builders, estate agents, and the profession generally, in the preparation of designs, working drawings, specifications, and superintendence. Also surveys of estates, parishes, &c. and other kinds of assistance. Every commission executed with integrity and dispatch, and all transactions strictly confidential. Remuneration upon the most moderate scale.—Address ARCHITECT, 15, New Rooms, 154, Leadenhall-street. A prospectus will be forwarded upon application, and the receipt of three stamps.**

**PARTNERSHIP WANTED, for the Business of a Plumber, House Decorator, Gasfitter, and House Repairs in General; one in either branch of the building would be preferred.—Address to M. B. 14, Weston-place, King's-road.**

**NOW OPEN.**—The Fourth Annual Exhibition of the Photographic Society, at the Gallery, 5, Pall Mall East.—Admission, in the Morning, One Shilling; in the Evening, Sixpence.

**CRYSTAL PALACE.**—LECTURES on the EXTINGUISHING OF THE ANTEHUMAN WORLD. Illustrated diagrams and models will be delivered by R. WATERHOUSE HAWKINS, Esq. F.R.S. F.L.S., restorer of the extinct animals in the Crystal Palace Park, in the New Cornmarket, on FRIDAY, 10th and 17th, and WEDNESDAY, 14th, 21st, and 28th JANUARY, 1857. The Lectures will commence at ONE o'clock precisely.

**ROYAL POLYTECHNIC.**—Patron, R. H. Prince Albert.—This Institution has for eighteen years continued to instruct and amuse the public. The following Lectures at Entertainment provided this year are on the liberal scale.—1st. Entire New Lecture, by J. H. Pepper, Esq. "On Optical Illusions." Illustrated with all the apparatus for which this Institution is so justly celebrated, every Tuesday and Friday.—2nd. "The Lecture—Surroundings of the Human Eye." "On Fireworks," every Wednesday, at a Quarter-past Four and Quarter-past Nine, with illuminated illustrations by Mr. Darby; and in the evening, exhibition of "The Belshazzar Feast," illustrating in magnificent fireworks the portraits of her Majesty, Prince and the Royal Family.—3rd. Exhibition of the new scenic movement, with novel machinery invented by Mr. Freeman, who will illustrate his new system with the drama of "The Knight and the Knight and the Wood Dwarf," accompanied with the original music by the Misses Gordon, and the Mechanical Musical Theatre, displaying every scenic movement, with novel machinery invented by Mr. Freeman, who will illustrate his new system with the drama of "The Knight and the Knight and the Wood Dwarf," accompanied with the original music by the Misses Gordon, and the Mechanical Musical Theatre, displaying every scenic movement, with novel machinery invented by Mr. Freeman, who will illustrate his new system with the drama of "The Knight and the Knight and the Wood Dwarf," accompanied with the original music by the Misses Gordon, and the Mechanical Musical Theatre, displaying every scenic movement, with novel machinery invented by Mr. Freeman, who will illustrate his new system with the drama of "The Knight and the Knight and the 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# The Builder.

VOL. XV.—No. 727.



**N**OVELTY of effect is so far the aim marked in the designs in the Architectural Exhibition, that any one judging from the collection in Suffolk-street, could hardly endorse the old complaint against modern architects—that they are wanting in invention. The general character of our street and suburban architecture, however—in forming which, as we have always been at pains to state, architects have less opportunity of influence than they should have—may tend to keep alive an imputation of the kind referred to, as made by the public. True, it may be allowed that—as we have also urged at every convenient opportunity—even in buildings from the designs of professed architects, mere style too frequently is offered in place of, or becomes more prominent than, that *art* which, capable of being expressed through every language of style, is ever the requisite and proper object of effort. Such effect upon the public as may be produced simply by a change of style, is really unworthy of artists, and is prejudicial as to all its ultimate consequences.

However, in the Architectural Exhibition, the growth of a different species of novelty—through the treatment of form and the frequent introduction of colour—is generally manifest. Indeed, we have some apprehension lest this sort of tendency, even, should run to excess. Observation and study of old models should never be neglected,—for, in many of these the best effects of architectural art have been produced; and the objects of such art—in delighting the intellect and the sense—require in the work, not merely the evidence that there has been a certain mental action of design, but also the presence of *beautiful* features,—which last—acting through natural emotions and perceptions—may be limited in available number, or may depend upon the principles sometimes said to be the same in all styles. Novelty, therefore, though essentially requisite, is but one aim, and perhaps not the highest; and however we view it, every disadvantage to art is encountered in neglecting what may be derived from study of the best models,—or by recommending a course in which principles which it has taken time to certify, being unwittingly lost, will have to be painfully wrought out afresh. That this apprehension of the tendency—when novelty prevails, weakly allied with the other elements of good art—is no unwarrantable apprehension, we think is shown by that which is still the condition of ornamental and decorative art,—in which the great variety of patterns, and the constant demand for novelty, become subversive of principles, and destructive of the real effect upon the intellect and taste where principles are observed. We have noticed many instances in the present exhibition, where only from the desire in itself commendable, of doing something in a different way, a positive ugliness is produced,—such as the principles which were understood—and perhaps even on other occasions advocated by the architect in question—should have prevented. We may refer to the curves struck from different centres, in the pediments above some of the windows in Mr. Huggins's drawing, amongst the designs for the Liverpool Museum. We, however, referred to innovations of a more general character; that is to say, we hold that the

accustomed details of styles, for which reason can be given, should not be departed from in principle, unless reason equally satisfactory other than the regard for novelty, can be furnished for the change. Thus, when in the New Corn-Exchange and Public Rooms, Chelmsford,—shown in a view (25) by the architect, Mr. F. Chancellor,—we find mouldings which belong to the archivolt, carried horizontally, instead of their usual arrangement, springing from the impost, we anticipate that in the building, whilst the curve of the arch must be impaired in effect, there is no adequate gain. In the same drawing the columns to the windows appear recessed, so as to be flush with the reveal and the front; but whatever may be the method adopted with Gothic shafts, the analogy with them is not complete, and the defect of the innovation is very striking.

Mr. J. K. Colling, in his design for Merchants' Offices, now erecting in Old Hall-street, Liverpool (53—98), a work still commendable in its design, has one or two of what we must consider like defects,—as in the form given to the heads of the principal range of windows, and in the stepping-up of the coupled columns, which there are in an effective cortile, or passage-way, from which the staircases ascend, one on each side. In the exterior, red brick and s'one, with granite and coloured marbles, are used; but the drawing conveys a somewhat unfavourable representation of their effect, from the unnatural brilliancy of colour given to some of those materials,—an error observable in many other drawings in the exhibition, and which should be avoided in future. The ornament, which is in itself exceedingly well designed, is somewhat in excess. The same gentleman has also a well-executed sketch of his "Second Design for new Church at Hooton-park, Cheshire" (244 A). "Ashwicke Hall, near Marshfield, Gloucestershire, now erecting" (409), by the same architect, is in the style of Windsor Castle.—Mr. J. M. Lockyer exhibits "House in course of erection in Henrietta-street, Cavendish-square" (55), where he adopts red and black bricks in patterns, terra-cotta, cement, and panels of encaustic tiles, as materials, but with inferior effect to that which, spite of the constant difficulty of a shop front, he has produced in the "Premises erected 1854, for Messrs. Heal and Son, Tottenham court-road" (119). No. 317 is the "Monument erected at Kirkby Mallory, Leicestershire, in memory of the late Countess of Lovelace," designed by the same architect. Mr. Wyatt Papworth exhibits (58) "Façade to the Hall of a City Company," designed in accordance with the details of a building at Venice. The work is profusely ornamented in the style of the Renaissance, the details being not in all cases such as should be copied; the design, however, has greater merit than is immediately seen in the unobtrusive drawing. A mere elevation, as expressing only part of a design, fails to do any architect justice. A "Design for a Steeple and ornamental Casing to the present Brick Church on Clapham-common" (377), in the Italian style, is exhibited by Mr. John W. Papworth.—Mr. E. B. Lamb has several works, all having the merit of *character*, though with a slight tendency towards heaviness in details. His church now erecting at Castle Douglas (59), and that about to be erected at Egham (60), have effect with simplicity; and a like feeling is displayed in the drawing of Thornham Hall, Eye, now erecting for Lord Henniker (102)—in a modern Elizabethan style—which has a good clock and bell tower, and where there are a few novelties of detail, as in the use of wooden mullioned window-frames in the upper half only of the window, in the case of the principal rooms. The same architect exhibits "Sanatorium and Chapel now erecting at Bournemouth" (120), and "Town-hall and

Corn Exchange now erecting at Eye, Suffolk" (133). The latter is noticeable for the treatment of its red and white brickwork in courses, with flints in diagonal patterns, for the plan, and the design of its tower and entrance.

Mr. T. L. Donaldson's "Design for a Temple to Victory, according to the ancient usages, combining all the edifices connected with the sacred games, &c. supposed to be erected on Mount Ithome, Messene, in the Peloponnus, at the time of Hadrian" (65 and 66), embodies the results of elaborate study, and will be doubly interesting to those who heard his lecture, on Tuesday, noticed in a subsequent page.

The "Carpet Warehouse" at Kidderminster, by Mr. J. G. Bland (69), illustrates several observations which we have made as to prevalent characteristics of architectural design, meritorious and the reverse. The design here is expressed in coloured brickwork—chiefly red—but with white and dove-coloured bricks in the arches—and by cornice and strings of notched and angular bricks, and broad bands or fascias of chequers. The ornamented mouldings of Norman architecture appear to have furnished many suggestions for designs of this character, as it is supposed they did also for the old Tudor brickwork. Further, respecting designs of which No. 69 may be an example—we have apprehended before, that dark or brilliant colour and strong contrasts were becoming attended to, to the exclusion of the beauty of light and shade, and form; and that singularities of detail were being proffered to breadth and grouping. The last word—grouping—we use very often, because the element of effect that it represents is one which is indispensable in good architecture, and one which has been long neglected; and because the direction of architectural studies often, as now, tends to the search after curious details, without reference to their combination, and even with neglect of the elements in architectural effect comprised in proportion of divisions and subdivisions, and in outline and mass. Mr. Philip Brauon, who exhibits "Designs for Brickwork on *Æsthetic Principles*" (162, 163, 164, and 293), in an effort which is praiseworthy, has not escaped the fault alluded to, of exalting certain good principles at the expense of others, and thereby failing to see the laboured ugliness of many of his details, such as the wooden barge-boards, and the heavy finials. It is no easy matter to design good brickwork, though many think otherwise; the work must be well bonded, therefore the place of every brick will have to be considered,—though it does not follow that every brick should show. And in the estimate of architectural effect, there being several elements of importance; where certain of them are deficient, we are not necessarily satisfied with the substitution of such forms as can be expressed by the regular sizes of bricks, or even with the knowledge that if we have not projection in a cornice, or well-proportioned mouldings, we have good construction. How far by introducing stone, projection may be got, and how far artificial stone may serve as material for ornament, will require careful consideration: it is clear if such materials attain any prominence, the design is no longer what was intended—a characteristic example of architecture produced in the regular forms of bricks; it reverts to a brick and stone building, and as such will demand the ordinary groups of mouldings and carved enrichments. Mr. Charles Gray's designs are less to be considered as efforts in "ornamental brickwork" than as general combinations of stone, cement, tiles, and brickwork,—in which, however, whilst each material is used generally in its fitting place, and good projection is obtained, the properties of no one material strike the attention



as forming the proper key-note, and therefore narrowing the scope of the design in proportion and ornament. Mr. Gray, however, we think fails in another element of his required effect, by want of sufficient attention to grouping of divisions, and to the proportions of his openings. Still, in the "Corner-house in course of re-erection, 22, Henrietta-street, Covent-garden" (116), there is as usual something to interest the observer,—that which there is not in too many of the common street elevations.

In the "House now erecting for the Hon. W. H. Yelverton," in South Wales, by Henry E. Coe (76), half-timbered work is used: the building has a square central tower, with lofty roof, and has considerable effect.—No. 77 is the "Front Elevation of Messrs. Wheeler's Premises," in the Poultry, by Mr. T. Burton. It is spoiled by the evident want of room for the full semicircle which ought to have been the form of the arch to the central opening in the first-floor,—but has a good lower story, in which the two doorways and the general treatment of the shop-front, with the windows over it, nearly prevent any appearance of weakness. This unstructural character, referred to as observable in most designs where shops are introduced, quite destroys the satisfaction which would be derived, in the case of the "Retail Shops for S. Hyam and Co. New-street, Birmingham," J. J. Bateman (146). There, the basement is a mere sheet of glass; and with such a starting point as a condition, it is difficult to say what an architect could do. It should be noticed, however, that the requirement of apparent support is increased by the very attention drawn to the necessity for support, by the columns and the bold trusses,—which latter carry a wide balcony. Above this balcony is an attic and a lofty roof with dormers. With a good basement, the design would have been one of much merit. No. 154, "The Scottish Equitable Life Assurance Offices," in the Poultry, by Mr. J. W. Penfold, has shafts to the arches and panels to the pilasters of polished Peterhead granite. The requirement of ample light appears to have dictated another design from the same hand as No. 77, "For a Warehouse in Wood-street" (200), which seems all window opening, and as though it would require to be entirely of iron. There is, however, some effect of grouping as well as ornament, small as is the wall-space. Greater strength in the angles would, however, have improved the effect.

Mr. G. Aitchison, jun. in the "Drawing of a Bank, to be erected in London" (159), shows a building of red brick, with a great semi-circular headed arch, to the height of two lower stories, and to the upper stories smaller arches, filled in with Gothic work. The rainwater pipes, which appear very bulky, are combined with the mouldings, as in Mr. P. Anson's Colonial Life Assurance Office, in Lombard-street (as noticed by us some time back), of which also a drawing is exhibited (415).

Illustration of many questions adverted to above would be afforded in looking at Mr. J. H. Chamberlain's "Business Premises now in course of erection, Union-street, Birmingham" (143), the style of which may be called Italian Gothic, and in which coloured materials are used. The lower story for the shop, in this case, has two segmental-headed windows, which not only spoil the doorway, but suggest structural weakness in the angle piers.—The Gothic style for buildings adapted to business purposes, is also shown applied in the "Banking Premises of Messrs. Seale, Low, and Co. Leicester-square" (81), by Mr. J. Billing.

Amongst the churches, we should mention a design by Mr. H. J. Paull, in brick and stone (78), which, with little modification of the tower and its termination, would be successful; also a "Mortuary Chapel, now erecting in Portugal" (82), M. D. Wyatt, in which, whilst the archi-

teet gives to his design a general Gothic character, he shows the masonry in large blocks, even omitting the ordinary small arch stones. Also should be named Mr. T. E. Knightley's "Trinity Presbyterian Church, De Beauvoir Town" (113), remarkable for very narrow aisles; and the same architect's several designs for "Cemetery Buildings" (108 and 130), which have much merit. An "Interior View of St. Michael's Church, Cornhill," by Alfred Bell (132 A), shows the refitting and decoration, designed by Mr. G. G. Scott, in conjunction with Mr. W. A. Mason, by which the late Italian architecture is converted into the Byzantine, by the introduction of shafts and sub-arches to the aisle windows, and similar forms *rayonnans* to the circular windows, and by the character of the coloured decoration. The problem in such a case, it should be observed, is a difficult one. The new porch, of which a drawing (245) is exhibited by Mr. J. D. Wyatt, as being executed from the designs of the same gentleman, is in the Italian Gothic style, with the arch members below a gable, springing from red marble or granite shafts, on pedestals. By the same hand, is also "Anstey Church, Warwickshire" (406), showing the steeple, from Mr. Scott's design, lately erected in memory of Major-General Adams, who fell at Inkermann.

In the "Design for the Restoration of St. Daniel's Church, Hawarden" (156), R. P. Pullan, some good decorative work, including a pulpit, is shown. "St. Luke's Church, Nutford-place," by Mr. E. Christian, illustrated in our pages, is represented in a transverse section (257), which serves to explain the peculiar difficulty, both as to plan and levels, in that work; and the graphic sketches of "Tylehurst Church, Berks" (256), by Mr. G. E. Street, show its author's skill in the forms and expression of mediæval architecture. After looking at such drawings, and those from the Lille Competition, it is wonderful how in the same day could be designed and built the "Church, now being erected at Old Ford," at a cost of 5,000*l.* (155), with details intended as Early English, a low-pitched roof, two western towers, and stunted spires, or lanterns. Moreover, when classical

architecture is attempted, as in a "Design for New Synagogue, Birmingham" (244) with a bad portico of Grecian Doric columns, equally singular is it, that the especial character of the style and its scope and effect should be so lamentably missed. Commonplace also are more of the designs with Italian window-dressings than we care to notice. There is, however, a good interior of the "Entrance Saloon, at Bylaugh-hall, Norfolk," by Messrs. Banks and Barry (165), which has the centre and the arcades lighted from the top through coffers, and is tastefully decorated. Other drawings illustrative of interior decoration, with the competition drawings, and, perhaps, some other works, we may find room for in another number. The most prominent drawing of the exhibition, however, is one which we have left to almost the end of our notice,—namely, Mr. Owen Jones's large view (84) of his design for the interior of St. James's Hall, which we reduced in an engraving in the *Builder*,—of course without the polychromy and gold, which, while highly elaborate in application, are certainly most harmoniously used. The gold setting of the brilliant apse, with red and blue coloured ceiling with gold bands, and the blue and white ceiling of the body of the hall similarly banded, are certainly calculated to realize a very fine effect. The forms in the ornamentation are perhaps less elegant. Of Mr. Jones's "Design for the Exhibition Building of Manchester, submitted in competition, June 4, 1856" (111 and 112), we cannot speak with equal approval. It is simply a sort of wig-wam externally; and within it is a vault—indifferently lighted, we should think, from the end windows and the apertures in the crown—and with just so much design (except in the polychromy) as might be produced by the industrious turning in of semi-circles. Even granting the realization of a fine perspective effect, surely we have not here the work of Mr. Owen Jones, an *artist-architect*. And there is some point in what is so obvious in the drawing, that the usufruct of such a vault bears obviously no relation to its vastness. In the drawing, however, Mr. Jones shows his masterly hand.



THE LATE MR. JOHN BRITTON.

On Thursday, the first day of the new year, at ten o'clock in the morning, died John Britton, the author of "The Cathedral Antiquities of England," at his house in Burton-street, Burton-crescent, in his eighty-sixth year. On the 2nd of December, he sent a proof of the last completed sheet of his autobiography to the printer. Early on the following Thursday morning, he first felt a sensation in his throat indicating the coming of his old enemy, bronchitis. Medical assistance was sent for as soon as possible, and it was hoped that by this prompt treatment he might have been saved, as on many former occasions. This, however, was not to be, and gradually he succumbed to the universal conqueror.

Ten days before his death, he expressed his conviction to the writer of this notice that he should not recover, and desired him to convey his remembrances to the friends they were in the habit of meeting together, to separate from whom gave him the greatest pain.

The publication of the first part of Mr. Britton's Autobiography has made the particulars of his early life familiar to some of our readers; to many, however, they must be un-



## MEMORIALS OF JOHN BRITTON.

*House, Kington St. Michael.**Room in which Mr. Britton was born.**Wine Cellar, Jerusalem Tavern, Clerkenwell.*

quary), where his father was employed as baker, maltster, shopkeeper, and small farmer, but he sank into poverty, and his son John had not much of a school education. In his Autobiography, Mr. Britton says of his birthplace, "the inhabitants were undisciplined, illiterate, and deprived of all good example;" and again he observes, "I do not think there was a paper or magazine purchased by one of the inhabitants before the year 1780, when the London riots were talked about, and wondered at." His time from his thirteenth year to his sixteenth was spent either in assisting his parents or in play.

The cottages of the village were of the humblest and poorest kind, with walls of rough stone and roofs of thatch. The house in which he was born, which was one of the best of them, the outside being rough-cast and whitewashed, is represented in the accompanying engraving.

One room served, he tells us, "for kitchen and parlour and hall," and here is a view of it, the place of his birth. It was about 14 feet square by 6½ feet high,—the engraving makes it too lofty,—with a large beam beneath the ceiling. The floor was of stone.

In October, 1787, he was taken to London by his uncle, Samuel Hillier, who soon after apprenticed him for six years to Mr. Mendham, of the Jerusalem Tavern, Clerkenwell, where he was initiated into the mysteries of "forcing or fining wines, bottling, corking, and binning the same." He was wont to steal as much time as he could to visit old bookstalls and make small purchases; but all the reading he could indulge in during this term was by candle-light, in the cellar, and at occasional intervals only, not of leisure, but of time abstracted from systematic duties. This period embraced a series of depressing privations, with the additional sorrow of ill-health. The annexed engraving shows the place in which he spent ten or eleven hours a day for nearly six years. Ultimately, his master seeing no prospect of the restoration of his health, gave up about half a year of his service, and sent him into the world with two guineas in his pocket to shift for himself. During his apprenticeship he had become acquainted with Mr. Essex, father of the present painter in enamel, and it was in his shop, where books were to be found, that Britton first met Mr. E. W. Brayley, then working as an enameller. In a notice of this estimable and valuable man, published in the *Gentleman's Magazine* for December, 1854, Mr. Britton says,—“From this unpromising association, and from fortuitous circumstances, ultimately sprang up a crop of literary works which cannot fail to astonish the reader who calculates their amount in volumes, pages, variety of subject, extent of labour, in research, travel, ennoblement, and in manual writing. As may be reasonably supposed, they commenced in the most humble and unpropitious departments of literature. Our first partnership composition and speculation was a song called ‘The Powder Tax: or, a Pull at the Guinea Pigs,’ written by my young friend, and sung by me publicly at a spouting club, held at the Jacob’s Well, Barbican, where a crowded assemblage of smokers and tipplers met once a week to hear theatrical tyros, and even veterans, recite prologues, act scenes from plays, and sing songs. The new ditty was encored, for powdered hair and “pig-tails” were popular and fashionable. We were tempted to print copies of our ballad to give to friends and to sell at one penny each. A thousand copies were soon disposed of, and more than 70,000 were sold by a Mr. Evans, a noted song printer, in Long-lane, Smithfield, whose agents sang and hawked them about London streets for a long time. Thinking our literary property invaded and plundered, we threatened to prosecute the daring pirate, but he defied law and the two young authors.”

After leaving the Jerusalem Tavern, Britton was employed as cellarman at the London Tavern, and then as clerk to a Mrs. Lonsdale, carrying on business as a hop-merchant in Smithfield. His next engagement was with Mr. Simpson, an attorney, in Holborn-court, now South-square, Gray’s-inn, with whom he continued three years, with a salary of 15s. a week. He was now able to give time to reading at booksellers’ shops and stalls, and in the evenings

known, and serving to illustrate his character, and to show what, to use his own words, “may be effected by zeal and industry, with moderate talents, and without academic learning,” we shall briefly refer to them. Let us add to his own modest estimate of himself, that he had a singularly active and penetrating mind, extraordinary powers of arrangement and organization, an excellent memory, and a kind heart.

Mr. Britton was born on the 7th of July, 1771, at Kington St. Michael, in Wiltshire (the birthplace of John Aubrey, the Wiltshire anti-



frequent debating societies, where he attained a fluency of speech which never failed him. As a social speaker he never disappointed; and those who heard him the oftentimes were the most surprised at the constant variety in his happily-turned and well-rounded sentences.

On the death of Mr. Simpson, in 1798, he made an engagement with Messrs. Parker and Wix, solicitors, and then became a member of several debating clubs, and was led to recite the writings of Peter Pindar, George Colman, and others. In 1799 he was engaged by a Mr. Chapman, at three guineas per week, to write, recite, and sing for him, at a theatre in Panton-street, Haymarket. Chapman had assisted De Louthembourg in preparing and exhibiting his "Eidophusikon," which had proved very effective. The scenes and machinery were purchased by Chapman, to combine with other objects for an evening's entertainment. De Louthembourg was scene-painter to Covent-garden Theatre, and is well known by many interesting easel pictures. Being also a skilful and ingenious machinist, he invented several novelties for the scenic department of the theatre; and for the purpose of displaying his skill and ingenuity, he fitted up a small theatre in the street above mentioned, and conferring on it the name of the "Eidophusikon," he exhibited some exquisite paintings of scenery, both stationary and in motion, with the varied effects of sunshine and gloom; morn, mid-day, and night; thunder, lightning, rain, hail, and snow. Mr. W. H. Pyne, in "Wine and Walnuts," has given a graphic account of the exhibition. Britton now fell much amongst theatrical persons, and in his Autobiography he gives some curious anecdotes of this period.

It will be seen that, from the time of ending his apprenticeship to the year 1800, his career was involved in perplexity; he had neither fixed income nor occupation. His first literary essay was some observations on "Bachelorship," written whilst in the wine-cellar, and, one morning, dropped into the "letter-box of the Attic Miscellany," in Shoe-lane. This being printed, he was tempted to write comments on plays and players, with notices of free-and-easy and odd fellows' clubs. These appeared in the "Sporting Magazine," which was published by John Wheble, of Warwick-square, who became a kind friend to him, and was the cause of his being ultimately an author. A sixpenny pamphlet called "The Thespian Olio," with frontispiece, was the first attempt, and next appeared "The Odd Fellows' Song-Book," price 1s. with an engraved title-page. For Mr. John Fairburn, a print and bookseller in the Minories, he compiled several annual song-books, for the frontispieces of which the father of the present George Cruikshank made designs.

For the same publisher our author wrote a series of "Twelfth-Night Characters," and in 1799, ventured upon a volume on "The Life and Adventures of Pizarro," which extended to 150 octavo pages.

Mr. Wheble, before mentioned, had issued a prospectus for "The Beauties of Wiltshire," and persuaded Britton to undertake the work. Conscious of his own deficiencies he hesitated, but strengthened by Brayley, he accepted the commission, and together they made two walking tours, and endeavoured otherwise to prepare themselves for the task. In due time the "Beauties of Wiltshire" were completed in 2 vols. 8vo. (1801) to the satisfaction of the publishers; and at their invitation the joint authors immediately set to work on the "Beauties of Bedfordshire." Eventually the "Beauties" of all the other counties of England were published in 26 vols.; but only the first nine volumes were written by the original authors. Of the "Beauties of England and Wales," Mr. Britton says, in the notice of Brayley, before referred to:—"Mr. Brayley wrote the greater part of volumes one and two, whilst I travelled over parts of Bedfordshire, Berkshire, and Buckinghamshire for materials, and directed the whole of the embellishments and correspondence. The history of this once popular publication, which, though at first announced would be comprised in about six volumes, and finished in the space of three years, extended to no less than twenty-five large volumes, and was in progress of publication for nearly twenty years,

would involve a curious and rather lamentable exposition of 'The Quarrels of Authors,' and their dissensions with publishers, as well as certain caprices and foibles of the latter. My own personal share and miseries in this drama were often painful, always perplexing and oppressive, as well as replete with anxiety and solicitude. At length the authors separated, and engaged with the booksellers to undertake and be responsible for the writing of certain counties and volumes of the work." Hence Mr. Brayley agreed to produce the accounts of Hertfordshire, Huntingdonshire, and Kent for volumes seven and eight, whilst I wrote Lancashire, Leicestershire, and Lincolnshire for the ninth volume; also Norfolk, Northamptonshire, and Wiltshire. London and Middlesex were next assigned to my late partner, but he finished only one large volume and part of another, on London, when he was superseded by Mr. Nightringale, who was employed by the publishers to continue and complete the history of the metropolis."

In 1805, Mr. Britton showed Josiah Taylor, the architectural bookseller, some drawings of ancient buildings, which it was thought were not calculated for "The Beauties of England;" and after a little consultation and deliberation, it was agreed to publish a new quarto work, entitled "The Architectural Antiquities of Great Britain." A plan was digested, a prospectus was written, and Longman and Co. engaged to take a third share in the work, and be the publishers. Hence originated a publication, which not only extended to five quarto volumes, and brought before the public 360 engravings, representing a great variety of old buildings of the country, but many historical, descriptive, and critical essays. This work gave origin to a new school of artists, both draughtsmen and engravers, and to many competing and rival publications. It obtained great popularity, and was profitable both to the publishers and to the author.

The "Cathedral Antiquities of England," a magnificent work, was commenced in 1814 by the publication in a detached form of the "Antiquities of Salisbury Cathedral," and ultimately embraced a series of elaborate illustrations of the entire cathedrals of England. In its completed form the "Cathedral Antiquities" occupy 14 vols. fol. and 4to. 1814-35, with upwards of 300 highly-finished steel-engravings. The outlay upon it appears to have been 19,008*l*. The outlay on five volumes of "The Architectural Antiquities," was 17,092*l*. The outlay on "The Beauties of England and Wales," is stated at 50,000*l*.

The production of these works was carried on throughout under Mr. Britton's immediate superintendence, many of the artists working in his own house, and being trained to their task by himself; and the facility he thus acquired in the production of this class of publications led to the preparation of many other books of a similar kind. Among the illustrated works of which he was either author or editor may be named an "Historical Account of Corsham House," 1806; "The Fine Arts of the English School," 4to. 1812; "Historical Account of Redcliffe Church," 4to. 1813; "Illustrations of Fonthill Abbey," 1823; "Historical Account of Bath Abbey Church," 1825; the "Public Buildings of London, from Drawings by A. Pugin," 2 vols. royal 8vo. 1825-29; "Architectural Antiquities of Normandy, drawn by A. Pugin," 1825-27; "Picturesque Antiquities of English Cities," 4to. 1830; "A Dictionary of the Architecture and Archaeology of the Middle Ages," 4to. 1832-33; "A History, &c. of the Ancient Palaces and Houses of Parliament at Westminster," jointly with E. W. Brayley, 8vo. 1834-36; "Historical Account of Tordington, Gloucestershire," 1841; "Historical Notices of Windsor Castle," 1842; &c. &c. But besides these Mr. Britton has written on many subjects connected with general literature, either as distinct works, or as contributions to literary journals. In biography, he published, in 1845, a "Memoir of John Aubrey," and in 1848 an essay entitled "The Authorship of the Letters of Junius Elucidated, including a Biographical Memoir of Colonel Barré, M.P." He also wrote the articles "Ayebury," "Stonehenge," and "Tumulus," for the "Penny Cyclopaedia."

On the 74th anniversary of his birthday (July 7th, 1845), a number of his friends co-operated to invite Mr. Britton to a dinner at the Castle Hotel, Richmond, when eighty-two gentlemen were present, and Mr. Nathaniel Gould, F.S.A. in the absence of the Right Hon. Thomas Wyse, M.P. presided. Letters were read on that occasion from men of the highest standing, in addition to those who were present, desiring to give him, in the words of the Marquis of Northampton on the occasion, "a proof of the sense his countrymen entertained of his important services to the knowledge of mediæval architecture." His friends also determined to mark their esteem for him by a permanent testimonial, and a social gathering called the "Britton Club" was organised to carry out the project. The testimonial, at Mr. Britton's own suggestion, was eventually made to take the form of an "Autobiography," which he was to prepare and to print with the testimonial funds, and on this he continued to labour to the last moment. It will form a book of very considerable size, containing much curious matter. It gives evidence, amongst other things, of the power the author of it possessed of making friends, and, better still, of retaining them. The social meetings of the Britton Club\* have been held up to the present time, and will doubtless be continued in memory of one whom the members all regarded as a friend, irrespective of his claims as the pioneer in a course since followed by so many, and with such good results. None can question the important part Mr. Britton's works (produced in the face of difficulties) have played in bringing about the present improved state of public feeling with reference to our national antiquities, in making obvious the excellencies of mediæval structures, and leading to an improvement in our architecture. In the last letter addressed by him to the conductor of this journal, — a letter written with the heartiness of feeling that characterized him, to express the pleasure with which he had read some observations in these pages on the completion of the Victoria Tower by Sir Charles Barry, and to praise the view of the Peers' Staircase, — he said, — "I am also gratified by the illustrations and account of the improvements at and about Gloucester Cathedral. What a contrast does that edifice present, externally and internally, to what I had to witness when I was there with young artists, and what is the state of information and of feelings in bishops, deans, and others now compared with what it was then? Had I met with cordial receptions and courteous conduct from those persons at the beginning of the century, the 'Cathedral Antiquities' would have been a different work, and the author's writings and opinions would have been different to what they were when he produced fourteen volumes on so many cathedrals. It is also likely that his finances would have been much better at the age of 55 than they are."

Mr. Britton was a member of many Societies. He was connected for more than thirty-seven years with the Literary Fund, and for a great part of the time was one of its officers. He was mainly instrumental in founding "The Wiltshire Society, in London," and the "Wiltshire Topographical Society," and was a member of the Council of the Art-Union of London. He was a fellow of the Society of Antiquaries for many years, but after his second marriage, when he saw a necessity for reducing his expenditure, withdrew from that and some other associations.

His services to the national antiquities were recognised, when Mr. Disraeli was Chancellor of the Exchequer, by the grant of an annual pension of 75*l*. His other resources were small, and these have ceased with his life. Endeavours are being made to obtain for his widow, who has ministered most materially to the happiness of the latter years of his life, the continuance of the pension, or, at any rate, the grant of a smaller one, and we sincerely hope these will prove successful.

Mr. Britton was buried at the Norwood Cemetery, on Thursday, the 8th inst. and a deputation of the Council of the Institute of British

\* The club includes at the present time, Dr. Coually; Alderman Gubbins, M.P.; Mr. P. Cunningham, F.S.A.; Mr. Godwin; Mr. Gould, F.S.A.; Mr. Grimes, F.S.A.; Mr. Charles Hill, F.S.A.; Mr. W. Tooker, F.R.S.; Mr. Tice, M.P. &c.  
† His last wife died on the 16th of April, 1854.



Architects, including Professor Donaldson, Mr. C. C. Nelson, and others, in acknowledgment of his services to their art, met the funeral on the ground. Mr. Pettigrew, Mr. Gould, Mr. Lovell Reeves, Dr. Joseph Williams, &c. were also present.

Let us add, as an act of justice, that Mr. Britton was attended in his last illness by Dr. Williams, who for five years has been his medical attendant, with a son-like care, and has resolutely refused fee or reward.

Nearly twenty years ago, the writer of this brief memoir, then a student, received a testimonial from the Institute of Architects. Mr. Britton, at that time a stranger to him, followed him out of the meeting-room, gave him encouragement, and offered him his friendship. From that moment to the day of his death the intimacy thus commenced has been uninterrupted for an hour. We lament a dear friend while we record the death of a public benefactor.

#### EXPERIMENTS ON DANTZIC TIMBER.

The following results of trials of strength of beams of Dantzic timber, under different conditions, although perhaps of small value to those happy ones of my professional brethren who luxuriate in the fruitful ways where restriction is unknown, choice of material abundant, and the fetters of a mutable price current are unforged, may yet interest those who, like myself, "Gradescent aucta labore," more in the close walks of an economical practice, hedged in narrowly by thorny £. s. d. and also those who, like myself, consider timber a most useful and highly trustworthy servant, used within the "possible" of its elasticity.

The trials to which I refer were made with good samples of Dantzic, taken from the dock of Messrs. Lucas, Brothers, Belvedere-road, who obliged me with attentive assistance during the experiments. The timber was 23 feet long, 14 in. by 14 in. cut straight, halved, reversed, and bolted together with No. 6 inch bolts: the pieces were blocked  $1\frac{1}{2}$  in. apart. The stuff was strong, with the usual complement of long, sound knots, and one or more which would not have been had for choice: so it is always with large Dantzic in long lengths. The bearing was 26 feet 10 inches. No. 1 had a  $1\frac{1}{2}$  in. wrought-iron screwed bolt, with inch plates,  $3\frac{1}{2}$  in. wide, 14 in. long at each end, and the bolt was turned under a 2-in. iron roll, secured beneath the beam. The beam was then cambered an inch.

No. 2 had no such adjunct, and was quite straight. Iron straining-rods have but a dubious reputation, and it was to develop their real value that the experiment was principally made.

On loading No. 1 uniformly, with a dry brick wall, 18 in. thick, it lost its camber with about 4 tons, and then behaved as follows:—

With uniform load in tons.		Inches.
6	deflected	.85
8	"	1.85
10	"	2.38
14	"	3.25
15	"	3.35

The load was borne passively otherwise than the deflection, and on removing the load the beam sprang into its original straight form.

#### No. 2:—

Uniform load in tons.		Inches.
8	deflected	2.65
10	"	3.50
14	"	4.25
15	"	4.80

The load was not so graciously endured by No. 2 as by No. 1. With 8 tons it shook its ears, and spoke audibly; and with the 15 tons, a knot or two had half a mind to open, and the way was cleared for a let down, but in a few days it appeared on better terms with its burden; so 3 more tons, 18 in all, were put on, evidently puzzling it, causing, in fact, a slight lateral contortion, as if one side hung partly on the bolts. Nothing cruel, however, had been done, for on unloading, it rose straight and level with two tons on its back.

Moral.—With the weight of 15 tons, one

half at least more than should be permanently inflicted on so long a bearing, the tension rod saved 1.25 in. in deflection, certainly worth having.

Had cast-iron abutments been used, the rigidity would have been greater, but these would have run into money.

With respect to No. 2, it appears that .4750 is the multiplier for elasticity, with good Dantzic; but no end of multiplication will be saved, and danger avoided, by using .4000.

HENRY ROBERT ABRAHAM.

#### THE MAGNIFICENCE OF ROME.

##### THE ARCHITECTURAL EXHIBITION.

ON Tuesday, the 6th inst. Professor Donaldson delivered the first lecture for the present session at the Architectural Exhibition in Suffolk-street, and illustrated it with nearly 100 drawings and diagrams. His object, he said, was to impress his hearers with clear ideas of the Magnificence of Roman Architecture; and he addressed his observations *ad populum*, and not as to a professional body. Dividing the buildings of Rome into two classes, sacred and secular, and these again—first, into temples and tombs; secondly, into fora, baths, aqueducts, theatres, and triumphal arches, the lecturer proceeded to describe examples of each, known to the majority of our readers; pointing out in respect of temples the colossal size of the columns in some cases, the enormous amount of decoration applied, and the large expenditure: the shafts of some of the columns must of themselves have cost thousands of pounds. The money for these works was obtained from conquered provinces, so that the outlay did not press on the Roman people. The columns of the Temple of Jupiter Stator were 60 feet high, and of marble. In excellence of execution, the Roman works were never excelled. The Temple of Vesta, at Tivoli, was probably the work of a Greek architect, possessing all the refinement of the works of that people. The lecturer dwelt some time on the Pantheon, with its dome, 142 feet in diameter (that of our St. Paul's is about 100 feet), lined with bronze, its columns of yellow marble, and walls covered with a similar material. This was executed about 25 B.C. The bronze was partly gilt, and had an effect of which we know nothing here, such is the parsimony of our Government and their low ideas in matters of art. The cupola of the new reading-room at the British Museum is as nearly as possible the size of that of the Pantheon; but our Government thought they had done much when they permitted an expenditure upon it of 5,000*l*. Passing on to the Baths, the professor showed that at one time there were more than 300 baths in Rome. The principal establishment occupied a site 1,300 feet square, or nearly as large as that surrounded by the houses of Russell-square, and included noble halls, trees, colonnades, statues, fountains, and seats of marble, produced without regard to cost, and forming a whole of which, in modern times, we have nothing to give any idea. The Pantheon formed part of the Baths of Agrippa. There were libraries, too, and reading-rooms, and although, probably, they had no papers like the *Times* and the *Builder*, they there heard poets recite their verses and critics comment on the new works.

Describing the Forum of Trajan, the original condition of which is made evident to us by existing medals and other records, he alluded to the countless statues set up in honour of their warriors, legislators, poets, architects, and others, and showed the inducement to exertion thus held out. The ancients had fewer books than we had. It was an old saying, beware of the man of one book, and he sometimes feared that with the number of books that were produced, and we were forced to read, wisdom became rare. Trajan's column, 125 feet high and 11 feet in diameter, covered with a spiral line of sculptured history, afforded him another theme. It was formed of solid blocks of marble each 5 feet high, out of which the staircase was hollowed. Proceeding then to the buildings connected with games, the lecturer showed it was part of the policy of the emperor to keep the minds of the people occupied, as it was, too, in France. The Coliseum, 622 feet long, 522 feet wide, and four times as high as our ordinary houses, was described, with its 240 arcades,

countless statues, and seats for 80,000 persons. There were obelisks in all quarters: we quibble and hesitate at the outlay of a few thousands to bring home one that belongs to us. There were miles of aqueducts 100 feet high striding over the Campana, which brought floods of water into the city, and called into life hundreds of noble fountains.

Need we say anything more to convey an idea of the magnificence of ancient Rome?

#### GOTHIC AND CLASSIC.

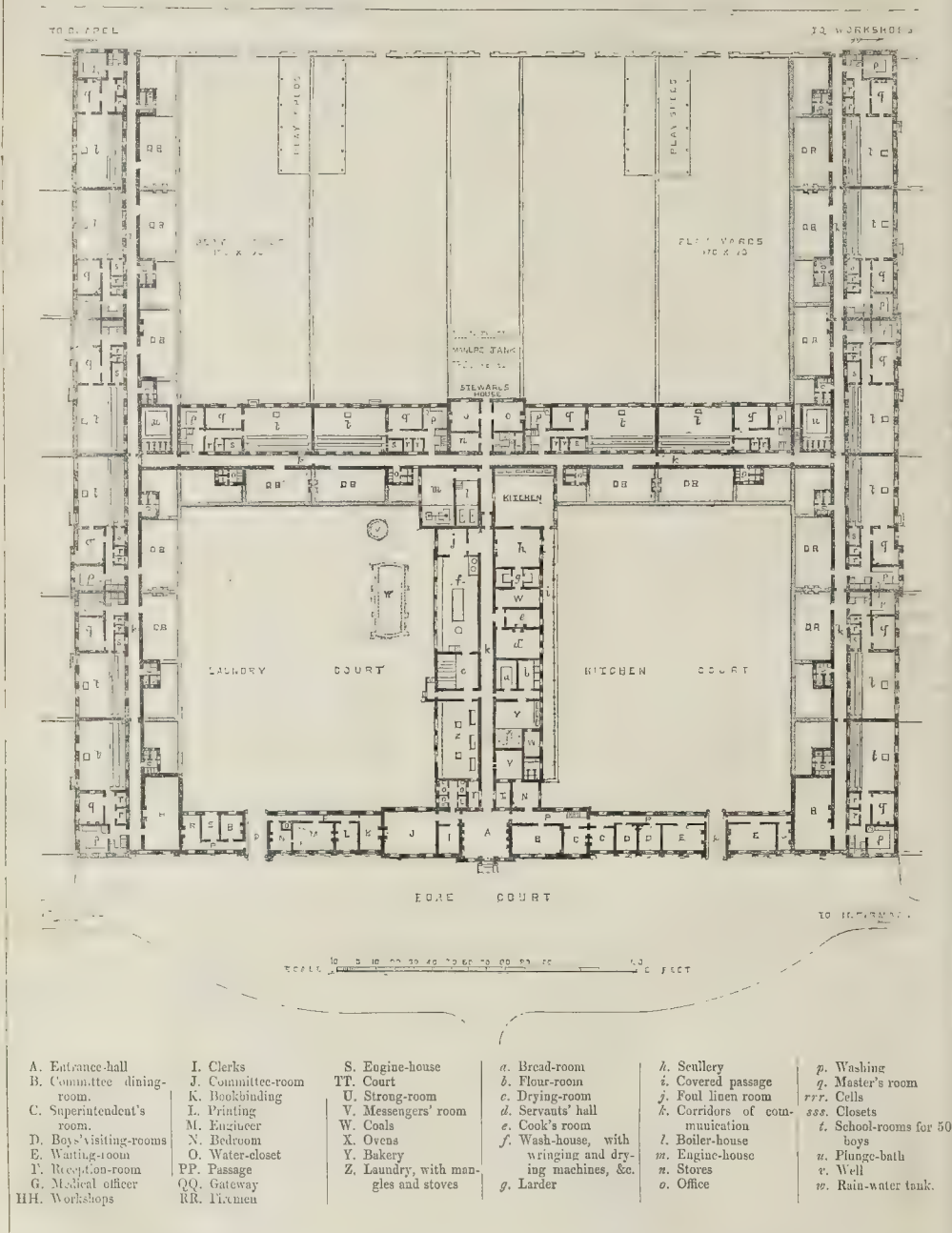
In this age of mediævalism, one is not much surprised to read such an article as that by Mr. Scott, in your number for the 29th of November, but I had certainly expected to have seen a complete reply to it in your pages, from other than the party concerned, as it is a subject in which all are interested. The writer seems to intimate that architecture consists of but one style, and that style Gothic, subdivided into the Norman, twelfth, thirteenth, fourteenth, and fifteenth centuries, &c. and which is to be adapted to our multifarious wants, from the palace and cathedral downwards, throughout every grade of public and private requirement, from the most extensive mansion to the smallest hut, and on through furniture, fittings, to, of course, "middle pointed" collars. But what really is the fact? what is the purpose of architecture? Is it not to enwrap our actual wants in the folds of *appropriateness* and beauty? Very well; but are all other forms of beauty to be utterly ignored beside those prevalent during the twelfth, thirteenth, and fourteenth centuries, in the churches and other ecclesiastical buildings? Are we to feast our eyes upon nought but pinnacle, and gable, and battress, and hood-winked windows? Are we to be continually mistaking theatres and other public buildings, and manorial residences for churches, schools, and colleges? Are our minds to be continually bent to the contemplation of ecclesiastical subjects, granting, of course, that Gothic is the appropriate *ecclesiastical* style? Our patrons are too apt to be led by a pretty set of drawings, not having inclination to trouble themselves much about the matter beyond the extent of required accommodation; but I say, happy is the architect who has a client who does take a lively interest in the progress of art, and who has resolution and foresight enough to see beyond the passing fashion of the day, thereby setting an excellent example, and studying his present comfort, as classic architecture (when properly understood) will, I have no doubt, again become the adopted style of this country for public and private buildings. It has never been properly understood and practised in this country but by the few; and, indeed, by them in most cases as servile copyists of the details of old Greek and Roman buildings: the same course as that pursued in the present day by "Gothic architects" in churches, even to the reproduction of useless papistical piscinas, obsolete screens, and disease-engendering sedilia but any one who has had opportunities of *studying* of what classic architecture is capable, will readily perceive the universal fitness it possesses for the requirements of a rich, enlightened, and progressing nation, the readiness with which it adapts itself to the advancing inventions of the day, its chasteness when unadorned, its majestic presence when enriched, its adaptability to "common" wants in light, warmth, and ventilation: all these render it far more likely to be permanently adopted for domestic buildings (when there are architects employed capable of designing them), than the hard stony Gothic of the fourteenth or any other century, as advocated by the "one-branch" hands.

Gothic mansions erected in the present day are a failure in the essentials:—casements admitting the external air in all seasons; fireplaces so large that all the heat generated upon the comfortless "firedogs," is immediately transmitted to the nether heaven; open ceilings and stained joists, giving a general cold church-like air to them, very depressing and unpleasant, and mixed with gaudy illumination with more colour than meaning, and certainly quite out of place in a social establishment.

THOMAS GOODCHILD.



## PROPOSED MIDDLESEX INDUSTRIAL SCHOOL: GROUND PLAN.



## MIDDLESEX INDUSTRIAL SCHOOL.

The committee appointed by the Court of Justices for Middlesex, to provide an Industrial School for Juvenile Offenders, have reported their proceedings, and have selected plans for adoption. The report says, a competition having been decided on as the best mode of obtaining designs,—

"Instructions were accordingly drawn up and circulated for the guidance of the architects; and, upon an ap-

pointed day, forty-one sets of designs were sent to the Sessions House; these having been arranged and classified, your committee, under the impression that professional assistance would essentially advance the object in view, decided upon referring the designs to three architects, Mr. Sidney Smirke, Mr. P. C. Hardwick, and Mr. F. H. Fowall, to select seven, which, in their opinion, would be best adapted for the proposed Industrial School as expressed in the instruction.

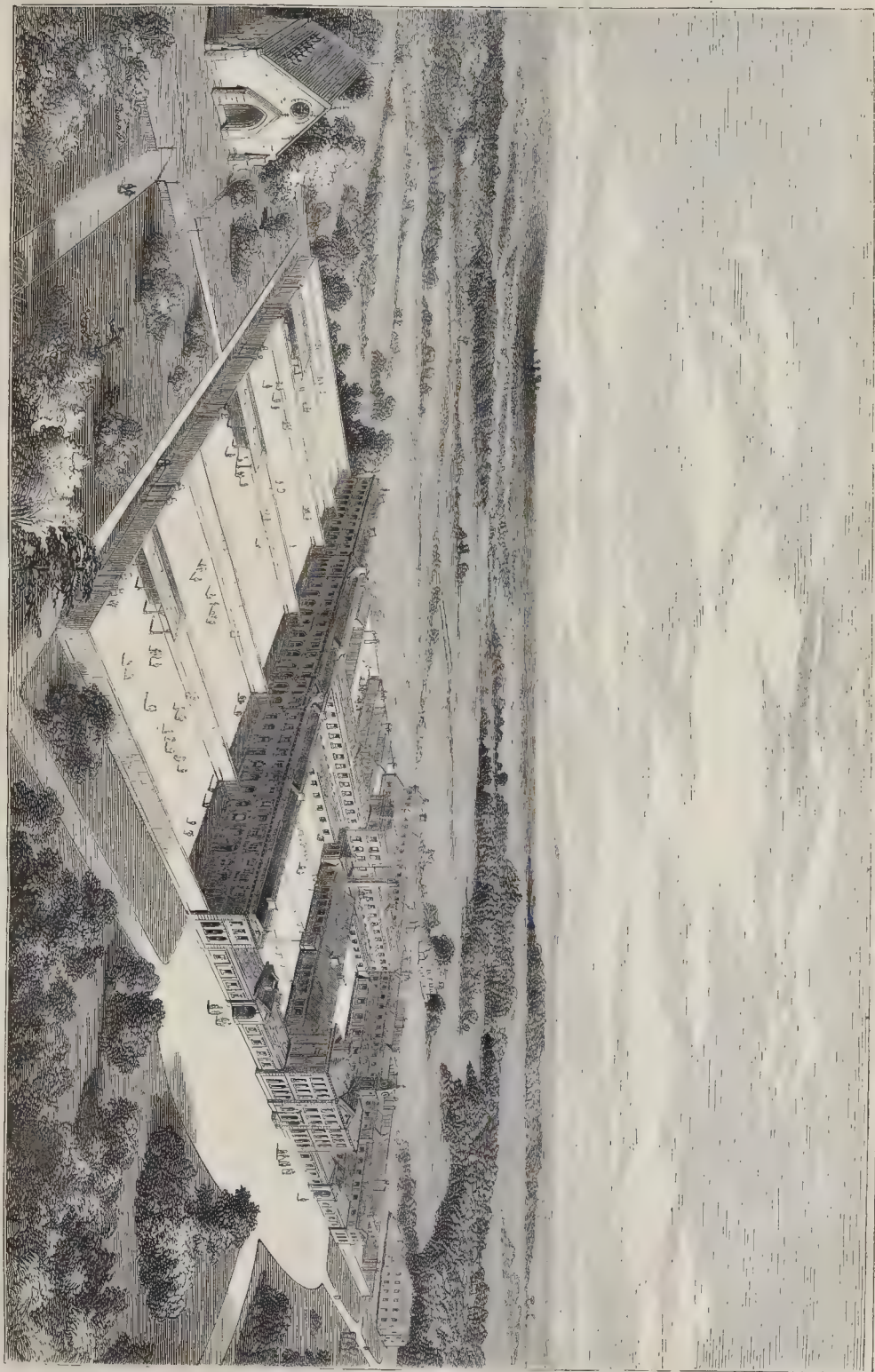
The seven plans so chosen, however, after careful detailed consideration, did not appear to meet the requirements of the committee. Under these circumstances, and after awarding the premiums, your committee proceeded to reconsider the other designs submitted; and, after

minute examination, and hearing explanations of the details and arrangements by several of the architects, it appeared that one of these designs by Messrs. Banks and Barry, of Sackville-street, Piccadilly, with some modifications, was best calculated for carrying out the important object with which your committee have been entrusted."

Our readers, who are already informed of the extraordinary course pursued by the magistrates in the conduct of this competition, will observe that the report disguises the fact that the premiums were not awarded by the com-



PROPOSED MIDDLESEX INDUSTRIAL SCHOOL, FELTHAM.—Messrs. JAMES AND BARNY, ARCHITECTS.





mittee to the designs selected by the appointed referees, but to three designs selected by themselves, showing what we are forced to call, a want of ingenuousness which will, doubtless, lead to reproof. In awarding the premiums, they passed over not merely the plans selected for them by the architects they had called in, but the design that they now find "embraces all the attributes of an Industrial School," and is one they "can with confidence commend to the Court for adoption."

We would carefully avoid even seeming to cast a slur on the authors of the design ultimately selected: our objections apply only to the course pursued by the committee. Presided over by Mr. Edmund Antrobus, himself an artist, and a friend of artists, and consisting of gentlemen of the highest character, the inquiry, nevertheless, cannot be avoided.—"How is it that you have disregarded the opinion of those you paid to advise you, and have awarded the premiums to three designs which you now declare were not the best?"

We have engraved a view of the selected design, and the plan of the ground-floor: the description we condense from the particulars given by the architects. 90 acres, 2 roads, and 27 poles of freehold land, at Feltham, have been purchased, as the site, for the sum of 6,000/.

The site being nearly level, and therefore without much natural drainage, the architects have kept the ground-floor of the building sufficiently above the ground, to allow of a free ventilation under it from side to side, as in their opinions, the best preventive against damp or decay of the floor timbers, or dampness in the walls or floors.

The walls are proposed to be (for reasons of economy) exclusively of brick, advantage being taken of the use of red brick for the general surface, and white brick for the quoins, strings, pilasters, cornices, margins to windows, &c. The whole of the walls internally are proposed to be painted on the brick, to about 5 feet above the floor, to allow of washing them, the upper part of the walls and the ceilings being simply coloured or whitened.

Since the entire edifice is to be composed of a number of blocks of building, each suitable to the separate accommodation, by night and day, of fifty boys, with their master, the accommodation for each section is arranged on two floors, the ground-floor containing the school-room opening on to the play-yard. There is a master's room overlooking both the school-room and also the play-yard, and a washing-room fitted with metal basins, and also with a copper for hot water communicating with a sunk trough or bath, for washing the feet, or the entire person. It being left undecided by the committee, whether day-rooms distinct from the school-rooms may be required, the size and position suggested for these is indicated by the lighter tint on the plans. The upper floor contains the boys' dormitory, calculated for fifty beds, each 2 feet 2 inches wide, and 6 feet long, having spaces of 12 inches between each bed at the sides, and a wide gateway at the foot, and providing 378 feet cube of air to each occupant of the room. Adjoining, and overlooking the dormitory, is the master's bed-room, and outside the dormitory floor, on the landing of the staircase, is a closet for use by the boys at night in case of illness. Doors, dividing this corridor into lengths, are placed so as to perfect the division of the sections, and such doors would have one key in the possession of the master of the section to which they belong, and a master-key passing them all for the superintendent or steward. The school-rooms would be lighted from both sides, but chiefly from the outside *facades*, so that the master, standing on that side, would see all his boys at their desks.

The size of the block of building, in each section, required for all these arrangements, is 72 feet long, by 28 feet deep, and two stories, or 35 feet high. The clear height of the school-rooms, &c. being 14 feet, and the clear height of the dormitories being 14 feet. Separate play-yards are provided for each section, such play-yards being about 170 feet long and 72 feet wide.

It may be here noted that the provision in each section of separate play-yards necessarily causes the building to be a good deal spread out, and dictates also that it be only two stories high.

Six sections, of three pair each, as above described, are placed in each of the side *facades* of the building, giving accommodation together for 600 boys, while 200 more (making the entire 800) are provided for with like arrangements in the transverse building.

The various domestic offices are placed in the range of building, extending between the steward's office and the entrance building, arranged on each side of a corridor lighted from above, and communicating thereby with the rest of the establishment.

The entrance front is occupied in the centre by the main or entrance building, three stories high, in which is provided a spacious entrance-hall, on one side of which is the visiting committee's room, clerk's room, washing-closet, water-closet, and fire proof room for papers; and on the other side a dining-room for the committee, and the superintendent's or chaplain's office.

Plans are also given for the chapel, the industrial work-shops, the infirmary, and the entrance-lodge, all in separate buildings.

The entrance will be from the road between Feltham and Beddout.

The water-supply is proposed to be drawn from a well to be dug in the kitchen-court, near the steam-engine, whence it would be lifted into tanks in the upper part of the centre building of the north and south fronts, containing together 15,000 gallons.

The estimated cost is 38,950/; and if the Day-rooms be added, 44,760/.

### COPYISM AND DESIGN.

In a few instances the assertions with regard to designing by copy are not convincing. Though an architect be dependent on examples for his first efforts at any production, he may be independent of everything previous in the result of his compositions. All the designs extant at the present day have not originated in their respective authors, but rather, it may be said, they represent the conceptions of great men in different ages of the world; and these premises may be established throughout all time, should we even go back to the earliest records. And it is evident that the form and construction of the first classic temple, built, according to Pliny, several years before the Trojan war, was faithfully carried out by every conqueror and architect for subsequent centuries, until the Christian doctrine was established in many Pagan basilics.

The Parthenon was not the original idea of the Greek quadrangular temple, any more than Salisbury Cathedral was the first effort at Gothicism in England. Architectural study was scholastic long before; and from the circumstance of Carpio having written a treatise descriptive of the edifice, it would appear that the Acropolis exhibited the glorious result of emulative zeal. The Muse was not in her infancy when artists were found who could carve such pediments, and work to the models of a master genius, leaving to posterity an almost indestructible example of classical perfection. That there were earlier temples of the same form is not only evident, but it is certain that, in the transfer of art to the Roman empire in subsequent centuries, the outlines were correctly copied, and very little improvement was found necessary, save in mouldings and decorations. Unlike some other efforts at progress, which are concealed from general view, and wholly disappear without a vestige remaining, building has left historical monuments of its advancement on the surface of the earth. These are visible to all persons who choose to study or admire their principles or beauties; and from their very position they influence the student, inasmuch that copyism is the natural consequence.

Apathy may lead a man astray, with respect to designs in general, as much as prejudice; but the greatest error possible is to imagine, that because a first-class edifice has some similarity in its outlines to ancient models, it is no longer original on the part of the designer. The moment some critics perceive any parallel between an elevation and an existing palace or temple, the architect becomes servile in their estimation; and he is reproached as a copyist because details of the same description may be seen in a well-known city. Though aware that architecture is, more than the other arts, limited within impassable barriers, and bounded by straight and visible outlines, they argue in an indefinite sense, as if absolute originality in design were intuitive, without learning or practice. But, by the very arguments upheld in the cause of novel variety, the reader is often brought into a narrow compass of reflection, and is compelled to acknowledge that definable axiom, which paralyzes many an effort at heterodoxy, in the words of St. Augustine, "Omnia porro pulchritudinis forma unitas est."

Edinburgh showed a spirit to emulate Athens without derogating the talent of the artist; and

London owes the best of its modern improvements to an innovation, wherein copyism took the lead, and talent completed what was necessary to harmonize fine ideas with immediate utility. Where beautifully applied, the reiteration of former works to modern edifices, cannot be called servile copyism, any more than the use by Hermodorus, in Jupiter Stator, of the forms in the Temple of Diana at Ephesus, by Chersiphro, built eight centuries previous to the Augustan age. Otherwise, the cities of England would still be adorned by Langley's Gothic varieties, or the cubical masses of inelegance proposed by Morris, in his theory of harmonic numbers. The Colosseum of Regent's-park is surely not copied from the Coliseum, and if it bear any significant resemblance to what has been called the Pantheon, it must be in the imagination of persons who are influenced by mere outward shape. Many other modern institutions bear the impress of similarity to ancient structures, which, on account of their fitness for the purposes required, lose the fault of being so with servilism. Therefore, it is of no consequence to the world, when a public building is beautiful, useful, and economical, if some of its outlines have been borrowed from the wreck of ages. It is immaterial whether the genius of Michael Sanmichelli has suggested a new hall in Manchester, or that the Stones of Venice have been translated to an extensive warehouse in the same city; when one has the merit of being externally characteristic of its internal application, whilst its sculptures are judiciously effective, and the other is a laudable effort to render mercantile pursuits aristocratic; but, apart from all feelings of originality as to design, such buildings seen upon a foreign shore would command much admiration.

Not only were the principal outlines of classic times carried out successively in buildings, but imitations were made in the carvings, proving that a similar spirit influenced the architects. The metopes of the Temple of Theseus, at Athens, were ten panels of figures, showing the labours of Hercules, in bas-relief, and on the eight metopes in return were the achievements of Theseus; casts of which may be seen in the British Museum. In the Temple of Minerva, on the Acropolis, the frieze of the exterior wall of the cella is decorated in bas-relief, by a procession to the same temple, during the Panathenian festival. The metopes contain two figures each, in alto-relievo, illustrating the battles of the Centaurs and Lapithæ, at the nuptials of Pirithous. One of the pediments represents the Birth of Minerva, the other, the Dispute between Neptune and Minerva concerning Attica. And, in later years, the frieze of the Forum of Nerva was decorated, in bas-relief, with Minerva superintending the Manufacture of various Articles.

In like manner, the fathers of mediæval architecture knew too well the value of such embellishments; and, setting aside the mythological, they indirectly copied the ancients, substituting subjects from the Pentateuch, the psalms, the prophets, and the parables. Three arches at Malinesbury are carved with scriptural lessons, the first with *tableaux* from the Creation to the death of Abel; the second thence to the building of Solomon's Temple; and the third, from that period to the termination of the church militant. The spandrels of the arches, in the chapter-house of Salisbury Cathedral, exhibit Abraham entertaining three angels, and Sarah standing in the tent, Isaac blessing Jacob, and Rebekah standing beside the patriarch's hand on his son's breast, Jacob blessing his sons, Pharaoh's two dreams, and further on—ad sculpturing the genealogical line of redemption. Michelangelo boasted of taking the dome of Milan as a copy, and suspending another in the air, over St. Peter's, at Rome, aware that he gained more than he lost by imitating such eminent masters as Bramante and della Francesca. Cano transferred the architecture of Italy to Madrid, and Guarini to Brague, Lisbon, and Paris; preferring the modification of what they studied to grotesques designed for novelty.

Sir Christopher Wren was tormented about his imitations, and also in other ways, during his professional career. Though not altogether agreeing with him, in his manner of handling



the art, it may not be amiss to note a few of his observations in refuting some charges brought against him. The reason why he used two orders in St. Paul's Cathedral was because he could not find stone large enough in our quarries; being at length compelled to use Portland, and there the strata nearest to the sea. Bramante and the quarries of Tivoli for St. Peter's, and could follow out one order of that magnitude: whereas, were Wren to make his columns larger than 4 feet in diameter, he could find no stone sufficiently large for entablatures. He doubled the pilasters on the outside, to make space for larger windows, and to regulate the arcades of the roof. He doubled the columns of the portico, to make room for doors, because the same was done in the Temple of Peace at Rome, and the cupola of the Temple of Bacchus, near St. Agnes's Gate, at Rome, was supported inside by twenty-four coupled composite Oriental granite columns; and because Bramante and M. Angelo used coupled columns wherever they wished to do so. He set the centre columns further apart for the doorway, an example being found in the portico of Sta. Maria Maggiore, at Rome. The architrave within the cathedral is cut off by the arch, because the architrave does not lie from column to column, but from column to wall, the same being done in the Temple of Peace; and where there are no arcades, and next the dome, he continued the entablature. He incorporated small pillars of the same order into larger, observing that Vitruvius, in the basilic of Colonia Julia, at Fanum, introduced small pillars to support the galleries. The pitch of the cupola is thus determined: the Pantheon is only one diameter of the dome, which he considered too low: St. Peter's was elevated to two diameters; and Wren, imagining the latter too high, chose a mean proportion between both, for St. Paul's Cathedral.

These quotations will be found in the *Parentalia*, by any reader who wishes to make reference; but still, who can look upon that magnificent edifice as a whole, and fancy for a moment that its illustrious architect was influenced by meagre copyism?

FRANCIS SULLIVAN.

#### THE ARCHITECTURAL PUBLICATION SOCIETY'S WORKS.

PART VII. of the "Dictionary," now issued, containing a portion of the letter C, shows, like the previous parts, a care which, if continued, will cause the work to be an acknowledged standard for reference on all subjects connected with architecture. The wide range of its contents should be sufficient to place it on the shelf of all the members of the profession; and amateurs and others interested, whether in the art or science, ought to aid the society by subscribing. We are glad to see that the list of members lately issued has the advantage of many new names; but the total number is much below that which a publication of really national importance demands, and ought to have. These occasions, of course, a comparatively small quantity of text to be issued, for the committee can only spend the amount which is received annually: double the quantity could be issued to each member with double the number of subscribers. After the reiterated complaints for many years of the absence in England of a professional work of the same extent, now that one so complete has been commenced, it is most injurious to those concerned that there should be any lack of support; and we trust that the example so creditably set by his Royal Highness Prince Albert, who, we see, has subscribed for three copies, will be immediately followed by many of our readers.

It is announced that *illustrations* for the current year are in the hands of the lithographer, and that a title-page will be sent out in the next part, so that members will be enabled to bind up the letters A and B with their illustrations, which will tend materially in making the work readily accessible.

To those of our readers who may not be aware of the scope of the "Dictionary," we would mention that its object is the statement of *facts*, and not of *opinions*, upon the old and new words, which at the present time occur not

merely in practical and theoretical architecture, but in timber, geology, and chemistry relating to building: the biographical notices are interesting, from their completeness and novelty, and would form a valuable work in themselves, especially if arranged according to the form shown by Gwilt, in his "Notitia Architectonica Italiana." Scarcely any cathedral town but is illustrated by a series of its dated buildings, and great interest attaches to the descriptions given of the works of people whom it has hitherto been the fault of our best writers to regard as barbarians in art. The Asiatic and American remains are particularly noticed; and we are glad to have clear explanations of those Oriental terms used in building which are now becoming familiar in art publications.

#### SCULPTURE.

THE statue of General Sir Charles Napier, which has been set on the pedestal in Trafalgar-square since our notice of August last was written, is not more satisfactory in effect than we feared would be the case from the model. It is as difficult to see on what grounds our contemporaries of the daily press award their praise in matters of art, as it has been to understand their censure. The statue is ill placed: it falls as a public monument, because it wants architectonic character; and the sculptural treatment, which was heavy in the plaster, is more so, and is false in very principle, in the bronze. Truly, our sculptors lately, though second to none in Europe, have not been acquitting themselves creditably, at least in monuments out of doors. The necessity, and at the same time the good aesthetic principle, of a modification in the form, when there is a change in the material; and certain requirements of grouping, very obvious to architects, which belong to the effect of every statue on a pedestal, and every public monument, are becoming habitually neglected. Those who would infer that we should do better by employing foreigners, may observe the monument to officers of the Guards, erected in St. Paul's Cathedral, with its own faults, in the use of contradictory principles as to imitation,—not to mention the ill-cut lettering of its inscription. We must take some opportunity to inquire into the course for correcting these growing deficiencies in a noble branch of art.

#### BUILDING TRADE PATTERN-BOOKS.

WITH reference to the endeavours of manufacturers to bring the articles they produce under the notice of architects and others, by means of illustrated circulars and trade-lists, to the waste of time, trouble, and therefore money, caused by the inadequacy for practical purposes of the information they generally supply, Mr. Digby Wyatt has addressed the following observations to the Society of Arts:—

"Within these last few weeks I have received, as have, no doubt, very many others in my profession, some half-dozen picture-books, many evidently got up at very considerable cost, and evidencing a most satisfactory progress in design and technical ingenuity."

Of this half-dozen, scarcely one gives any notion, either by scale or figuring, of the size and substance of the objects represented: prices are either not at all indicated, or, if indicated, are expressed so vaguely as to form no guide whatever to the real cost of the articles.

What an architect really requires, if these pattern-books are to be of any use to him, are the following conditions:—

1st. Each object (if in the least degree complicated) to be given in plan, section, and elevation.

2nd. Each object to be drawn to scale, and the scale put upon each plate.

3rd. Each object to have its leading dimensions figured as well.

4th. The best mode of attachment of each object to adjoining work to be clearly shown.

5th. Such a concise description of each object to be given, as to enable the architect to define the same in his specification, without risk of confusion or mistake.

6th. The price of each object complete, as engraved, to be marked beneath or near to the engraving; any suggested variations, either of enrichment, or tending to simplification, to be also priced; and attention to be drawn to probable cost of fixing, painting, gilding,

or any necessary process not included in the first price quoted.

Illustrated price-lists of articles for the use of all persons connected with the building trades, prepared in accordance with the preceding conditions, become most valuable sources of reference to professional men; whereas, if only pretty picture-books, they are just looked over, thrown on one side, and then either put upon the bookshelves, perhaps never to be taken down again for years, or, after lying about for a week or two, are thrown into the waste-paper basket, as of no use.

On the other hand, in an architect's office, a well-arranged pattern-book is constantly referred to, and articles are drawn and specified from it, of course to the benefit of the manufacturer. If an architect knows that Brown's No. 3, or Jones's 24, or Robinson's 102, are just the right style and size for Mr. Smith's house, which he has got to build, and will cost such an amount as he thinks Mr. Smith can afford to pay, he at once determines to introduce the aforesaid numbers 3, 24, or 102, although, very possibly, some other manufacturer may, at the very same time, be making better and handsomer articles at a lower price.

Let us suppose that, seduced by a pretty picture-book, without scales or prices, the architect is tempted to write respecting some work he wants done, to the person who sent him the aforesaid picture-book. He receives a reply, giving him the particulars the pattern-book ought to have supplied, and from the manufacturer's note he learns that the article he supposed to be about 4 feet long is 6 feet 6 inches; and that what he expected would cost 5*l.* will cost 7*l.* 10*s.* He then writes to know if size and price can be modified. The manufacturer says, in return, that any modification can be made; will the architect send a sketch? The architect makes his sketch, and the manufacturer finds that the alteration, although diminishing the quantity of material, will, through the additional labour, cost more than the original 7*l.* 10*s.* The architect does not think the article worth the money, and, in his client's interest, declines to purchase. Every one who has had his trouble for nothing, and discontent is, of course, the result. If even the article should be procurable at the architect's price, 5*l.* the 5*s.* his commission will procure him in return for his own and his clerk's time wasted, offers no very great premium to future transactions with the sender of the pretty but foolish picture-book.

Pray, believe that I am drawing no fanciful picture, but one of daily occurrence. My only inducement to sketch it has been my sincere belief that, in the rapid introduction into the building trade of improvements in the quality and technical treatment of old and new materials, lies the secret how we can have of an ultimate escape from the enfeebling tradition in architecture to honourable and national originality.

#### MENTAL CALCULATION.

THE interesting exposition of his system of mental calculation, which was made by Mr. George P. Bidder at two meetings of the Institution of Civil Engineers in February, 1856, and noticed at length in our last volume, page 133, has been set forth in the printed "Proceedings," with considerable ability on the part of the editor, Mr. Charles Manby. We need only remark, after having looked through this report of the facts and arguments which were brought forward, that it is clear more might be done in arithmetic by mental calculation, were proper attention given to it in schools. This, however, is not the only matter of suggestion which we derive from Mr. Bidder's arguments. The identification of numbers with defined ideas—as, for example, the numerical dimensions or divisions of an area, with its visible dimensions or parts—the suggestion of a rational system of *memoria technica* which opens out, and the intimacy of the relation between number and form, seem to us to extend the subject to matters not more closely connected with the professional calling and the study of architecture than with the now admitted desirableness of general instruction in drawing, and even through every bearing of the question of education.

#### THE BUILDERS' BALL.

AT Willis's Rooms, St. James's, on the 12th February, the annual ball in aid of the Builders' Benevolent Institution will take place, as our readers may have seen from the first advertisement in our last number. Need we still urge the advantage of these balls to this important charity? They have evidently already become highly popular, and have brought in not a little hard cash to its funds; but one cannot



feel satisfied with even this measure of success, so long as it is remembered that the builders, who are ever occupied in the erection of substantial almshouses for all sorts of trades and professions, have as yet erected none of their own. Charity balls are not to be expected of themselves to enable the Builders' Benevolent Institution to realise this grand object of their philanthropic ambition, but such meetings have already proved themselves to be highly capable of aiding towards the speedy attainment of the object in view, and all interested in this ought to regard it as a sacred duty to assist all legitimate means of exciting a common feeling in its favour. In the present instance, what they can do is to swell the list of stewards themselves, and to canvass amongst their friends, so as to extend the common interest on behalf of the Builders' Ball.

#### PROVINCIAL AND CHURCH-BUILDING NEWS.

**St. Ives.**—The improvement of the church here is going on, and an addition has just been made by the erection of a reredos, of carved stone, with illuminated panels, having the sacred monogram in the centre. The Decalogue, Lord's Prayer, and Belief are inscribed on each side of the reredos, in the old church text. The stonework is by Mr. Hide, of this town, from a design of Mr. Scott's; and the illuminated writing, decorations, &c. have been executed by Messrs. Harland and Fisher, of London.

**Market Harborough.**—The project for a Corn Exchange, at Market Harborough, is said to be likely to be successful: 200 out of the 300 shares are now taken up and a deposit paid upon them, and it is expected that the other 100 will shortly be allotted. A number of donations have also been given, which will increase the funds.

**Beaconsfield.**—Attention is directed to the attempts which are being made to restore the ancient church of Beaconsfield, in Bucks. The Beaconsfield churchyard contains the tomb of Edmund Waller; and within the church itself is a poor tablet in memory of Edmund Burke, whose remains are deposited beneath. It is a reproach to the country of Waller and of Burke that no fitting memorial has yet been placed above their ashes. The church itself is in a half-ruinous condition. Rymer's inscription on the tomb of Waller is mouldering into illegibility. The Rev. John Gould, rector of Beaconsfield, has made an appeal in behalf of the edifice and its illustrious dead; and an ample fund will, doubtless, be raised. A committee has been formed for the purpose of carrying out Mr. Gould's plan of restoring the church, and replacing the monuments by others more worthy of their objects.

**Quarrendon.**—The Rev. J. C. Wharton, vicar of Bierton, is endeavouring to organise a fund for the fencing round of the church of Quarrendon, so as to protect it from further mutilation and spoliation.

**Alcester.**—It has been resolved to erect a new Corn Exchange here, on a site adjoining the Bear Inn, in High street. The sum required for the project is 1,500l.

**Shrewsbury.**—A memorial window of stained glass, is in course of erection in the inner vestibule of St. Chad's Church, Shrewsbury, to the memory of the late Mr. T. Smitheman Edwardes, of this town. The subject of the window (which is 15 feet long and 6 wide), is "the Ascension." It was executed by Messrs. J. Hardman and Co. of Birmingham. This memorial has been provided by Sir Harry Edwardes, bart. a relative of the deceased.

**Wolvensfield Heath.**—A few years since, a Wolverhampton gentleman provided for the spiritual wants of the inhabitants of the rapidly growing village of Wolvensfield Heath, by erecting, at a cost of 6,000l. the church dedicated to the Holy Trinity. The necessity of a parsonage-house and schools then became apparent, and towards the carrying out of the latter object the Privy Council granted 670l.; and the National Society 80l. The benevolent individual above alluded to, further contributed 100l. to the twofold purpose, and this donation was followed up by others. The parsonage-house has been erected, and the foundation of the schools has

been laid, and the works are being proceeded with as expeditiously as the weather permits, but funds are still wanting. It has been determined to erect the schools large enough to accommodate 120 boys, 80 girls, and 150 infants.

**Ladywood (Birmingham).**—The new schools in connection with St. John's Church, Ladywood, were opened on Monday before last. The total cost of the erection was 3,100l. In addition to school-rooms, there is a residence for the master, and land for three separate playgrounds, each overlooked by the schools. The building consists of one large room, to be divided by a wooden partition into a boys' and girls' school.

**Stockport.**—A window has just been erected in the parish church of Stockport, at the cost of Mr. James Newton, of Cheadle Heath, to the memory of his mother. The subject is the three Marys with the Angel at the Sepulchre, after our Lord's resurrection. The window has been executed by Mr. Hedgeland, of St. John's-wood.

**Cawood (Yorkshire).**—Gasworks have been erected and opened at Cawood. The capital is 1,200l. and the shares amounted to 2l. each; and they now bear a premium of about 10s. The works, according to the *York Herald*, were contracted for by Mr. Knapton, and they have been completed within about two months of their commencement, at a cost of nearly 1,000l. They are situated in Sherburn-street, close to Bishop-dyke, and near the old castle; and the brickwork has been executed by Mr. Bedford, of York. The patent dry gasholder stands on iron pillars: it is 25 feet in diameter, and 10 feet in depth, and will contain 5,000 feet of gas. By having a dry gasholder, formed partly of sheet iron and partly of Indian rubber, says our authority, economy of space is promoted, and the gas does not condense so much as in the ordinary gasholder. The expense of making a tank, &c. is also saved. Gasworks on the same principle have been erected by Mr. Knapton at Castle Howard, Newbrough Park, Lord Wharcliffe's, and other places in the country, and gas has been introduced into several coal-pits by him. The street mains at Cawood consist of 243 yards of 4-inch, 132 yards of 3-inch, 950 yards of 2-inch, and 740 yards of 1-inch iron pipes. There are twenty-eight public lamps in the town, and all the shareholders are gas consumers.

**North Shields.**—A gentleman belonging to North Shields has offered to head a subscription for building an infirmary in that town with the sum of 200l.

**Gourock (near Glasgow).**—The ceremony of laying the foundation-stone of Gourock Episcopal Chapel took place on Saturday week. The stone was laid by Bishop Trower. The chapel will be in the Early Decorated style of architecture, and will be seated for 120 persons.

#### THE EDUCATION QUESTION.

I SHALL feel glad at being permitted the use of a small space in your columns, in order to contradict an impression which appears to prevail in some quarters, viz. that it is the object of the Architectural Association to revive the question of a professional diploma. That such is in no degree the aim, or even the wish of the present committee, I can confidently assert, and I wish to do so, because I conceive a contrary impression calculated to do harm to the cause of architectural education, to which alone their efforts are directed. The recent letter of the Association to the Royal Institute, published by you, is identical in principle, and in no way goes beyond the memorial of Mr. Kerr. It asks for the establishment of "examinations founded on certain acknowledged principles, and defined courses of study." This, while it probably involves the ultimate granting of degrees, by no means does the institution of a professional diploma. It is worthy of notice, as indicating the existing feeling on the subject, that two memorials to the same effect should have emanated simultaneously from sources quite unconnected, and it is to be hoped that the second will meet with greater consideration than that of the Association. In your remarks as to the necessity of self-exertion and education, none will agree more heartily than those to whom they are directed; but it must be borne in mind, that while few results are denied to well-directed labour, many are to be misdirected, and in any case the requisite time is grievously increased.

It is this right direction, permanently afforded, which the junior members of the architectural profession are seeking from the elder, and which in every other they receive. If the Royal Institute will take the position it has the power to do in this matter, it can scarcely fail to greatly increase its influence and consideration, and in my own opinion the recent question of amalgamation will speedily receive a natural and desirable solution.

A MEMBER OF THE ARCHITECTURAL ASSOCIATION.

#### HOUSE-BUILDING.

OBSERVING in your valuable paper of last week a letter from a correspondent, advocating an alteration in the present Building Act, I beg to suggest the necessity of inserting a clause obliging builders of small houses to keep the ground-joists at least two clear feet above the surface of the ground, and likewise of laying one course of slate or lead under the plate of the ground-joists, to prevent the rising of damp; the neglect of which precaution is very detrimental to the poor occupants of such dwellings, and is the mother and father too of that horrible complaint, rheumatism. To you, Mr. Editor, the necessity of these suggestions will be obvious; for the men who generally build this sort of property never have to live in them, and, in nine cases out of ten, build to sell; and the capitalist who may purchase ten or a dozen, or the poor frugal artisan who may purchase one, is alike taken in, as in a few years the road is above the sill of the door, and the water running into the house, instead of running out of it; and the damp, once in the walls, is perfectly incurable, and the tenant is obliged to leave; so that the landlord, instead of getting a fair interest for his capital, is saddled with the ground-rent and all other expenses, just because the ship has been spoilt for a half-penny worth of tar. T. B.

#### THE GUILDHALL LIBRARY.

We have before now referred to the very great value of the books, manuscripts, drawings, and plans which are stored up in the library at the Guildhall, and which at present are almost unused. We have never seen more than three or four readers, and that was at a time when the reading-room at the British Museum was closed. No one can be more attentive than these gentlemen who fill the post of librarian, but there is something here so quiet, so close,—something which it is so difficult to express, but which must have struck most readers who go to this place—you feel that the books are so little looked at, and the worthy librarian so little accustomed to visitors, that you are afraid of giving trouble. At the British Museum, one thinks nothing of sending up the tickets for fifty or sixty books in a day, and also availing oneself of the use at the same time of any of the 10,000 or 12,000 volumes which are in the reading-rooms.

The value of the Guildhall library is not sufficiently known, otherwise it would be more visited, a note from a common councilman, or any known functionary of the City, being sufficient for admission.

It has been recently determined (we are glad to hear) that measures are to be taken to make the City library more generally useful. A catalogue of such books as are proper to circulate is to be made out, and measures taken to lend certain volumes to the members of the corporation. This is well, so far as it goes, but it would be better to extend this privilege, under proper restrictions, to the families of respectable citizens generally, although not members of the corporation.

#### RE-NAMING THE STREETS.

As the author of a pamphlet on "Metropolitan Street Nomenclature," which by a portion of the press has been recommended as "well worthy the attention of the Metropolitan Board of Works," and concerning which I have a letter in my possession from a gentleman of the highest position, and capable of judging of such matters, wherein he says, "I am sure any one who reads your pamphlet will be satisfied that the present state of things ought not to exist longer than is absolutely necessary,"—I trust I may consider myself entitled to trespass briefly upon your columns, in reply to your remarks of last week upon this subject.

As my humble little work is addressed to the Postmaster-General, Sir Benjamin Hall, as Chief Commissioner of her Majesty's Board of Works, and the Metropolitan Board of Works, it is not likely that I should offer any remarks calculated to impede the working of this, at best, difficult subject: still I must say that the objections you have raised are with some justice applicable to the plan of meeting the evils, so loudly acknowledged, put forth by the Board.

You object (as an example) to the name suggested by the Board in the place of Great Queen-street,—



"Brougham." I am not surprised at this. There is no necessity for disturbing either Great or Little Queen streets: they are each specific names; but in my pamphlet I have suggested how to deal with the two classes of streets so frequently repeated, "King" and "Queen." By my plan the "memories of London" would not have been destroyed, but perpetuated. I have proposed to append to the several King and Queen streets (leaving those at Cheapside to remain) the names of the several kings and queens of England. I have a precedent for this. We have already the following:—King William, Henry, Edward, and John, streets: we might have James, Charles, Richard, Stephen, &c. Ann is the only instance in respect of the Queen street. According to my plan, Queen-street, Tower-hill, might be called Queen Jane-street: to the remainder we might append the names of Adelaide, Charlotte, Caroline, Mary, Elizabeth, Katherine, Eleanor, Henrietta, Bosdica, &c.: Queen-square, Bloomsbury, might remain, and to Queen square and place, Westminster, the name of Ann might, without confusion, be added.

There is another class of streets—Church-streets—about sixty-six in number,—numerous, it must be admitted,—but as they have reference to so many churches, and consequently localities, they are still not so numerous as the churches of the metropolis. In my plan I propose to prefix the localities, or names of the parish churches; as Paddington Church-street, Limehouse Church-street. Here again the "memories of London" would be preserved.

Another instance of reviving the recollections of London would follow from adopting my suggestions. I will give two. There is Queen's-road, Bayswater, recently so named, out of a false notion of loyalty. I would, in the revision, place that back to its original name, Black Lion-lane, so called formerly from the Black Lion Tavern, in the Bayswater-road. Several of the nobility, and royalty itself, do not disdain to reside in a lane (Park-lane); therefore the inhabitants of old Black Lion lane could have nothing to complain of. The other instance is in regard to Cambridge-road in the east, formerly called Dog-row, from a tavern named the Black Dog, which, too, is now altered to that of Albert. I need not say that this road should return to its original name.

If, as I have suggested, in undertaking this matter, the Board of Metropolitan Works had availed themselves, or were now to avail themselves, of the services of a few gentlemen of "historical knowledge, research, and taste," the "memories of London" would be revived, and an entire revision of the streets of London, such as the Legislature has at length placed in their hands, if judiciously managed, would (allowing ample time before the various changes were made) give in the long run general satisfaction.

Should you now, sir, take up my book, I beg to make this one observation,—it was written last September. The Post-office plan of dividing London into ten districts had not then been made known. Following my own notions, I had divided the metropolis into eight geographical districts, with the view of the retention of the names of the frequently-repeated streets, so that there should have been but one left standing in each district. Now the town is divided into ten districts, I should be inclined to forego that plan, and adopt that intimated by the Legislature, of having but one of each specifically named street in the metropolis. And so confident do I feel that such a plan is practicable, I would, as I have intimated to the Board of Works, readily undertake the task, satisfied that it requires only application and earnestness to effect it.

W. GALLAWAY.

\* \* The pamphlet referred to, which is published by Clements, 21, Little Pulteney-street, deserves attention. We repeat our exhortation to retain for the streets of London their associations.

#### A LECTURE ON ARCHITECTS.

"ENGLISH ARCHITECTS" formed the subject of a lecture delivered recently in Brighton, to the members of St. George's Instruction Society, by Mr. J. T. Bunce. The lecturer selected the lives of Inigo Jones, Sir Christopher Wren, and Sir John Vanbrugh, architects specially identified with the era of classical architecture in England. An additional attraction was found in the circumstance that these great men were distinguished for something beyond their mere profession. More interest, the lecturer thought, attached to Jones, the architect and deviser of masques, to Wren, the architect and philosopher, and to Vanbrugh, the architect and dramatist, than would have been felt for either had they been simply architects. The lecturer sketched the career of Inigo Jones; his birth in London, his journeys to Italy and D. Warwick, his employment in England by James I. to construct masques for the amusement of the Court, his numerous public and private buildings, his quarrel with Ben Jonson, his intimacy with Van-

dyke, and finally his disgrace by the Long Parliament, and his death. As Jones passed away, Wren was preparing to supply his place. Though a firm Royalist, and belonging to a family who suffered much for the Royal cause, Wren took no part in political affairs, but remained quietly at Oxford until the Restoration. The chequered and active life of Vanbrugh formed the next and last part of the lecture. He was considered in his triple character of an architect, a dramatist, and "a fine gentleman," audacious enough to undertake any project, and so able as in all to bring himself off with credit. His curious dispute with the Duchess of Marlborough was commented upon, and illustrated by quotations from the correspondence: his theatrical speculations were narrated: his ready assumption of the herald's tabard, though knowing nothing of heraldry, was alluded to: the sneers he endured from Pope, Walpole, and Swift were recounted; and the lecturer concluded with some critical remarks on his comedies.

#### Books Received.

*Wae Yang Jin: an Eight Months' Journal, during Visits to Loochoo, Japan, and Pootoo.* By ALFRED L. HALLORAN, Master, Royal Navy. London: Longman and Co. 1856.

THIS is the modest but entertaining "yarn" of a sailor. There is no attempt to dive under the surface of the strange and antiquated style of civilization to be met with in the far East; but even here, in the midst of light-spun narrative and amusement, there is much matter for reflection. How oddly ancient traditional practices and observances, habits and customs, in our own country, are associated with the Orientals of the present day. At Ningpo, as the author of this little work tells us, the Joss-houses, or temples, are not merely used for the ordinary religious ceremonies, or "Chin-chin to Joss," but one of these very chin-chins, or religious ceremonies, consists in play-acting. Here we have something exceedingly like the origin of our own theatrical entertainments, in the miracle-plays of ancient times. The Joss-houses appear to have a special stage and green-room set apart for the purpose. These Chinese temples are generally built with a square open court in the centre, and the principal gate is in the middle of the side nearest the street, with a smaller door, sometimes arched on the top, at each side. Right above the principal gateway, but opening inwards to the square, is the stage on which the religious plays are acted. There are two doors at the back which open into the green-room, and through the right-hand door the actor always enters, and through the left exits. The green-room contains usually splendid dresses, and most artistic false beards, moustaches, &c. Near the centre of the open square stands usually a very old iron censer or urn, in which incense is burned or offerings of "a sweet-smelling savour" made to Joss. In allusion to these ancient censers, the author himself observes that "it is remarkable, as showing the high antiquity of Chinese customs, that the vases in front of their ancient temples are very much like, both in shape and position, to some figures which appear in the representations of the ancient temples of Korschad, as given by Bonomi, in his work entitled, 'Nineveh and its Palaces,' page 164,—a fact brought to my attention by my friend J. Couch, Esq. F.L.S." At the back of the square court there is usually an altar, on which are placed images of Xin and Quey, the good and evil Joss, exactly alike, but the one white and the other black, the latter, in this respect at least, in strict accordance with our own nursery notions of the old "gentleman in black." The ceremonies observed at the altars struck the author forcibly from their close resemblance to the Roman Catholic Mass. There are open piazzas round two sides of the square, and the upper story of the Joss-house is provided with seats for the spectators, like the boxes of an English theatre.

In describing a temple at Pootoo, near Shanghai, with numerous idol chapels, and a mass of buildings, so intricate that only the resident monks could thread their way through them, the author says, "In the centre of one of the courts was an elegant and elaborately carved open-work screen, cut out of stone, with an extraordinary monster in the middle of it, representing a crocodile with a human face, in con-

flict with a large snake, whose folds were entwined round him." From an engraving of this really handsome screen, the open-work appears to be cut in the form of a modification of the Greek fret, which, as we have before noted, constitutes so frequent and remarkable an element in Eastern architecture. The open-work is gracefully entwined with representations of something like palm-leaves, with fruit resembling the pomegranate, and round the border are scrolls, and designs closely resembling the winged globe or disc of Egypt, but apparently intended for leaves and fruit.

"Wae Yang Jin" will be found a pleasant book to spend a leisure hour or two with.

*Laxton's Builders' Price-Book for 1857.* London: Arundel-street, Strand.

FOR the new edition (the thirty-fourth) of this now standard Price-Book, the index has been re-written; an index added to the Building Act, and an illustrated Appendix given, containing description and prices of new materials and inventions. There is also an account with prices, of seventy-eight building stones.

#### Miscellaneous.

THE SEWAGE OF PENRITH.—The Local Board of Health here are said to be in a fix as to how to get quit of the town sewage. The old Board had put the main sewer into the beck above Carleton-hall, so that the sewage passed through Mr. Cowper's farm-yard. He served the Board with process for a nuisance, but an understanding was come to that he (Mr. C.) would take the sewage if the Board would carry it to a certain point in his holme. The Board went to considerable expense, and were at last informed that Mr. Cowper declined to take the sewage. On the part of Mr. Cowper, it was stated at a meeting of the Board that he had, at his own expense, had Mr. Newlands down from Liverpool, and that Mr. Newlands told him that the ent was made far too low; that the tank would have to be on the surface of the ground, and would necessitate a wheel to be put into the river to pump off the sewage. A member of the Board said he believed Lord Londale would take it if the Board would carry it to him on the French Field estate. Another thought the best mode of getting rid of it was to run it into the river as they had done at Carlisle; and a third member said if they did so Lord Londale would bring an action against them. The Board finally agreed that the matter should remain *in statu quo* for a week.

A NEW MODE OF SMOTHERING SMOKE.—At Peudleton, the small fires of a bleach-works, as well as its large boiler furnace, are said to be now rid of black smoke by simply throwing over the replenishment of fuel a few spadefuls of a cheap mineral compound, which is said to absorb the carbon or blacks of the smoke, and to increase the heat and flame to a brilliant white. There is no saving of cost, it appears, but the ashes are expected to have some value. The process reminds one of the practice amongst cooks of sprinkling salt over a smoky fire to give it a clear flame, and also of the intensification of heat in fires by means of fire-clay balls, or lumps of chalk. Doubtless the substance used acts mainly, in its pulverulent state, by entangling the blacks and accumulating the heat in a way quite practicable with various earthy substances, not impregnated with poisonous volatiles, easily attainable in all parts of the country, and not restricted to any one district, or mineral alone.

AUSTRALIAN STONE.—The stone now being procured near the spot where the new Court-house is to be built, at Kilmore, says the *Kilmore (Australian) Examiner*, and with which it is intended to construct the base of that building, possesses the singular quality (upon being subjected to the action of fire), of melting like lead. During the process of fusion it becomes highly elastic. When suffered to cool, afterwards, it presents the appearance of coke on the inside, but on the outside it retains a shining black polish. It is no doubt impregnated with bituminous matter.

NENE VALLEY DRAINAGE WORKS.—The commissioners have appointed Mr. John Fowler, C.E. as their engineer-in-chief to carry on these works, originally commenced by the late Mr. Rendel, C.E.

EVILS OF DEFECTIVE CHURCH STOVES.—The congregation of St. Peter's, Dorset, says the *Dorset Chronicle*, on Sunday last, were well nigh suffering most seriously from the effects of a mismanaged stove. The poisonous gas, which was quickly spreading its dangerous influence, affected many persons, who tried to leave the church. Indeed, it is not easy to say what might have occurred had the rector not immediately dismissed the congregation.



**RECOVERY OF SUNKEN VESSELS, &c.**—A company, under the Limited Partnership Act, has been formed, with a capital of 60,000*l.* in 10*l.* shares, to carry out the patent of Capt. Stephenson Rendell Smith, for sub-marine purposes. Out of 1,141 wrecks and casualties in 1855 on the British coasts, 385 vessels were sunk without means of raising them. The power brought to bear in Capt. Smith's sub-marine lifting-apparatus is steam applied in two flat-bottomed iron vessels. The sunk vessel is sought for in deep water by the surveying apparatus, with divers on stages, with chain ladders, and drawn along by a screw-steamer, the chain ladders having on either side the ordinary air and speaking apparatus of divers. When the vessel is found, the flat-bottomed screw-vessels are placed one on each side, and powerful steam machinery, with crab-winch and chains are applied and worked with the help of a series of iron tubes passing from the deck of each lifter, through its central line, to the bottom, so that the lifting power is applied from the centre of each vessel without lurching or disturbing their vertical position, and by direct action and a dead pull upon the wreck or other weight to be lifted. When raised to a sufficient elevation it may be carried onward to a beach, or other destination, by the screw propellers of the lifters; or the wreck, it is said, can be floated by further processes.

**FALL OF PART OF A STUCCO CORNICE.**—As you kindly noticed my letter relative to the heavy overhanging cornice frequently observed on new buildings in the City, I beg to inform you that, passing through Fenchurch-street, on Christmas-day, I observed the attention of people leaving church, attracted to the building occupied by the Marine Life Insurance Society. It is a new building, with a heavy stucco cornice, a portion of the upper edge of which, about 6 feet in length, had fallen upon the footpath: the debris might weigh about half a cwt. Efforts should be made to check these monstrosities. As pleasing contrasts to them, and good examples to be followed, I beg to call attention to the new Mark-lane Chambers, and to a building recently erected at the Fleet-street end, and west side of Chancery-lane.—R. S. T.

**LECTURE ON LOCKS.**—Mr. E. B. Denison gave a lecture on locks lately at Doncaster, in which he reviewed the various principles of lock construction, concluding with an account of a new lock invented by himself, and of which he exhibited a specimen, manufactured by Mr. Obbb. In this lock, said the lecturer, the tumblers act without springs, being pushed one way by the handle which shoots the bolt, and the other way by the key. The key is not used for locking, so that the owner of a door with this lock may leave any person to lock it for him without entrusting him with the key. The tumblers have thin plates lying between them, and the friction, which is an impediment to the action of most locks, and sometimes makes them stick fast altogether when the lock gets dirty, is an assistance to this, and no high finish of the working parts is required. The key not having to move, the bolt may be very thin: the key of the large lock exhibited weighs just a quarter of an ounce. It pushes in a spring curtain, which closes the keyhole completely when the key is out; and when it is pushed in ever so little, it prevents the bolts from being pressed against the tumblers, there being a square plug behind the curtain, which goes through a notch in the edge of the bolt, except when the curtain is up against the keyhole. You must, then, not only turn the key about half round, but take it out again, before you can turn the handle and open the lock, and it cannot be opened while any instrument whatever remains in the keyhole. Mr. Denison added, that he did not know that the lock described was manufactured by anybody: he believed not, although it was not patented, and although it was stated on the authority of Mr. Hobbs, in his Treatise on Locks, to be secure against any known mode of picking.

**ROBERTS'S BRICK-MAKING MACHINE.**—The coarsest material, it is said, can be made into pressed bricks or tiles by Mr. John Roberts's invention. There is a circular track on which are fixed a series of cast-iron moulds at regular intervals, and a roller, which may vary in weight from one to ten tons, moves round on the track, by steam, or other power. This roller, or wheel, is connected with a shaft, which is moved in the frame by means of a shaft and cog-wheel. The clay or brick earth is filled into the moulds, and the roller presses it firmly in. The wheel is followed by a scraper, which removes any excess from the surface of the moulds, a smaller roller acting as a balance, to prevent the scraper from rising. On a pressing-plate, attached by hinges to the moulds, any design can be cast or engraved. This plate is turned down upon the clay in the moulds, and the wheel passes over it a second time, and raises the manufactured bricks from the moulds. Bricks of any pattern, it is said, can be manufactured by this machine, and any design can be readily impressed upon them. Encaustic tiles, or tessere, by slight modifications, can be also made.

**"LIQUID STONE."**—A Mr. Hardinge, of New York, has patented the manufacture of what he very correctly calls "liquid stone." Quartz rock is roasted, and then made friable in cold water. It is then pulverised, and thrown into a peculiar steam-tight cauldron, containing caustic lye. Here it is acted upon by steam heat and the chemical solvent, and brought to a state of solution. When this solved silicate is applied to any substance, its water of solution evaporates, leaving a coat of crystal glass. In fact, it seems to be mainly a silicate of potash, or soda, such as was known and made centuries since. See "Salmon's Polygraphies" on "liquor or oil of flints." Quartz rock, and sand, or flint, are almost convertible terms for siliceous, and this, when roasted and calcined, can readily with potash form a soluble silicate, which in aqueous solution has an oily or gummy aspect, and was hence, of old, called "oil of flints," and sometimes "oil of crystals," quartz or siliceous having been formerly called "crystals."

**MANCHESTER EXHIBITIONS.**—The exhibition of modern paintings at the Royal Manchester Institution, which has recently been closed, was open for seventeen weeks—seven at one shilling, when 4,174 persons paid for admission; and ten weeks at sixpence, when the visitors numbered 8,507. In the evening the exhibition was open during ten weeks at threepence, when 8,484 persons inspected the works of art. There were also 178 season tickets sold. Upwards of 16,000 visits were made to the exhibition,—a large number, but not equal, says the *Courier*, to previous years. The number of catalogues sold was 2,642 in the evening, at threepence, and 3,180 in the day, at sixpence. Thirty-one pictures have been sold in the rooms, and twenty taken by the Art-Union.—The number of visitors at the Manchester Mechanics' Institution Exhibition on New Year's Day was 6,000. An excursion train from Sheffield brought 1,000 visitors. Nearly 1,000 catalogues were sold during the day.

**CHURCH BURNT AT MONTREAL.**—Christ Church, the Protestant Episcopal Cathedral, in Montreal, was destroyed by fire on the 10th ult. A dry goods store and the nuns' building adjoining were also somewhat injured. The church was thought to be one of the most elegant and costly buildings in Canada. The damage by the fire is estimated at 120,000 dollars: the insurance is 68,000 dollars. The church possessed an organ nearly as large as that of Haarlem, in Holland.

**ARTISTS' AND AMATEURS' CONVENTION.**—At Willis's Rooms, King-street, St. James's, this annual series of artistic *conversations* are shortly to be held, the first on Thursday, the 5th February; the second on Thursday, the 5th of March; the third on Thursday, the 2nd of April; and the last on Thursday, the 7th of May. The annual subscription from each member is 1*l.*, which entitles the member, besides his own personal admission to the meetings, to four visitors' tickets of admission, each admitting one visitor to a single meeting only; but members are at liberty to issue as many tickets as they please for one meeting, subject to further subscriptions of one guinea for six additional visitors' tickets, and half a guinea for three.

**THE RIVINGTON WATER AT LIVERPOOL.**—The Rivington water is at length being delivered into the Kensington reservoir, says a local paper of end of last week, and very few days, if indeed hours, will elapse before the inhabitants will have an opportunity of judging for themselves as to the quality of the water, about which so much has been said, and respecting which there has been such an unparalleled local agitation.

**ENGLISH CHURCHES AT CAIRO AND ALEXANDRIA.**—Subscription lists have been opened at Cairo for collecting funds to be applied to the erection of an English Episcopal Church. Everything seems to denote that the requisite means will soon be provided. Little or no assistance is expected from Alexandria, where the English are still striving to obtain funds to build the temple of their church. At least 12,000*l.* have been spent there for building the church, and the result, it is said, is an incomplete edifice, with sittings for only 180 or 200 persons.

**RE OPENING OF THE COLOSSEUM.**—Under the auspices of a limited company, the Royal Colosseum, Regent's-park, with all its varied attractions, has been re-opened, under the patronage of Her Majesty and the Prince Consort. Mr. Parris's remarkable picture of "London by Day" is exhibited in the morning, and Mr. Danson's "London by Night" in the evening as before, and the Lisbon panoramas, the Apollonicon, the Swiss cottages, and scenery, stalactite caverns, Greek saloon, conservatories, aviary, &c. &c. are all resuscitated, none the worse for their recent entombment, the whole exhibition being graced by music, instrumental and vocal, discoursed by the Crystal Palace Orchestra and Orphans Glee Union, and wound up by grand pyrotechnic displays, all for the certainly exceedingly small charge of one shilling.

**LOW CONTRACTS.**—At the Alfreton County Court on the 23rd ult. a case between a contractor and certain overseers was tried. The plaintiff, Mr. James Andrews, claimed 42*l.* 18*s.* 3*d.* for work done in the erection of a bridge across the river Erewash, belonging to the parishes of Pinxton and Salston. It appeared from plaintiff's evidence that the defendants (overseers for the two parishes) invited three tenders for rebuilding the bridge, and that his tender of 36*l.* 10*s.* was accepted by them without any written plan or specification, but that they verbally agreed the bridge should be rebuilt exactly the same as the old bridge was. Defendants had been several times while the works were in progress, and also expressed approval. At length, on the 22nd of September last, plaintiff received a note from defendants discharging him from further proceeding with the bridge (on the ground that great complaints had been made as to it): at that time two or three days would have completed it. He now claimed 42*l.* 18*s.* 3*d.* as the value of the work, with damages for delay, &c. Mr. Benjamin Wilson, architect, Alfreton, one of plaintiff's own witnesses, said, had he had the superintendence of the work, he could not have passed it as a good sound job, but that he thought there was already too much work done for the money. Mr. George Hall, architect, Derby, agreed with Mr. Wilson. For the defence it was contended that the verbal agreement had not been fulfilled, and that the bridge was not safe for traffic. Mr. Barber, architect, Eastwood, and others, were called to prove that the bridge was unsound. Mr. Barber, in cross-examination, said he did not consider the bridge worth thirty-six shillings, but admitted there might be some 6,000 new bricks, and as many old. The Judge, Mr. Cantrell, said he was surprised that the defendants should have let a contract belonging to the parishes in so loose a manner, and that for the sake of saving a few pounds in employing an architect, they had incurred all this expense and trouble. In his opinion also the plaintiff and Mr. Wilson had adopted every reasonable and proper course to avoid litigation. The judgment he should give was 28*l.* with all costs, to be paid forthwith.

**GIGANTIC IRON-CASTING NEAR GLASGOW.**—On the 30th ultimo, at seven a.m. sixty tons of pig iron were put into the enpsols of Finnieston Iron-works, and by four o'clock of the same day this enormous mass of metal was poured into the mould. This mould contained in one mass the engine bottom of a colossus steamer, including two condensers, two chambers to receive the air pumps, as well as feed and bilge pumps and pillow block for main shafts. The length of the mass which had to be cast was 24 feet 6 inches, the breadth 10 feet 6 inches, and the height 9 feet. The casting, when taken from the mould, in the course of six or seven days, will be 47 tons 10 cwt. "Let our readers," says a Glasgow paper, "imagine this mass of iron thrown into the mould—sixty tons in all—pouring in a torrent which is exhausted in one minute and forty-five seconds, and they will have some idea of a work which all the iron-workers in England refused,—the like of which none of the ironmasters in England ever saw [nonsense],—and which was accomplished as an everyday job, under the superintendence of Mr. John Neilson. We have only further to add, that this is the second casting of the same kind in the same work, and the engines for which it was cast are to be fitted up for the new Australian line of steam vessels, by Messrs. J. and J. Thomson, of Clyde Bank."

**A JOSS-HOUSE IN VICTORIA.**—One of the most striking and remarkable recent events, says the *Melbourne Argus*, was the consecration of a joss-house for the use of the Chinese residents in this city and its suburbs. The wooden edifice in which this singular ceremony took place has been erected and decorated, at a cost of about 1,000*l.* on an elevated plot of ground, some distance beyond the Orphan Asylum, at Emerald-hill. The temple is from 60 to 70 feet in length, and about 35 feet in width. It has two stories, the lower one being apparently that which is devoted to religious ceremonies. The upper story is surrounded by a gallery, lighted from the roof, and is apparently set apart as an assembly-hall. The whole interior is painted and ornamented in the Chinese style, and hung round with banners. In the lower story is a picture enclosed in a carved case, and to this all the external ceremonies of adoration were paid. The painting consists of three figures, the centre one being that of an old man of reverend appearance, and in a sitting posture: on one side of him stands a young man, and on the other a man of mature years.

**HASTINGS BOARD OF HEALTH.**—The Local Council and Board of Health have determined on carrying out and completing the extensive works of sewerage and drainage of the town. At the usual monthly meeting held on Friday in last week, the surveyor, Mr. John Laing, C.E. presented the plans for divisions B and C, which were approved of, and it was ordered that tenders should be advertised for.



# The Builder.

VOL. XV.—No. 728.

**B**Y accustoming the eye to fine forms, by comparing and weighing, the taste is formed, the judgment is strengthened. The opportunity for this should be afforded to the whole nation,—must be afforded, if we would raise the general taste. It is in this point of view that such a collection as that purchased from M. Soulagès, and now to be seen in Marlborough House, is especially valuable. We have not merely to act on our artists and manufacturers, but on the public, who put these artists and manufacturers in motion. It is to be hoped the collection will be retained for the country. The council of the Institute of British Architects, recognizing the value of such works, have appointed a committee of their body (excluding from it such of their members as may have aided in bringing it to this country) to examine and report upon it, with the view of memorializing Government, if it should be thought desirable to urge its purchase for the nation.

The remainder of the catalogue, by Mr. J. C. Robinson, is published, so that the whole collection can now be examined with his light. We have already given some general particulars, and may now refer to two or three specialties. The specimens of Majolica ware are particularly fine; and there are two good specimens of Della Robbia ware, sculpture in terra-cotta, which lead up to it. The great point achieved by Luca della Robbia was in glazing clay sculpture with a white enamel, which gave it the durability and brilliancy of marble. Some say he merely re-applied a process employed by the Arabs long before. In either case he greatly benefited architecture; for his works were eagerly applied in the decoration of churches and other buildings. He afterwards found a method of colouring his white enamel. His brothers, and then his sons, aided him. Mr. Robinson, who gives Luca a more recent date than Vasari does,\* and is disposed to consider the glaze was generally used in Luca's time, says,—

"It is moreover, highly probable, that others, besides Della Robbia, were, during the quattrocento period, in the habit of executing similar enamelled sculptures. Evidence to this effect is indeed indirectly given in Baldinucci, and more recently in the notes to the life of Della Robbia, appended to the edition of Vasari now in process of publication at Florence (*"Vite dei pittori, &c. di Giorgio Vasari, pubblicate per cura di una società di amatori delle arti belle. Firenze, 1846, &c."*), and that, in consequence, the secret of the enamel covering and its application was not exclusively confined to the Della Robbia family, as pretended by Vasari: many concurrent circumstances, indeed, leave little doubt on this point. It seems at any rate impossible to draw any other conclusion from the fact, that the stanniferous enamel was everywhere in Italy, during the fifteenth century, currently applied as a covering to clay in the shape of plates and vases: its application, to reliefs in the same material, could not therefore have remained a mystery."

The Majolica were followed, whether imitated from this, aided by the Moorish workmen, or, altogether from that brought from Majorca, it is unnecessary for us to determine.

The present collection is remarkable for a particular class of Majolica wares,—the lustered specimens, and particularly those of the most celebrated producer of this kind of work, Maestro Giorgio, of Gubbio.

The personal information we possess concerning Giorgio may be condensed as follows:—"Giorgio Andreoli, a gentleman of Pavia, already ennobled in his native place, migrated to Gubbio with his two brothers, towards the close of the fifteenth century; and in or about the year 1498 obtained the rights of citizenship at the latter place: he acquired a high position, and filled many offices of trust in his adopted city, and is said to have been living in 1552. Giorgio had two sons, one of whom only, Vincenzio, called Maestro Cencio, followed his father's profession.

The earliest date with the signature of the Master on Giorgio's wares hitherto observed by the writer, is 1518, and the latest, 1537. The Pasolini Collection (now dispersed) contained a piece purporting to have been signed by the Master, and dated 1541. This instance, however, cannot be implicitly relied on."

During the fifteenth, sixteenth, and, in a less degree, in the seventeenth century, Majolica ware, of which before we have often spoken, was a great staple manufacture of Italy. Manufactories were fostered by princes, and the artists enjoyed widely extended reputation. Faenza, Urbino, Castel Durante, Gubbio, Pesaro, all cities comprised within a limited district lying towards the east coasts of Italy, are the five great centres of the manufacture. As to the lustered specimens, let us say that the metallic lustres are simply various pigments, in reality metals, deposited or painted on the surface of the ware in a state of solution; the beautiful iridescent lustre resulting in some manner, not easily explained, from peculiar atomic arrangement. Strange to say, the attempts of modern chemists and manufacturers to re-produce some of the most remarkable have hitherto almost uniformly failed!

Of the ordinary Majolica ware there are some remarkably fine and interesting specimens. Of the latter class is No. 9, a large plateau, with a portrait of the painter Pietro Perugino, on a deep blue background, dating about 1520, which must be regarded as a unique piece.

No. 88—a small ewer, date about 1540-50—is an exquisite specimen of the Urbino manufacture. "Neither Sèvres nor Dresden," says the editor of the Catalogue, "has ever produced in porcelain any thing finer in respect of glaze and colour. Pieces like this, which combine almost every excellence which the Ceramic art is capable of displaying, are those on which the reputations of the ancient Maestri were justly founded—reputations acquired not in the character of artists, but of potters."

No. 144 is a singularly fine oval ewer of Palissy ware—an exquisite specimen.

We may not, however, give more space to this department: let us look at the specimens of Venetian Glass, which exhibit a great variety of forms, modes of decoration, and manipulatory processes.

Apparently there are few specimens of Venetian glass extant of an earlier date than the end of the fifteenth century; though the manufacture of glass there dates from a very early period, certainly from the end of the thirteenth century, and the state took special interest in the progress of the art. For several centuries the republic received immense sums of money from the rest of the world for its glass. At the end of the fifteenth or beginning of the sixteenth century, the Venetian glass-makers introduced the mode of decorating vases with *filigree* of glass. They had other inventions, too, also of their own.

The following definitions given in the catalogue, of a few prominent varieties and processes, may interest those to whom the subject is entirely new:—"First 'Laticinio,' or filigree glass, of which there is a great diversity of patterns, is characterized by coloured threads (generally opaque milk-white, hence the word 'Laticinio'), included in the mass of transparent glass, which, by various methods of manipulation, are twisted or woven as it were, into regular spiral or reticulated patterns, producing, in some specimens, a kind of network of delicate lines spread over the piece ('vitro di trina,' or lacework glass): this latter term, however, is generally applied to specimens in which the white threads are crossed at an angle, forming lozenge-shaped compartments, each of which sometimes contains a small air-bubble. 'Millefiore' glass has a rich variegated appearance, exhibiting an infinity of eccentric patterns, stars, circles, &c. produced by mingling small cylindrical pieces of various coloured flint glass, cut from thin rods, with the melted mass from which the vessels are blown. 'Schmelze,' and Schmelze-Avanturine: the former of these varieties is a semi-opaque glass of a rich variegated brown, green, or bluish colour, which, when seen through by transmitted light, takes a deep blood-red tint. Patches or globules of gold, sometimes seen on the surface of this kind of glass, constitute the schmelze-avanturine. The 'Avanturine' is obtained by mingling metallic filings or levigated leaf-gold with melted glass, in the mass of which it is seen suspended in the shape of brilliant particles."

One of the causes of the progress of the art in Venice is to be found in the position which was given to those who practised it. The Venetian patricians might marry the daughters of the master glass-makers without derogating in any manner from their dignity. Further, when Henry III. went to Venice, in 1273, he granted nobility to all the master glass-makers of Murano.\*

Passing over the works in bronze, to some of which we have already alluded, the other metal works (including a wonderful knocker), the medals, and tapestry, we are brought to the decorative furniture, which includes almost all that was used in an Italian house of the sixteenth century. The chairs and the mirror-frames must be especially noticed. Several of the carved cabinets are also remarkable works of their kind,—but it is not the best kind. The piece of furniture we call a Cabinet appears to have originated in Germany, in the latter half of the sixteenth century, and was called *Kunstschrank*, or art-cabinet. It was architectural in its form, and artists of all kinds co-operated in its decoration. There is a specimen in the Chamber of Arts, at Berlin, made in 1610, which was designed by Hainhofer, the architect, executed chiefly by the well-known Ulrich Baumgartner, and on which twenty-five various artists, whose names are all recorded, worked. The cost of these productions was necessarily very great, and their value now is even greater. Our readers may perhaps remember that for the mahogany and ornolu cabinet exhibited by her Majesty at Gore House, Kensington, two or three years ago, a dealer would gladly have given 4,000*l.* simply because he knew that the Marquis of Hertford, or some other great collector, would have given him a larger sum for it.

The value of artistic furniture appears to be increasing every day. We bear that even in Warwick Castle, always a show place, and known to contain objects of great interest and beauty, a well-known dealer in rare objects has recently astounded its noble owner by the value put by him on various tables, dishes, and cabinets, comparatively little cared for; information which will probably lead to the examination and re-arrangement of all the collection.

\* Lohstedt's "Art of the Middle Ages."

\* Mr. Robinson says he was born in 1800 or 1805, and died in 1851. Vasari, in his first edition, says he was born in 1355, in the second, 1355.



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#### ATHENS.

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and drawn, that convinced the most sceptical of the deep importance of the subject, and the surpassing merit of the work.

Ancient Athens was divided into three parts: the Acropolis (*ἡ Ἀκρόπολις*), the *Asy* (*τὸ Ἄστυ*), and the port-towns, Piræus, Munychia, and Phalerum. From the original limits of the city being confined to the Acropolis, it was frequently termed *Πολις* by Greek writers. The *Asy* signified the upper town, in contradistinction to the sea-ports or lower town, and therefore included the *Πολις*. Sometimes, however, it is called the lower city (*ἡ κάτω πόλις*), as opposed to the Acropolis, or upper city. Piræus and Munychia were surrounded by the same fortifications, and united to the *Asy* by the long walls. Phalerum, the ancient port-town of Attica, was also united for a time by the Phalaric wall. The position of the walls of the *Asy* has occasioned much discussion. The two able topographers, Leake and Forchhammer, are at issue; for whilst the former supposes that the walls of Themistocles ran from the gate *Dipylum* across the crest of the hills of the Nymphs, the *Pnyx*, and the Museum, and then north of the Ilissus, which would thus have flowed outside the walls; the latter, on the other hand, maintains that the remains visible on the line described do not belong to the walls of Themistocles, but to fortifications of a later period; probably those erected by Valerian, when the population of the city had diminished. In proof of the greater extent of the walls of Themistocles, numerous considerations are adduced in Dr. Smith's "Geographical Dictionary," based upon the descriptions of Thucydides, Xenophon, Pausanias, &c. and inductive reasonings of much weight; the conclusion arrived at being, that the walls of Themistocles extended from the gate called *Dipylum*, along the western descent of the hills called *Pnyx* and Museum, including both those hills within their circuit; that they then crossed the Ilissus near the western end of the Museum, and ran along the heights on the left of the river, including Ardetus and the Stadium within the city; after which, making a turn to the north, they again crossed the Ilissus, and leaving Mount Lycabettus on the east, they ran in a semicircular direction till they rejoined the *Dipylum*.

It may seem at first sight startling that no traces of the walls of Themistocles remain, but a little reflection will remind us that the walls and huge buildings of numerous other cities of antiquity have been as completely obliterated.

It is impossible to determine the exact population of Athens. It is stated by Thucydides and Xenophon to have been the most populous city of Greece, and the latter says that it contained more than 10,000 houses. In the "Fasti Hellenici" will be found all that can be said upon the subject.

The position of most of the gates of Athens is doubtful. On the west side were the *Διπύλον*, originally called the *Θηλαία Πύλαι* (leading to Thria, near Eleusis), called also the *Κεραμικαὶ Πύλαι* (communicating between the inner and outer Cerameicus, at the north-west corner of the city; south of that were the Sacred Gate (*αἱ Ἱεραὶ Πύλαι*), which terminated the Sacred Way to Eleusis and the Peiraic Gate (*ἡ Πειραικὴ Πύλη*) from which ran the carriage-road between the long walls to the Piræus. At the south-west corner was the Melitian Gate (*Μελιτινὴ Πύλη*), leading to Melite. On the south side was the Ionian Gate (*αἱ Ἰωνικαὶ Πύλαι*), leading to Phalerum. On the east side were the Gate of Diochares (*αἱ Διοχάρους Πύλαι*), leading to the Lyceum, and the Diomeian Gate (*αἱ Διομήναι Πύλαι*), leading to Diomeia. On the north side were the Herian Gate (*αἱ Ἡρίαι Πύλαι*), or Gate of the Dead, the Acharnian Gate (*αἱ Ἀχαρνικαὶ Πύλαι*), leading to Acharna, the Equestrian Gate (*αἱ Ἰππικαὶ Πύλαι*), and the Gate of Ægeus (*αἱ Ἀιγέως Πύλαι*). Besides these, were others whose names are unknown.

It would appear that during the time of Athens' greatest eminence in arms and arts, her private houses were mean and unadorned, in striking contrast to the magnificence of the public buildings: the same sentiment of patriotism which made an Athenian devote his life to the public good, rendering him also careless of private luxury. It was at a later period, when public spirit had declined, that the

\* See p. 2, ante.



## ATHENS.



FIG. 1.—Ruins of the Olympieion.



FIG. 2.—The Acropolis Restored.



FIG. 3.—The Erechtheion Restored; viewed from the north-west angle.

The conclusion arrived at from the scant passages of Homer are the same, with the difference only of the women's apartments being on an upper floor, and with the addition of a great court in front of the house. But the whole of the information we possess on this subject is discussed in Dr. Smith's "Dictionary of Greek and Roman Antiquities."\* One inference is plain, that it was in their public buildings alone that their architectural grandeur consisted.

According to the position of the walls of the *Asty* as we have described, and as shown in Dr. Smith's plan, the Acropolis stood in the centre of the city. Within its space was concentrated all that art could offer. It was to this revered sanctuary that the Panathenaic procession moved its majestic length once in four years, its chief object being to carry the *peplos*, or embroidered robe, to the goddess *Athena Polias* in the Erechtheion, as contradistinguished to *Athena of the Parthenon*.

The Acropolis (fig. 2) being a citadel, was fortified, the original walls being ascribed to the Pelasgi, and after its capture and destruction by the Persians, the foundations no doubt remained, and the name Pelasgic continued to be applied to a portion of the fortifications to a late period. When the Athenians returned to their city, after the Persian occupation, they commenced the restoration of the walls of the Acropolis and of the *Asty*. The road up the western slope of the Acropolis led from the Agora, and was paved with slabs of Pentelic marble. At the summit, Pericles caused a suitable entrance (*Προπύλαια*), to be erected by the architect Mnesicles, which resulted in the building known as the Propylaea. We need not recapitulate the well-known features of this building—its two Doric hexastyle porticos facing eastward and westward, with their central ditriglyph intercolumniation,—the two unequal wings, with their porticos in antis, facing each other,—the marble ceiling of the west portico, 50 feet deep, supported upon its six elegant Ionic columns, &c. There is no sculpture forming part of the design of the Propylaea. "The present ruined state of the whole," says the dictionary of the Architectural Publication Society, "is owing to its position, which necessarily made it a fortress from the Middle Ages, till the time of the War of Liberation, during the progress of which both the Propylaea and the vast portico of the Parthenon suffered deplorably."

The little Ionic amphiprostyle tetrastyle temple of *Nike Apteros*, on the west front of the south wing, though existing in 1676, has since been utterly destroyed, nothing remaining but some traces of its foundations, fragments of its masonry, and four slabs of its sculptured frieze, now in the British Museum. The subsequent discovery of its stones and most of the frieze have led to its re-construction on the original site. On the western front of the northern wing of the Propylaea, stands at present a lofty pedestal, 27 feet square, which from its size, probably supported equestrian figures, and agrees with a passage in Pausanias, descriptive of such.

Towering in proportions as in locality over the rest of the Acropolis, stood the Parthenon (*Παρθενών*), the Temple of the Virgin Goddess *Athena*, built of Pentelic marble, and standing upon a basement of limestone. Its cella was amphiprostyle, and divided into two parts, the naos and opisthodomos, separated by a wall. In the naos was the Chryselephantine statue of *Minerva* by Phidias, and round it a row of twenty-three Doric columns formed aisles, the light being obtained from the roof. In the opisthodomos were four columns supporting the roof, probably of the Ionic order. The whole number of external columns was forty-six. The sculpture in the pediments represents the birth of *Athena* from the head of *Zeus*, and the contest of *Athena* and *Poseidon* for the land of Attica. The ninety-two metopes of the frieze contained, in high relief, the exploits of *Minerva*, the wars with the Centaurs and Lapithæ, and other subjects. The continuous frieze round the cella, beneath the ceiling of the peripteros,

\* Published by Taylor, Walton and Maberly, and Murray, and already mentioned.

domestic architecture of Athens became more cultivated. "Formerly," says Demosthenes, "the public had abundant wealth, but no individual raised himself above the multitude. If any one of us could now see the houses of Themistocles, Aristides, Cimon, or the famous men of those days, he would perceive that they were not more magnificent than those of ordinary persons, while the buildings of the State are of such number and magnitude that they cannot be surpassed."

The only regular account we possess of the arrangement of the Greek house, and that is but short and unsatisfactory; and the epoch to which such description might apply is wrapped in doubt. Much difference existed between the town and country house, but there were two leading features in all the houses of superior class, namely, one or more open courts surrounded by rooms, and the division of the house into two portions, namely the *Ανδρώνιτις* for men, and the *γυναικωνίτις* for women. These divisions were on the same floor.

In book vi. chap. 10, of Vitruvius, is found



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Stuart may be justly considered the father of Greek architecture in England; and the nice feeling evinced in the restoration of the original forms out of the crumbling and faded materials before him, proved how well he was adapted for the task he had set himself. Of the four volumes comprising his work, only the first (in 1762) was published by himself; the second did not appear till 1787; the third in 1794; and the fourth in 1816. The first volume was well calculated to excite public interest in this labour of classic revival, containing, as it did, a specimen of each of the Greek orders;—in the Doric porcio of the Agora, in the exquisite Ionic temple on the Ilissus, in the ruins of the Corinthian Stoa, and in the charming creations of the Choric monument of Lysicrates, and the octagon tower of Andronicus Cyrrhestes. But it was the second volume, containing the Parthenon, in its matchless proportions, its sculptured metopes, and the remains of the continuous frieze of the peripterus; the remains of the Temple of Jupiter Olympius; the Choric monument of Thrasylus; and the Propylæa, which last was added to the volume by the Dilettanti Society, for whom it was measured

and drawn, that convinced the most sceptical of the deep importance of the subject, and the surpassing merit of the work.

Ancient Athens was divided into three parts: the Acropolis (*ἡ Ἀκρόπολις*), the Asy (*τὸ Ἄστυ*), and the port-towns, Piræus, Munychia, and Phalerum. From the original limits of the city being confined to the Acropolis, it was frequently termed *Πόλις* by Greek writers. The Asy signified the upper town, in contradistinction to the sea-ports or lower town, and therefore included the *Πόλις*. Sometimes, however, it is called the lower city (*ἡ κάτω πόλις*), as opposed to the Acropolis, or upper city. Piræus and Munychia were surrounded by the same fortifications, and united to the Asy by the long walls. Phalerum, the ancient port-town of Attica, was also united for a time by the Phaleric wall. The position of the walls of the Asy has occasioned much discussion. The two able topographers, Leake and Forchhammer, are at issue; for whilst the former supposes that the walls of Themistocles ran from the gate Dipylum across the crest of the hills of the Nymphs, the Pnyx, and the Museum, and then north of the Ilissus, which would thus have flowed outside the walls; the latter, on the other hand, maintains that the remains visible on the line described do not belong to the walls of Themistocles, but to fortifications of a later period; probably those erected by Valerian, when the population of the city had diminished. In proof of the greater extent of the walls of Themistocles, numerous considerations are adduced in Dr. Smith's "Geographical Dictionary," based upon the descriptions of Thucydides, Xenophon, Pausanias, &c. and inductive reasonings of much weight; the conclusion arrived at being, that the walls of Themistocles extended from the gate called Dipylum, along the western descent of the hills called Pnyx and Museum, including both those hills within their circuit; that they then crossed the Ilissus near the western end of the Museum, and ran along the heights on the left of the river, including Ardetus and the Stadium within the city; again, making a turn to the north, they again crossed the Ilissus, and leaving Mount Lycabettus on the east, they ran in a semicircular direction till they rejoined the Dipylum.

It may seem at first sight startling that no traces of the walls of Themistocles remain, but a little reflection will remind us that the walls and huge buildings of numerous other cities of antiquity have been as completely obliterated.

It is impossible to determine the exact population of Athens. It is stated by Thucydides and Xenophon to have been the most populous city of Greece, and the latter says that it contained more than 10,000 houses. In the "Festi Hellenici" will be found all that can be said upon the subject.

The position of most of the gates of Athens is doubtful. On the west side were the *Διπύλων*, originally called the *Θηναίων Πύλαι* (leading to Thiria, near Eleusis), called also the *Κεραμικαὶ Πύλαι* (communicating between the inner and outer Cerameicus, at the north-west corner of the city; south of that were the Sacred Gate (*αἱ Ἱεραὶ Πύλαι*), which terminated the Sacred Way to Eleusis and the Peiraic Gate (*ἡ Πειραικὴ Πύλη*) from which ran the carriage-road between the long walls to the Piræus. At the south-west corner was the Melitian Gate (*Μελιτιδῆς Πύλη*), leading to Melite. On the south side was the Itonian Gate (*αἱ Ἰωνίαι Πύλαι*), leading to Phalerum. On the east side were the Gate of Diochares (*αἱ Διοχάρους Πύλαι*), leading to the Lyceum, and the Diomeian Gate (*αἱ Διομήτειας Πύλαι*), leading to Diomeia. On the north side were the Herian Gate (*αἱ Ἡρίαι Πύλαι*), or Gate of the Dead, the Acharnian Gate (*αἱ Ἀχαρναϊκὴ Πύλαι*), leading to Acharna, the Equestrian Gate (*αἱ Ἱππικαὶ Πύλαι*), and the Gate of Ægeus (*αἱ Ἀιγίου Πύλαι*). Besides these, were others whose names are unknown.

It would appear that during the time of Athens' greatest eminence in arms and arts, her private houses were mean and unadorned, in striking contrast to the magnificence of the public buildings: the same sentiment of patriotism which made an Athenian devote his life to the public good, rendering him also careless of private luxury. It was at a later period, when public spirit had declined, that the

\* See p. 2, ante.



## ATHENS.



FIG. 1.—Ruins of the Olympieum.



FIG. 2.—The Acropolis Restored.



FIG. 3.—The Erechtheum Restored; viewed from the north-west angle.

domestic architecture of Athens became more cultivated. "Formerly," says Demosthenes, "the public had abundant wealth, but no individual raised himself above the multitude. If any one of us could now see the houses of Themistocles, Aristides, Cimon, or the famous men of those days, he would perceive that they were not more magnificent than those of ordinary persons, while the buildings of the State are of such number and magnitude that they cannot be surpassed."

In book vi. chap. 10, of Vitruvius, is found

the only regular account we possess of the arrangement of the Greek house, and that is but short and unsatisfactory; and the epoch to which such description might apply is wrapped in doubt. Much difference existed between the town and country house, but there were two leading features in all the houses of superior class, namely, one or more open courts surrounded by rooms, and the division of the house into two portions, namely the *Andronitis* for men, and the *Gynaikitis* for women. These divisions were on the same floor.

The conclusion arrived at from the scant passages of Homer are the same, with the difference only of the women's apartments being on an upper floor, and with the addition of a great court in front of the house. But the whole of the information we possess on this subject is discussed in Dr. Smith's "Dictionary of Greek and Roman Antiquities."\* One inference is plain, that it was in their public buildings alone that their architectural grandeur consisted.

According to the position of the walls of the *Asty* as we have described, and as shown in Dr. Smith's plan, the Acropolis stood in the centre of the city. Within its space was concentrated all that art could offer. It was to this revered sanctuary that the Panathenaic procession moved its majestic length once in four years, its chief object being to carry the *peplos*, or embroidered robe, to the goddess *Athena Polias* in the Erechtheum, as contradistinguished to *Athena* of the Parthenon.

The Acropolis (fig. 2) being a citadel, was fortified, the original walls being ascribed to the Pelagii, and after its capture and destruction by the Persians, the foundations no doubt remained, and the name Pelasgic continued to be applied to a portion of the fortifications to a late period. When the Athenians returned to their city, after the Persian occupation, they commenced the restoration of the walls of the Acropolis and of the *Asty*. The road up the western slope of the Acropolis led from the Agora, and was paved with slabs of Pentelic marble. At the summit, Pericles caused a suitable entrance (*Propylæa*), to be erected by the architect Mnesicles, which resulted in the building known as the Propylæa. We need not recapitulate the well-known features of this building—its two Doric hexastyle porticos facing eastward and westward, with their central ditriglyph intercolumniation,—the two unequal wings, with their porticos in antis, facing each other,—the marble ceiling of the west portico, 50 feet deep, supported upon its six elegant Ionic columns, &c. There is no sculpture forming part of the design of the Propylæa. "The present ruined state of the whole," says the dictionary of the Architectural Publication Society, "is owing to its position, which necessarily made it a fortress from the Middle Ages, till the time of the War of Liberation, during the progress of which both the Propylæa and the vast portico of the Parthenon suffered deplorably."

The little Ionic amphiprostyle tetrastyle temple of *Nike Apteros*, on the west front of the south wing, though existing in 1676, has since been utterly destroyed, nothing remaining but some traces of its foundations, fragments of its masonry, and four slabs of its sculptured frieze, now in the British Museum. The subsequent discovery of its stones and most of the frieze have led to its re-construction on the original site. On the western front of the northern wing of the Propylæa, stands at present a lofty pedestal, 27 feet square, which from its size, probably supported equestrian figures, and agrees with a passage in Pausanias, descriptive of such.

Towering in proportions as in locality over the rest of the Acropolis, stood the Parthenon (*Ἄρθρον*), the Temple of the Virgin Goddess *Athena*, built of Pentelic marble, and standing upon a basement of limestone. Its cella was amphiprostyle, and divided into two parts, the naos and opisthodomos, separated by a wall. In the naos was the Chryselephantine statue of *Minerva* by *Phidias*, and round it a row of twenty-three Doric columns formed aisles, the light being obtained from the roof. In the opisthodomos were four columns supporting the roof, probably of the Ionic order. The whole number of external columns was forty-six. The sculpture in the pediments represents the birth of *Athena* from the head of *Zeus*, and the contest of *Athena* and *Poseidon* for the land of Attica. The ninety-two metopes of the frieze contained, in high relief, the exploits of *Minerva*, the wars with the Centaurs and Lapithæ, and other subjects. The continuous frieze round the cella, beneath the ceiling of the peripterus,

\* Published by Taylor, Walton and Maberly, and Murray, and already mentioned.



was also filled with sculpture representing the Panathenæan procession. Sixteen of the metopes, and a large number of the slabs of the frieze were brought to England by Lord Elgin.

The sculptures of the Parthenon form the subject of numerous valuable works. The stylobate, of three steps, upon which the temple stands, 5½ feet in height, is also of Pentelic marble. The investigations by Mr. Penrose, at the instance of the Dilettanti Society, awakened fresh interest in these time-honoured remains. The suspicion of deep thought and subtle refinement in optical principles before unnoticed; the fact, since satisfactorily demonstrated, of the curvature of the horizontal lines and inclination of the columns;—of varieties in the size of caps in the same structure, with positive evidence of great mathematical knowledge in the form of the mouldings, convex, concave, and compound, and especially in the hyperbolic entasis of the columns,—resulted in a minute investigation of the Parthenon, Propylæa, Theseum, and other buildings, in 1846-7. It was ten years prior to this, that Mr. J. Pennethorne discovered the curvature in the stylobate of the Parthenon, rubbish and want of convenience having concealed this fact, now apparent, so long from the world. The most important of the curves are those which form the horizontal lines of the building where they occur, such convex curves of the steps lying in vertical planes, and corresponding curves of the epistylia, in vertical planes, parallel to the steps.

The inward inclination of vertical surfaces is also satisfactorily established. "When we consider," says Mr. Penrose, "the long interval that elapsed between the visit of Stuart and that of Professor Cockrell, during all which time the entasis of the columns of the Parthenon was undiscovered, and that it was reserved for Professor Donaldson to establish the Vitruvian inclination of the columns, we need not be greatly surprised that this curvature in the horizontal lines was not found out until a still later period."

Vitruvius first calls attention to these matters in the chapter "De Substructionibus," in the passage beginning "Stylobatam ipsa oportet exaquari ut habeat medium adjectionem per scannilios impares," &c. recommending that the stylobate should have a gradual rise towards the centre from both ends, and the inconvenience arising from it to be obviated by means of *scannilios impares*; and further, that the abaci are to follow the direction of the upper members of the epistylia, which will follow the curve of the stylobate. The vexed question of the *scannilios impares* seems thus to be explained. Certain difficulties, owing to the various uses of the terms "Hecatompedon," "Opisthodomos," &c. are learnedly discussed in Dr. Smith's "Dictionary," and are well worthy of attention. Callicrates and Ictinus were the architects, and Pheidias was appointed by Pericles to superintend this magnificent building.

Of very different style and form to the two buildings we have glanced at, was the Erechtheum (fig. 3), a temple intimately connected with the earliest legends of Attica, situate to the north of the Parthenon, and within a few yards of the wall of the Acropolis. It is difficult to arrive at a clear knowledge of the history of Erechtheus, called also Erechthonius. Homer describes him as born of the earth, and adopted by Athena, and by her installed in her temple at Athens as her companion! Poseidon Erechtheus was the name under which he was worshipped in the Erechtheum.

"The first and only conception of Athena and the sacred Acropolis," says Grote, "places it under the special protection, and represents it as the settlement and favourite abode, of Athena, jointly with Poseidon, the latter being the inferior, though the chosen companion of the former, and therefore exchanging his divine epithet for the cognomen of Erechtheus." The temple of Athena, in which he was interred, was named after him. It contained the statue of Athena Polias, or the guardian of the city, and was the tomb also of Cecrops. The building bore the general name of the Erechtheum, but, in fact, contained two temples, that of Athena Polias and that of the nymph Pandrosus, daughter of Cecrops;—the latter for this reason, that the infant

Erechtheus being entrusted to the care of herself and her sisters, Aglaurus and Herse, the two latter betrayed their trust, whilst Pandrosus remained faithful to it. This beautiful temple stood upon the site of the original one burnt by the Persians. Though commenced long before, this building could not have been completed till about 400 B.C. Its irregularity of plan forms a relief to the usual outline of the Greek temple. It had three porticoes of varied position; the principal one, facing the east, is a prostyle of six columns, five of which are still standing, the west end being terminated by four half columns in antis. The north portico is of four columns in front, and two at the sides, enclosing a highly enriched doorway to the cella of Pandrosus;—the third, to the south, is merely an enclosure, the roof of which was supported by six Caryatides, each 7 feet high, standing on a Podium.

In this building the curvature of the horizontal lines and inclination of the columns has not been detected. The whole of the building was executed with wonderful finish and delicacy, proving how well its constructors loved their task. The statue of Athena Polias was of olive wood, and its position was the cella, and in front was the golden lamp made by Callimachus, which was kept burning day and night: the position of the tombs of Cecrops and Erechtheus, of the olive-tree and the Salt well, is matter for learned conjecture. The building was left in a most ruinous condition after the War of Liberation in 1821-27.

Amongst the minor temples and works of art that covered the surface of the Acropolis, we will only allude to the colossal statue of Athena Promachus (*ἡ χαλκή ἢ μάχης Ἀθῆνα*), standing nearly opposite the Propylæa, of gigantic size, towering above the roof of the Parthenon, the point of its spear and crest of its helmet being visible off Sunium to ships approaching Athens. It was still standing in A.D. 395, and is said to have scared Alaric from his projected sack of Athens.

We must reserve our concluding remarks upon the subject of Athens until a future number.

#### VENTILATION, WITH ESPECIAL REFERENCE TO HOSPITALS.

PERMIT me to resume my observations on the interesting subject of ventilation, especially of hospitals, and to make some remarks on the reply which Mr. Rosser has given to my former communication.\* I must be allowed to reiterate emphatically my previous statement, viz. that the true origin of infectious and therefore deleterious air in hospitals, &c. is to be traced up "to the general noxious malaria which is constantly passing off from the bodies of individuals labouring under the most severe and oftentimes malignant forms of disease," and not merely to carbonized air, which is only the product of exhalation from the lungs of healthy individuals congregated in any large edifices.

In hospitals, where ventilation is imperfectly carried out, we find that certain diseases, presenting a well-known type, originate in a ward, and traverse floor after floor; whereas in the association of numerous healthy individuals no malaria is given off, and therefore no disease of a peculiar type is generated.

Allow me to make a few remarks on this important subject. A condensed body of human beings shut up in a large edifice—as Exeter Hall,—will not only thoroughly contaminate the air, which should be used for respiration, with impure exhaled gases, but likewise with solid particles of human origin, detached and diffused through the respired atmosphere. Dr. R. A. Smith obtained 200 grains of condensed moisture from one window in Manchester after a concert; he burnt 150 grains, and a strong smell of human perspiration came off, continuing until the moistness was dry. When this was heated it smelt like burning flesh, and was very disagreeable. This product may be viewed as the impure exhalation from hundreds of healthy beings, and would not give rise to contagious disease. Neither can we find that such diseases originate from any putrefactive products which arise from the earth's surface. Diseases, such as fever,

cholera, hospital gangrene, erysipelas, &c. are most probably "highly organized particles of fixed matter, which finds its way into the atmosphere, like the pollen of flowers, and remains for a time suspended in it,—a condition which is consistent with the admitted difficulty of reaching and destroying these bodies by gaseous chlorine, or with washing the floors as a disinfectant."—(Prof. Graham.)

"I have long been of opinion that the cause of endemic diseases, if disseminated in the air, must exist there, either in the condition of solid particles, or in a state allied to the vaporific form."—(Dr. R. D. Thomson.)

"The first material cause of cholera is a specific poison which may be present in all situations in India in a dormant state, but which requires for its development certain accessory causes, such as sudden meteorological changes; animal and vegetable effluvia; emanations from large bodies of men; effluvia from persons crowded into insufficiently ventilated buildings."—(Mr. Rogers, Surgeon of the Madras Army, 1849.)

There can be little doubt but that the morbid matter of such diseases is thrown off from the bodies of the sufferers, and passes into the air with the noxious gases which emanate from the skin of such patients. It will be an important inquiry, therefore, to ascertain the number and the character of such gases, and to obtain a practical acquaintance with their behaviour (if one may so speak), when they are thrown off from a human body, because in so doing we may follow the course of the animal poison; since the latter is to be found in the former impurity, just as the detritus of human excrement of the London sewerage is to be met with in the on-flowing muddy Thames water.

It may be observed, that the leading causes of sensible aerial impurity in the wards of an hospital, are the constant exhalation of the following gases:—1. Phosphuretted hydrogen. 2. Sulphuretted hydrogen. 3. Carbonic acid. 4. Carburetted hydrogen. 5. Cyanogen, with some of its compounds. To those well acquainted with the penetrating effluvia of the first gas, I may remark, that it is recognised always in excess in the medical wards, where diseases of internal organs are present, especially in all affections of the liver, stomach, and bowels, and in fever, dysentery, &c. &c.; whereas in all affections of the liver, stomach, and bowels, and in fever, dysentery, &c. &c.; whereas the blackening of the lead plaster strappings used in the surgical wards to stumps after amputation, and to sloughing ulcers, &c. readily informs us of the prevalence of the second gas, whilst the stupor, headache, and sleepiness produced in a healthy person, who remains some time at the bedside of such patients, leave no doubt of the copious exhalation of Nos. 3, 4, and 5 gases. By a wise and mysterious provision in the economy of nature, all gases have a tendency to diffuse themselves into the surrounding atmosphere; they are governed by unalterable laws, and their diffusion cannot be "prevented," nor "retarded" by "scientific ventilation," as your correspondent implies, although they may be diluted by artificial means.

The diffusion of each gas is always inversely as the square root of the density of such gas (Prof. Graham.) Now the density of the gases enumerated as the special products of diseases in hospitals, is as follows, air being 1.000:—

No. 1. Phosphuretted hydrogen .....	1.240
No. 2. Sulphuretted ditto .....	1.171
No. 3. Carbonic acid .....	1.524
No. 4. Carburetted hydrogen .....	.559
No. 5. Cyanogen .....	1.906

Dr. Mitchell found that the law of diffusion of the gases was only feebly interfered with even when a thin humid membrane intervened between the gas and the pure air; thus to traverse the membrane,—

Ammonia required .....	1 minute.
Sulphuretted hydrogen .....	2½ minutes.
Cyanogen .....	31 "
Carbonic acid .....	5½ "
Hydrogen .....	37½ "
Carbonic oxide .....	160 "

and a much greater time with nitrogen. The law to which the diffusion of gases is subject appears to be misunderstood by many persons, if we may judge by the examples which they give us, and the analogies which

\* See p. 692, vol. xiv.



they draw from such examples. It has been urged that the instance of the diffusive odour of camphor, musk, &c. may be employed as a type of the diffusion of gases, and that the scent of the drug is found to remain even some time after the windows and doors have been opened. This is a comparison brought forward on fallacious grounds. The odoriferous power of drugs depends on a volatile and essential agent, which appears to strike the air as sound does, and is conveyed as so many undulations from a centre to an indefinite circumference. This agent cannot be caught by the most subtle means, nor analyzed by the most experienced chemist; and it is a well-known fact that a grain of musk loses none of its weight after it has been exposed and has scented a large room for many months; whereas, a putrefying animal or vegetable substance emits certain noxious gases, which we can collect and analyze, becomes less in substance, and eventually decays or dwindles away through an unalterable law of dissolution or of putrescence. There are no gases evolved in animal putrefaction which are lighter than air, except carburetted hydrogen, and this is not by any means so common a pest in our wards as are phosphuretted hydrogen and sulphuretted hydrogen. It is a great error to suppose that hydrogen, the lightest of gases, is ever given off from human bodies as pure unmixed hydrogen; but, on the other hand, it is always combined with some base, the resulting product of animal putrescence, as phosphorus, sulphur, ammonia, &c. and with the exception of carbonic acid gas, it may be questioned whether any elementary gas, such as nitrogen, hydrogen, carbon, is really eliminated from the bodies of the sick and diseased in our hospital wards. Every patient suffering from a contagious disease, as typhus, becomes "anidus" from whence contagion springs. If, therefore, the noxious particles which emanate from the body become mixed with the animal gases already enumerated, it is evident that whatever agent tends to dilute these gases, will also disseminate them rapidly into circumambient pure air, and thus render the morbid matter weak and innocuous. As there is no liquid poison which may not be rendered harmless by copious dilution with fresh water, so there can be no aerial poison, the action of which may not be similarly influenced by dilution with fresh air. The exhalations from putrescent animal surfaces are always specifically heavier than the upper warm strata of air of the ward, so that they are confined to the lower portion of the room, where, like oil floating on water, with pure air above, they stagnate, until copious streams of cold and lighter air glide along the floor from doors and windows, and thus the aerial poison is driven to the chimney-flues and to the ceilings. This fact is borne out by daily experience; for, if several diseases such as fever, hospital gangrene, pyæmia, &c. are crowded together in one ward, and ventilation is imperfect, the diseases usually spread. In one public institution with which I am acquainted there is a fever department, or "fever wards," and when these rooms become filled with such cases, fever shows itself in some of the attendants and servants; whilst in our metropolitan hospitals these patients are indiscriminately mixed with other cases, and yet we never hear of fever spreading. This beneficial result is not entirely owing, however, to the dilution of gases by good ventilation, but to the fact that the worst forms of typhus are counterpoised, in their baneful influence, by the pungent emanations of other diseases, as acute rheumatism, &c. or the fetid exhalations of a sloughing back or a gangrenous lung; so that when "the spotted fever" raged in London in 1847, and our wards were unusually filled with such cases, the disease spread in two or three instances to the attendants; but it was to the attendants of the surgical patients, and not to the nurses who waited on the fever cases.

It has been observed, that "any agent which interferes with the integrity of the morbid molecule, destroys its capability of inducing a regular disease." The fact seems to be well authenticated (Boussingault), that the inhabitants of South America are enabled to withstand the attacks of endemic diseases by mechanical applications, such as veils placed before

the organs of respiration, so as to sift the air from morbid solid particles, "which supports the view of the organic nature of malarious poison." (Dr. R. D. Thomson's "Researches on Cholera.") It is, therefore, probable that by such an indiscriminate mixture of endemic diseases with other sufferers, the "*materies morbi*" is so altered in character that it is robbed of its deadly power to propagate itself; not unlike the principle of Arnold's chronometer compensating-wheel, where "*Elementa suis armis devicta*,"\* and one metal expanding in a hot climate is counterbalanced by another which contracts in the same temperature.

But to return to the subject of the diffusive power of gases. The stagnant nature of all animal exhalations of a gaseous kind requires that the diffusive force of such gases should be aided by mechanical force, especially when these exhalations are the product of endemic diseases, which may spread through a community. Just as oil with water requires to be shaken vehemently together in order to diffuse itself, so does the aerial impurity now under consideration require to be beaten about from all quarters (if I may use such a phrase) by pure air, before it can be so diluted as to become no longer deleterious to healthy persons. Now the tripartite windows of the Middlesex Hospital are capable of being left open all night, without giving rise to a downward current, and the zinc perforations are rarely closed, unless the weather is intensely cold, and then such a measure is not wanted, as a low temperature is always co-existent with a scanty amount of fetid emanations.

Mr. Rosser observes, "Everybody knows that offensive smells are much less perceptible to windward than to leeward, and that the volatile gaseous exhalations from a coke fire are much less perceptible when there is a good draught towards the fireplace than when the draught is imperfect, and hence it would be reasonable to infer that the spread of infectious disorders is lessened by arrangements the tendency of which is to retard the diffusion [*dilution?*] of the '*materies morbi*,' and to remove them at once from the spot where they are generated."

This mode of reasoning is highly injurious, simply because it is based on fallacious principles, for I have already attempted to show that the poison of contagion is wrapped up in the bosom of other noxious exhalations of a gaseous nature, and that the rapid dilution of the latter can alone ensure the non-propagating influence of the former; and I would humbly suggest to architects and builders generally, whether the inattention to this grand principle in the generation of aerial impurities has not led to so many serious errors in ventilation in our public asylums, &c. &c. "There are many facts," observes Dr. Arnott, "to show that the impurity of retained breath, scarcely heeded in general, has been the chief element of the foul atmosphere which has led to cholera outbreaks. Thus, in England, it has been in public institutions, clean to the eye, not very offensive to the nose, and where the inmates were well fed and well clothed, and otherwise well cared for under frequent public inspection, but where ventilation was overlooked and defective, that some of the most shocking scenes of destruction from cholera have occurred; such was the school at Tooting, of 1,000 parish children, among whom about 300 cases of cholera suddenly occurred; and various union workhouses, lunatic asylums, prisons, &c. in London and elsewhere, were similarly visited: such places in the end of 1849, produced more than half the cases of cholera." The very crowded school of the union-house at Taunton, became a remarkable example, where thirty cases suddenly appeared in the room of the girls in which the glass windows remained entire, while in the adjoining room of the boys, where panes of glass were broken, and fresh air was admitted, not a single case occurred; and there was only one other case in the town.

Whenever, therefore, we can by ventilation drive the aerial impurities up the heated flue of a chimney, by the forcing, beating, slapping influence of a series of columns of pure air from all quarters, rushing towards the rarefied air of

the fireplace, we then greatly diminish any tendency of contagious diseases to spread; the morbid matter, in lieu of becoming "retarded" in its diffusion, should be quickly and largely diluted, when we may inhale it with impunity, in the same manner that a tea-spoonful of Prussic acid in a wine-glassful of water would prove fatal to a healthy man, whilst more than a wine-glassful of the same poison, diluted in a gallon of water, would not prove in anywise injurious to a dozen sickly persons. It has been demonstrated that the virus of small-pox, cow-pox, &c. loses none of its property by exposure to gases. It is evident, therefore, that the retardation of any gaseous impurity, which carries on its bosom morbid matter, will aid the latter to propagate its baneful influence. The extrication of sulphuretted hydrogen, one of the most poisonous gases with which we are acquainted, or of phosphuretted hydrogen, would not be followed in a marshy district by ague, but another agent must be present to give rise to miasm; and this agent is a certain morbid exhalation, now generally considered to consist of solid particles floating in noxious gases, and generated by vegetable decomposition in marshy lands, and by animal decomposition, and by endemic diseases amongst human beings.

I will now pass on to a brief notice of the excellent system of ventilation adopted in the east and west wings of the Middlesex Hospital. The boiler furnace and the laundry drying-closet furnace flues conjointly meet in the basement, and run up the east wing; outside this flue is a chamber, and at the distance of 6 inches from the ceiling of every ward is an opening into this chamber, so that it is computed that 10,000 cubic feet of impure air are extracted from each ward per minute. The same plan is carried out in the west wing by a coke furnace only; and this system, aided by the tripartite windows, has rendered the wards so sweet that, to quote a remark once made by a visitor, "You may come into the wards blindfolded, and you would not discover any appreciable difference between the air in them and in that of the passages."

In conclusion, let me quote a well-known authority on this subject:—"To form just conceptions of what ventilation is, and of how it is in general to be accomplished, an enquirer has to consider that the ocean of air, called the atmosphere, which rests on the surface of the earth, and at the bottom of which men live, as certain aquatic animals live at the bottom of the sea, is about fifty miles high or deep, and that the portion of this ocean which can be contaminated by any process of animal or vegetable life, or by the decomposition of organic bodies when dead, may be regarded as less deep generally than the fiftieth part of one mile, estimated from the surface of the earth. This comparatively insignificant layer or stratum, therefore, may be regarded as the home or lurking-place of all epidemic diseases and insalubrious air, the more exact statement, indeed, being that these are generally confined to the still much smaller portions of air contained in houses or other inclosed places. Then the fact is to be kept in mind, that the whole mass of atmosphere at any moment over a city or other place is always travelling away to leeward with the speed of the wind, and is carrying with it whatever impurity may ascend from below, which impurity is then resolved quickly into the pure elementary oxygen, carbon, &c. of which all effluvia consist. Man can no more contaminate permanently the deep atmosphere over him by his proceedings at the bottom of it, than he can contaminate the Atlantic Sea, by what he may do on the shores. Then he has to learn that with the same mechanical certainty, as he can substitute the pure water of a passing tide or river stream for polluted water near the shore, he may substitute pure air from the atmosphere for any air near him that has become unfit for his use."—(Dr. N. Arnott.)

I will close this communication by observing, that to the practical working of the present system of ventilation adopted at the Middlesex Hospital, since 1849, to the substitution of non-absorbing Parian cement for the old plaster walls, and other valued improvements in the closets and sculleries, may be attributed, as a

\* Arnold's prize essay's motto.



means, the entire absence of all endemic diseases, whilst the oft-repeated outbreaks of such calamities previous to these alterations, warrants me in saying that it is by far the most effectual system of ventilation that I am acquainted with amongst our public hospitals and asylums.

GEO. CORFE, M.D.

Since writing the foregoing remarks, I have ascertained that the *Builder* has lately given a very favourable review of Mr. Robertson's excellent paper, read at the Manchester Statistical Society. In this brochure, Mr. R. speaks of the Middlesex Hospital as being nearer "a model" for hospital ventilation, than any public edifice of a similar nature with which he is acquainted in this country, and he emphatically denounces mere "scientific" ventilation for hospitals, however admirably such a mode of aeration may be adapted for dormitories, &c. and that nothing but the ceaseless flow of the external air through the wards, can effectually carry off the fetor from ulcers, wounds, burns, and vitiated secretions from other sufferers. Such an arrangement as the zinc plates afford in many of our wards, Mr. R. speaks of in well-merited praise.

Permit me also to refer your readers to the sanitary report of Marylebone for November, in which Dr. Thomson has given some striking instances of disease and death arising from effluvia and imperfect ventilation, ten years ago, in the very establishment which Mr. Robertson has now, in its remodelled state, spoken of in such high terms.

#### ARCH, CONSTITUTION-HILL, GREEN-PARK.

THE Iron Duke, on the Corinthian Arch, has been so long a *fait accompli*, that we may regard him as a fixture for aye in his elevated position, however ill-chosen by those in authority.\* Would there be anything amiss in now completing the ornamentation of the arch, to correspond with the equestrian figure which surmounts it?

I allude to the spaces between the pilasters on the body of the structure, left *en bossage* to receive trophies or other enrichment.

Much cost would not be occasioned by sculpturing on these rough blocks wreaths, to contain bronze inscriptions, simply and concisely enumerating the victories of the Duke.

See the completeness of the Parisian Arc de l'Etoile, in this as in its other details, and then look at the arch crowning Constitution-hill, and say whether there is ought to find fault with in the suggestion of Q.

#### STRENGTH OF IRON BEAMS: THE NEUTRAL AXIS.

My attention has been called to a paper by Mr. Bell, on the "Strength of Iron," read at the Institution of Civil Engineers, an abstract of which is published in your journal of January 3rd.

In this paper there occurs the following passage:—"In regard to this subject, Mr. W. H. Barlow had alluded to the alternative hypothesis, that the neutral axis shifted its position as the beam became strained, and that when rupture took place, the neutral axis was 'at or above the top of the beam.'"

Mr. Bell, having referred, in another place, to my paper on the strength of iron, read at the Royal Society in 1855, I feel it necessary to correct the error in the passage above mentioned.

The words quoted by Mr. Bell do not occur in my paper, but are taken from a book of my father's (Professor Barlow), written many years ago; before the tensile strength of cast-iron and the position of the neutral axis had been clearly ascertained. Referring to the anomaly presented between the supposed tensile strength and the apparent resistance of the outer fibre, in a solid rectangular bar, when strained transversely, my father states, that even if the neutral axis be assumed to be at the top of the bar, the direct tensile resistance must be 10 tons per inch, in order to account for the strength exhibited, to which he adds the remark, that "unfortunately the exact amount is not known."

\* We have better hopes.—Ed.

In my paper I gave an account of experiments which I had made, and which established the position of the neutral axis by actual measurements of a large rectangular cast-iron beam, under various degrees of transverse strain. By these measurements the neutral axis was found to be in the centre of gravity of the section.

Having been the first person who ascertained the position of the neutral axis by actual measurement, and thus rendered it no longer a matter of opinion, but an established fact; and having published this fact in the paper alluded to by Mr. Bell; it is rather an inexcusable blunder on his part, that he should use my name as alluding to the neutral axis being near the top of the beam, and conclude by expressing an opinion (after the fact has been proved), that "there appeared to be no good reason for supposing that the neutral axis shifted its position."

W. H. BARLOW.

#### CLASSIC v. MEDIEVAL.

You will perhaps allow me to express my cordial approbation of what was said in your last number by Mr. T. Goodchild, in behalf of what, for want of a more precise epithet, must be designated Classic in unmistakable contradistinction from Medieval. Still, though I heartily thank him for what he has said, I am by no means satisfied with it, simply because it was too brief to produce much effect, unless it prove that of stirring up others to come forward on the same side of the question.

The Classic, or I would rather call it the Neo-classic style, it being considerably modified from its antique original, is surely more in accordance with our present requirements, and likewise with the element of modernism or non-medievalism in our sympathies with literature and art, than is a style formed and fashioned during a quite differently constituted state of society, of which it is now incongruously reminiscent.

At all events, before it can again be rendered, even in a tolerable degree, applicable to secular purposes of every kind—as we are told by its ultra-advocates it ought to be—Gothic must be greatly modified, perhaps almost metamorphosed, or soon would be so, were it to become employed on all occasions, even the most ordinary ones. When resorted to only in special and exceptional cases, where, after being carefully studied, its mediæval costume can be well got up, Gothic may serve the particular purpose; but it has now become an architectural exotic, and the making use of it is now too much like the affectation of archaism. Z.

#### CORK.

THE architectural doings at Cork have not been large lately; still, some little has been done. The Great Southern and Western Railway has been opened to the water-side within the past year; and a goods station—substantial buildings—being over 365 feet long by about 140 feet wide, built from the designs of the Company's engineer, Mr. Miller. The passenger terminus was designed by Sir John Benson. It consists of arrival and departure platforms, waiting-rooms, with the usual offices, a convenient space for cabs and omnibuses, so that passengers can be taken up or set down under cover: this is a colonnade, 200 feet long and 30 feet wide at each end, and 43 feet wide by 30 feet in length in centre. There are twenty columns, 14 feet 6 inches high, supporting the roof. The entablature is plain, with block in cornice, and a low attic to screen the roof.

The Cork Exhibition Building has been perpetuated by a more substantial building by the last-named architect, which is called the Cork Athenæum. The building has been in use some time. The colonnade at entrance is not yet erected, for want of funds.

The tower to the Roman Catholic cathedral is finished, but nothing as yet is done to the spire: the quoins and dressings and tracery are in limestone, well executed; the walling in the red stone of the district.

A new dock, 350 feet long, 18 feet water on sill, 60 feet gate, has been built by private enterprise. Mr. Wheeler is the proprietor. The works

were carried out by Mr. Alexander Dean: the original design was by Sir John Rennie; but local circumstances caused Mr. Dean to modify and alter this somewhat. It is a very successful work.

Another dock has been also constructed by private enterprise on this river by Mr. Brown, with 24 feet water on sill, gates 80 feet 6 in. wide, in length nearly 400 feet. These works show the growing importance of this port.

A new Roman Catholic Church of St. Vincent de Paul has been opened also this year, built from a design by Sir J. Benson.

Queenstown has been very much built on within the last two years, but in a somewhat questionable style. The new Queen's Hotel is almost half window. Small drawn-up piers separate a multitude of openings, and to crown the whole, it is surmounted by a clumsy cornice and parapet. Still from the harbour the town looks much improved, and was lighted with gas for the first time on the 1st inst. The shops and streets of Cork are every day improving, and in some of the shop-fronts there are a character and style very creditable. They are about to rebuild St. Patrick's bridge, which was carried away, or rather injured, by the great flood of 1853, in one arch of 180 feet span, in iron.

#### PROPOSED MEMORIAL CHURCH AT CONSTANTINOPLE.

It will interest some of our readers to hear that forty-six designs have been sent in to the committee for the competition for the Memorial Church at Constantinople: several of them have great merits. An architect who has resided at Constantinople responded to our invitation, and expressed himself willing to give any information in his power to competitors. His intimation, however, came too late to be of service.

#### THE LIVERPOOL ARCHITECTURAL SOCIETY.

THE seventh meeting of the society was held on Wednesday, the 7th inst. the president, Mr. S. Huggins, in the chair, when Mr. J. A. Pictou read an interesting paper entitled "Notes on Architecture in Holland, Germany, and Switzerland."

#### THE LIVERY HALL ABOUT TO BE ERECTED FOR THE CLOTHWORKERS' COMPANY.

THE view represented is taken from the south end of the room. The sides are each divided into five arches by piers with attached Corinthian columns. On the east side the arches will contain windows filled in with stained glass from the old hall, and on the west side there will be three entrances and two large open fire-places. The buffet will occupy the centre of the north end, and at the opposite end there will be a screen and music gallery.

The arches springing from the attic above the order will groin into the vault of the ceiling round each of the four sides, and it is intended to fill these with stained glass, with the royal arms and those of the principal city companies. In the spandrels will be figures in relief, emblematical of the most important commercial cities and towns of the United Kingdom.

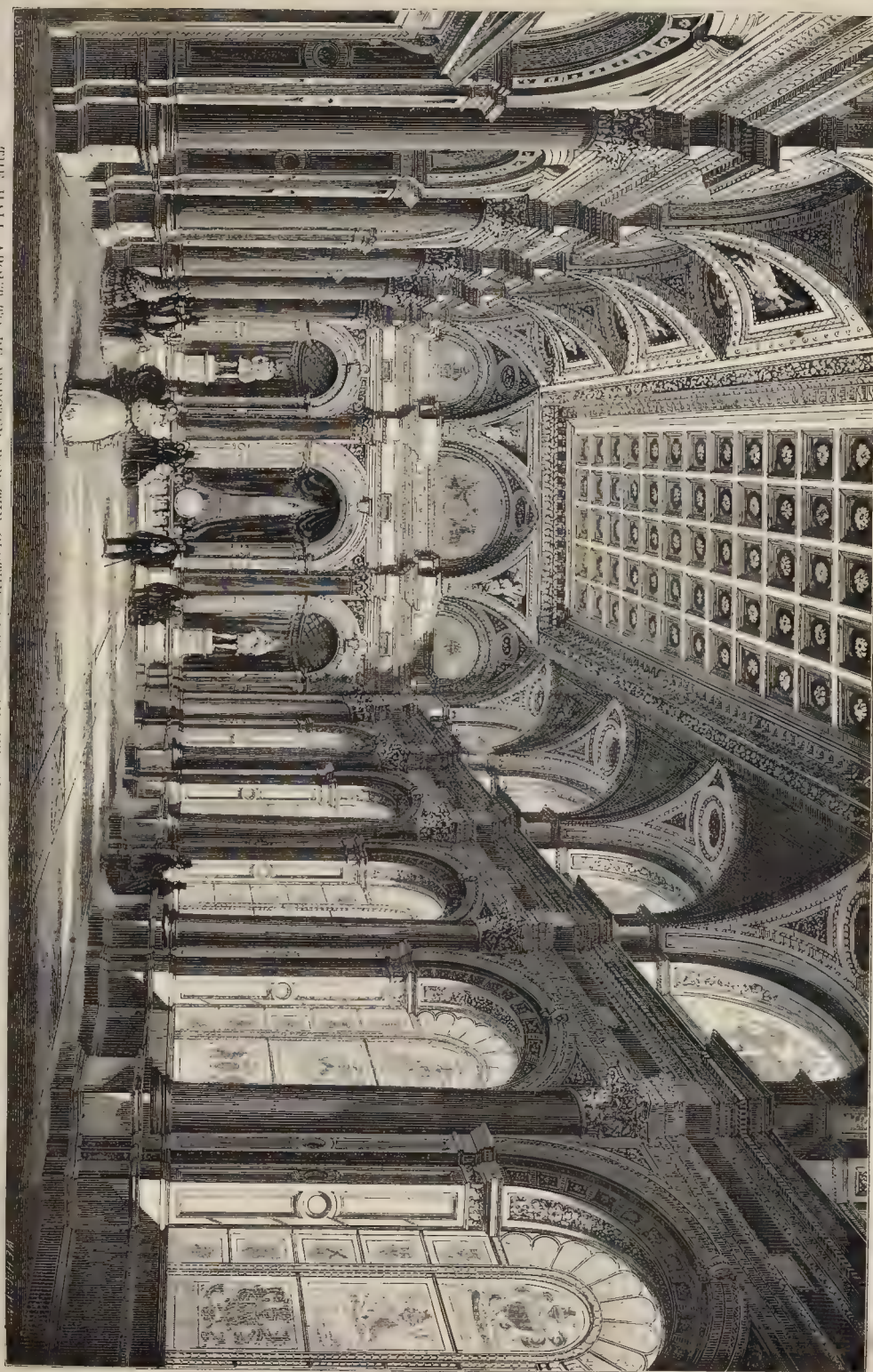
The columns are to be of Peterhead or Aberdeen red granite, with grey granite bases, and capitals of Caen stone. The stylobate is to be of various English marbles. The ceiling above the vaulting will be framed in wood for the purpose of assisting sound.

The extreme length of the room will be 80 feet, the width and height both 40 feet,—a double cube.

It promises to be a fine addition to the Halls of London, and will worthily connect with the City the name of its architect, Mr. Samuel Angell.

In our last volume (p. 610) we gave a view of the exterior of the building, and some memoranda concerning the Clothworkers' Company. We may add that the late Sir Robert Peel and Lord Hardinge were both liverymen of the company, and that the present Mr. Justice Willes is at this time one of the members of the court and livery.





THE HALL ABOUT TO BE ERECTED FOR THE CLOTHWORKERS' COMPANY, MINCHING-LANE, LONDON.—MR. SAMUEL ASHALL, ARCHITECT.



## RAILWAYS ON COMMON ROADS.

It has been well observed by an eminent French engineer, in relation to locomotive facilities, that "to retrograde is sometimes a progress;" and this apparent contradiction of terms is really true in many instances.

It is undoubtedly applicable to the formation of a series of what may be termed secondary railroads, or tramways, on common roads, worked by horse-power, now energetically demanded by our French allies, and usefully employed in America;—for Brother Jonathan can go slick ahead, as far and fast as anybody when it suits his purpose, and retrograde with equal facility where an advantage is to be gained. And why not? Why should people deprive themselves of the pleasures and advantages of cheap conveyance, because they cannot afford to construct a spick and span new locomotive railway, with deep cuttings, high banks, showy bridges, and splashy stations?

It will not pay to make expensive locomotive railways everywhere, to every village and hamlet ambitious of being introduced into the world on a railway of its own; however, where locomotive lines cannot be made, tramways can, at one-tenth of the cost of the former, and quite as useful, if not so grand and noisy. Where it will not pay to put down a tramroad, the inhabitants must be content to jog on in the even tenor of their way as usual,—trudge through mud and slush, stick in ruts, or stop at home out of harm's way.

Where towns are placed at a moderate distance from the main trunk line, and the traffic would not be sufficient to pay for the construction of an expensive locomotive branch, they may be readily tied to the main artery by an improved tramway, and thus at small cost reap the benefit direct by railway transit.

It is better to have a serviceable tramway than be cut off from the main line; for a town in the latter predicament is isolated, checked in its progress, and kept behind the age, all for the want of a few yards of rolled iron!

Why should tramroads be despised in practical England, and ignored in London and its endless suburbs? Why should people laugh at the idea of horse railways—of tramways on our common roads? Perhaps because they are old-fashioned, and have been put in the shade by locomotive lines. But this is sheer nonsense. All are useful in their proper place. No one in his senses would recommend a horse tramway from London to Bristol, while he can fly along by the "Iron Duke" on the Great Western. But there are places where the Great Western dare not hope to penetrate: it is here precisely where the tramways take up the business, and would do a paying trade.

Many of our out-of-the-way places are worse off for cheap and easy conveyance than they were before railroads came into fashion: the grand trunk lines pass at a distance from them; coaches have been taken off the roads: conveyance is scarce; and inter-communication difficult. Much time is lost to the unlucky inhabitants of outlying towns, in trudging to and from the railways: some three or four miles away from them. Who likes to trudge to or from a railway station up dusty roads or muddy lanes? No one, certainly, if he can help it: even omnibuses are a bore, although put in the line of route by cunning publicans and others for the special comfort and conveyance of their customers.

It is no unusual sight at a railway station to see half a dozen shabby omnibuses, with rickety horses, and noisy cads, touting for customers on the arrival of a train at a place where passengers disembark to find their way to a town some miles away from the line. Here are half a dozen omnibuses and a dozen horses, where one good roomy omnibus and two horses would do equally well with a tramway. This is a waste of money, time, and power, which should be remedied by the introduction of the tramway.

Tramroads were invented long before steam and Stephenson came forth "to witch the world with noble horsemanship," and whirl through the wind at a mile a minute. They were, however, confined to bleak and dreary mining districts, or buried in the twists and twirls of our great slate quarries,—used for heavy loads of

luggage, coals, ores, slates, and granite blocks, as on the Dartmoor tramway,—not for the conveyance of passengers,—pushed along by sweaty men and boys, not drawn gallantly on by horses *à la poste*. The carriages used were scrubby trucks, short, thick, and stumpy, with pulleys for wheels just big enough to lift them clear off the rails or plates. No one ever dreamt of using them for passenger traffic, or of carrying them through towns and cities,—but why, is a mystery. They were neglected, and at last almost forgotten. No one thought of improving tramways, while they had locomotives to improve, spoil, or patent, as the case might be. They stood stock still in their native rudeness and rusticity, and looked as venerable as if they had been formed by Tubal Cain himself, in his 'prentice days; while railroads rushed a-head, and carved the country into gridirons, with rails and roads of every size and shape. Yet they have lingered in the memory; and now, after a grand flourish with the locomotive lines, enterprising men bethink themselves of the "old trams": why not smarten them up; why not improve them; make them generally useful; put them where they have never been put before; go where their rivals cannot go, and, like the jackall, provide food and provender for the lion locomotive line?

Brindley said one day to a committee of grave wisacres in the House of Commons, that "rivers were made to feed navigable canals," and so we may say that tramways may be made to feed locomotive lines.

The "old trams"—with a new face, with new-fashioned flanged wheels (not pulleys)—smart, roomy omnibuses for fifty people; good luggage-trucks properly built, and well turned out, *à l'ancien art*, in their most civilized form, will be readily patronized by the rambling public, in consequence of their comfort and economy. The Yankees have taken them in hand, and brought them largely into play. They are well known in many of the American cities, and in that land of progress are going rapidly ahead. Horse railways are found useful in America, and why should they not in England?

Our French neighbours have taken them up: engineers have devoted time and trouble to their improvement; and improved specimens of the "old trams" were exhibited in the "Palais de l'Industrie" during the last year's display. Many pamphlets have been written upon them, several patents taken out, many improvements made, and a line actually laid down in the Champs Elysées, Paris, to let the gallant Parisians see what can be done on common roads. Besides all this stir and "waking up," several companies have been started for the purpose of carrying the idea of horse railways into practical execution. Many of the principal cities of France, as Bordeaux, Rouen, Havre, &c. by the medium of their municipalities, have approved of the principle, and recognised the merits of the improved tramway system.

And why should they not? At Rouen, for example, when these tramways are laid down alongside the quays, merchandise can be at once received from the vessels, and sent direct to the railway outside the town, and thus bring the shipping into direct and facile communication with Paris; and the same arguments apply to the busy quays of Bordeaux, which, by means of tramways, will be united with the Certe, as well as with the Paris line. In this point of view improved tramways are exceedingly useful, and bid fair to be fully employed for such purposes on the Continent,—not only for merchandise, but for passenger traffic. Many lines, even of twenty and thirty miles length, have been carefully studied for tramways, and have been very favourably received by the French Government,—as little or no objection seems made to their being laid down on the imperial and communal roads of grand communication. The Belgians might naturally enough be expected to follow the French in these matters. Our worthy friends, the good Mhyneers of phlegmatic Holland, have even taken up the cue, rubbed their eyes, and cogitated, over their cups and pipes, as to the merits of tramways, and, what is more wonderful still, see no objection to their introduction into their beloved land of ditches, dykes, and polders. The worthy burghers of Amsterdam approve,—Mhyneer Van Dunk him-

self nods assent,—then why should not the Londoners and men of "Cheape" give the "trams" a fair and honest trial?

The improved tramways must neither be confounded with the cheap go-a-head "plank" roads of America, nor with the rolled plates of our old collier trams. They are now, in fact, complete railways, with a guard-rail and flanged wheel to the vehicle traversing them, so that they really possess all the advantages of a rail as used on locomotive lines; their form, however, being very different. The best form is that patented by Monsieur Loubat, civil engineer, and employed by him in the line traversing the Champs Elysées, from the Place de la Concorde to St. Cloud. In appearance it is something like a semi-circular gutter, but on closer inspection it will be seen to consist of a rail and guard. The wheels of the omnibus which are flanged, run on the rail—and not in the hollow part of the gutter, as it may be called. Although placed in the common road, crossed and re-crossed in every direction by the continuous traffic, it never becomes choked, nor offers impediment to the free passage of the omnibuses specially made to run up it. It offers no obstruction whatever to the other traffic, and, in fact, is scarcely seen on the road, as it is level with its surface; and, in fact, forms an integral part of it. A simple rail would not answer the purpose on a common road: a plank road would be worse than useless, and the old plate trams, with their sharp upright flange, would be dangerous for horses, and easily damaged by the passing traffic, which is not the case with the improved tram-rail. The carriages are large, and capable of carrying forty or fifty passengers, which run lightly along the rails, and are easily worked with two horses: they are made back and front alike, with a shifting pole, so that when they arrive at their journey's end, the pole is shifted, which saves the necessity of turning, or using turn-tables. In case of necessity arising from any obstruction on the road, they can be readily thrown out of the rail, pass the obstruction, run on to the rail again, and so continue their way without let or hindrance, which is a very useful feature in the improved tram-rails as now employed in France.

These kinds of railways,—for after all they are really railways,—may be advantageously employed, especially on the continent, where the grand network of railways is not so closely interwoven as in a small country like England. They will make admirable tributaries to the main lines, and give great locomotive facilities where none now exist, in consequence of the distance of the main lines from many of the neighbouring towns. They are of easy application in Holland, many parts of Belgium, Northern Germany, and would render good service to Russia. As the principal roads in France are under the control of Government, there are no old-fashioned, cumbersome "turnpike trusts," as in England, to throw obstacles in the way.

The French Government admits the utility of the principle, and will not raise objections to well-selected lines, on any of the *routes impériales*. They have latterly made much way in the estimation of the communal and departmental authorities, who have not thought the subject beneath their notice, or unworthy of discussion in their councils.

The question relative "à l'établissement sur ces deux lignes du système de chemin de fer avec chevaux," has been discussed and approved in the "Conseil générale" of the département, *du pas de Calais*, as well as in many others of these important assemblies.

The municipal councils have not been behind-hand in these matters; for, in many of the principal cities, they have been freely discussed, and their utility as well as economy fully admitted; and, in more than one of the great commercial cities of France, plans and estimates have been made for laying down tramways to connect their quays and busy centres of trade with the trunk railways, and thus reap the advantages of railways where locomotives cannot conveniently or economically penetrate.

The expense of permanent way laid down complete on longitudinal bearers, of size suitable to the rails, does not exceed 25,000 francs (1,000*l.*) per kilometre, and any experienced



contractor in France would be glad to furnish a line complete, including rolling and working stock, for 50,000 francs, or 2,000 francs the kilometre. This is in fact a rather high estimate, and they may be laid down complete for 35,000 to 40,000 francs the kilometre, whereas a locomotive line could not be executed under 250,000 francs, or 10,000, the kilometre. And since the traffic in the two lines would be pretty nearly equal for most places where trams would be useful, the economy and pecuniary advantage is evidently in favour of the trams. Then why not employ them more freely—why not bring them into use more rapidly, and open up new facilities for locomotion and inter-communication?

Their safety is indisputable, and speed sufficiently great for ordinary purposes. The ordinary rate of baggage-trucks is from ten to twelve kilometres the hour, and for passenger, from twenty to twenty-four kilometres, which is quite fast enough for ordinary purposes, where trams may be judiciously employed. No one of course would pretend to put them in competition with locomotive lines: they are not designed for any such purpose: their object is to open up new fields of traffic to feed the grand lines, especially where locomotive branches would not pay for working; and in this alone consists one of the greatest merits of the principle. Rivers are fed by minor streams flowing into them; and so are trunk lines by branches; and a large stream of traffic may be made to flow into them, through the small but useful channel of well-selected trams. They are most useful in France and America, and why not in busy, bustling, restless England? Time will bring them into favour, though now despised in the native land of railways.

What can be said of their eligibility for London? The "leading journal" has not considered them beneath its notice: it has devoted more than one of its forcible leaders to call attention to them, especially as to their applicability to London. It has pronounced, there are no "engineering difficulties" in the way: this may be true in principle, but not in detail. There would be difficulties in bringing them down such places as Fleet-street, Cheapside, and the Poultry; not difficulty of construction, certainly, but of economical application and obstruction. They might be readily and usefully applied in our great suburban routes, as Mile-end, Bayswater, City-road, Islington, Kensington, Wandsworth, Edgware, Vauxhall Roads, and similar lines. They could easily be added down from London-bridge to the Crystal Palace; and as each omnibus could be made to carry sixty or seventy people, they would be very useful in dividing the traffic to that attractive place; for at present it is rather difficult of approach, notwithstanding the railway at London-bridge, and its inconvenient crush-room. They may be made useful anywhere, even in a densely-crowded city like London; but there are other places where they would be far more useful, and at the same time more profitable.

The question of "Horse Railways" has been taken up by men of eminence and ingenuity in France; and ere long, I have no doubt, from the rapid strides they are making in public estimation, that they will be more generally employed than at present; and that when once the impulse is fairly given, its march will be continuous and onward. They will be improved as they advance in favour; and, when their merits and utility are better known, they will be better appreciated, even in England.

JOSEPH LOCKWOOD.

# COMPENSATION CASE, NORWOOD.

On Friday, the 9th instant, an inquiry took place before a jury, at the Sessions House, Newington, as to the value of 4½ acres of land and ornamental water, at Norwood (by the cemetery), belonging to Mr. T. E. Savage, taken by the Crystal Palace Railway Company for the site of the railway adjoining south to the viaduct, which shows the increase in the value of land there. The plot of land in question was purchased by Mr. Savage in 1840, by auction, for 310l. On the part of the claimant, Mr. Wm. Allen Boulnois valued it at 4,752l.; Mr. Edward l'Anson, at 4,421l.; and Mr. Edwin

Nash, at 4,438l. On the part of the company, Mr. Charles Lee valued it at 799l.; Mr. R. A. Withall, at 761l.; and Mr. Wm. Rogers, at 766l. The jury gave for the whole, 1,200l.

## MATHEMATICA QUESITA CUM EXPLICATIONIBUS.

PERHAPS you may consider the tendency of the following resolved quesita calculated to give them a place in the columns of your journal:—

*Required the dimensions of a Norman window, of a given perimeter (a), so that it may admit the greatest possible amount of light.*

The whole perimeter is denoted by  $a$ ; let  $x$  represent the radius of the semicircular head of the window; then we have  $\pi x$  = the circumference of the head; and the area of the window may be expressed by the function

$$(a - 2x - \pi x) x + \frac{\pi}{2} x^2, \\ = ax - 2x^2 - \frac{\pi}{2} x^2,$$

which (by hyp.) must be a maximum.

Denoting the latter function by  $u$ , we have

$$\frac{du}{dx} = a - 4x - \pi x,$$

which = 0, when  $\pi + 4 \cdot x = a$ , and as

$$\frac{du}{dx} \text{ passes through } +, 0, -.$$

Therefore, when  $ax - 2x^2 - \frac{\pi}{2} x^2$  is a maximum,  $\pi + 4 \cdot x = a$ ; i.e. the whole perimeter equals the circumference of the semicircle, and twice the diameter of the semicircle, of which the base of the rectangular part of the window is equal to the diameter, and, therefore, the sides of the rectangle taken together are equal to the remainder, which is the diameter. Therefore, the side of the rectangular part of the window must be equal to the radius of the semicircular head.

*Required the height at which a gas-burner should be fixed above a table, so that a small portion of the surface of the table, at a given horizontal distance (a) from the light, may receive from it the greatest degree of illumination.*

The given horizontal distance =  $a$ . Let  $x$  denote the required height,  $r$  the distance from the origin,  $\phi$  the angle of incidence; then the degree of light

$$\propto \frac{\sin. \phi}{r^2}, \text{ and } C \frac{\sin. \phi}{r^2}. \sin. \phi = \frac{x}{r^3}, \text{ and } r =$$

$$(a^2 + x^2)^{\frac{1}{2}}; \therefore \sin. \phi = \frac{x}{(a^2 + x^2)^{\frac{1}{2}}}, \text{ and } \frac{\sin. \phi}{r^2} =$$

$\frac{x}{(a^2 + x^2)^{\frac{3}{2}}}$ . Therefore  $\frac{x}{(a^2 + x^2)^{\frac{3}{2}}}$  must (by the hyp.) be a maximum. Taking the log. of this, and denoting it by  $u$ , we have

$$\log. x - \frac{3}{2} \log. (a^2 + x^2);$$

$$\frac{du}{dx} = \frac{1}{x} - \frac{3x}{a^2 + x^2} = \frac{a^2 - 2x^2}{x(a^2 + x^2)},$$

$$\text{which} = 0, \text{ when } x = a \sqrt{\frac{1}{2}}; \text{ and } \frac{d^2 u}{dx^2}$$

is negative; therefore  $u$  has a maximum value when  $x = a \sqrt{\frac{1}{2}}$ .

Cambridge.

A. J. TOMPKINS.

## PROVINCIAL NEWS.

*Bardney (Lincoln).*—The Bardney Wesleyan Day School, designed by Messrs. Bellamy and Hardy, of Lincoln, architects, was opened on 29th ult.

*Stratford and West Ham.*—It is intended, it is said, to erect workshops and factories for the London and Tilbury Railway, near Plaistow-grove, where it is also proposed to erect a station. The London and Tilbury line will cross the Leigh-road near Plaistow, and the value of property in this district has hence advanced in value.

*Brighton.*—The Pavilion Committee of the town council have made up their report on the appropriation of the Pavilion estate, from which it appears that they propose various improve-

ments and alterations, at an estimated cost of 2,427l. for the pavilion, &c. and 7,618l. for the north property, making together 10,045l. which sum the committee suggest should be raised by a new loan for 57,000l. paying off the present debt, and extending the redemption of the new loan to thirty years, at 4 and 4½ per cent. By this plan the present rate will not be increased. The committee state that they feel confident the Pavilion estate, thus applied, will realize in point of revenue the expectations of the most sanguine. A suite of reception-rooms, music-hall, and anthem, or conservatory in the dome, free public library, museum, and picture-gallery are all comprised in the projected improvement of the property.

*Gloucester.*—The new corn-exchange was opened on Saturday in last week. Owing to the irregular form of the ground upon which the building stands, and the narrowness and obliquity of the frontage, a departure from the ordinary rules of street architecture was necessitated. In order to avoid interference with some established lights on the north side the building was set back, and a circular portico thrown out to the extent of the line of frontage. Four detached Corinthian columns, with two pilasters, 26 feet high, support an entablature of the same order, on the top of which is a balustrade, surmounted in the centre by a colossal figure of Ceres. Carved vases are placed on the balustrade immediately over the four columns, the centre space being filled in with the city arms. The total height from the pavement to the top of the figure is about 50 feet. The entrance to the corn-exchange is through a corridor 13 feet 6 inches wide, paved with Minton's encaustic tiles; on one side of which are the offices of the city surveyor and his assistant, with a staircase communicating with the upper floor, on which are located the town clerk and the clerk to the Board of Health. The dimensions of the corn-exchange are 62 feet by 52 feet, and the height from floor to top of lantern 45 feet. A committee or settling room is attached to the corn-exchange, measuring some 32 feet by 14 feet. The corn-exchange is intended to be used for concerts and public meetings of all kinds: it has, therefore, been fitted up with gas. The exchange is heated by hot water, on Haden's principle, by whom the work has been executed. The contractors for the exchange are Messrs. Jones and Son. The carving is by Mr. H. Frith, of this city. The architects of the building and the general market are Messrs. Medland and Maberly.

*Neath.*—The foundation-stone of Alderman Davies's Charity Schools was laid last week. The schools are to be built in the Early English style, and will provide accommodation for about 600 scholars. The architect is Mr. E. Moxham, of Neath.

*Leicester.*—A memorial has just been erected at Bow-bridge, Leicester, whereon it is recorded that near that spot lie the remains of King Richard. It is set in the gable of a new building there. The monument is in Kelton stone.

*Birmingham.*—The opening of the Adderley-park Library and Museum took place on Monday in last week. There was a dinner, the proceedings of which were not open to reporters. At the dinner were present—Lord Lytton, Lord Leigh, Sir Robert Peel, bart. M.P.; Mr. C. B. Adderley, M.P.; Mr. J. Ratcliff, mayor of Birmingham, &c. A feature of the proceedings was the presentation of a testimonial to Mr. Charles Ratcliff. The testimonial consisted chiefly of a piece of plate.

*Edgbaston.*—The new vestry-hall, for the parish of Edgbaston, has been recently completed. The architect was Mr. F. W. Fiddian, and the builder, Mr. John Cresswell. It is calculated to hold about 400 people.

*Liverpool.*—There are various street buildings of some pretensions in progress, and for some account of which we are indebted to the *Albion*. The large structure belonging to the Liverpool and London Insurance Company, on the site of the old police-court, in High-street, adjoining the Exchange-buildings, and occupying the frontages to Exchange-street East and Dale-street, is far advanced. The style is Venetian Renaissance. The plan consists of four blocks of buildings—the south wing, fronting Dale-street, with an entrance opposite Moss's Bank;



the north wing, fronting the Exchange-buildings; and the central buildings in High-street and Exchange-street East. These four blocks have an open area in the centre (to be covered by a glass roof), which not only gives light to the inner portions of the structure, but furnishes ready means of access to the various floors by steps and galleries. The second floor will be supported by cast-iron columns, rising from the basement, and bearing cast-iron girders, between which and the floor fire-proof brick arches will be formed. A number of these columns are hollow, and are made to serve as chimney-flues. The plinth of the building is granite, supplied by Newall and Co. of Dumfries; and the external masonry is Darley Dale stone, of which St. George's-hall, the Branch Bank of England, and other edifices in the town have been constructed. The arches over the entrances in Dale-street and High-street, and the carvings, are in Caen stone. The masonry to the ground-floor story consists of large blocks of stone, the piers which carry the arching to the ground-floor windows being in one stone from window-sill to impost, measuring about 4 feet wide and 8 feet high. In the principal entrance, in Dale-street, there will be a doorway of polished red granite, supplied by Mr. M'Donald, of Aberdeen. It will consist of two Doric columns and entablature. Over the entrance to the basement, from Exchange-street East, there are some large York landings, one of them being upwards of 13 feet by 9 feet, and 8 inches thick. These, and the masonry in general, were raised by two travellers, or jemies, on a double set of staging. The building, when completed, will be 60 feet high. It covers an area of about 1,500 yards. The cost of the land was upwards of 70,000*l.*; and the contract for the erection is over 35,000*l.* to which there will be some slight additional cost. The carving is chiefly by Mr. Stirling, of Liverpool, portions being in the hands of Mr. Nicholls, of London, who executed the carving for St. George's-hall; the masonry, by Mr. Wells, of Liverpool; the carpentry, by Messrs. Haigh and Co. the sole contractors; and the brickwork, by Messrs. Jump and Son. Professor Cockerell is the architect. The new block of offices on the site of the old iron warehouse, at the bottom of Water-street, belonging to Sir Joseph Bailey, is also ready for the first floor, and the cast-iron columns and girders are fixed for its reception. The style of this building is perhaps more that of Florentine Renaissance than anything else, although very freely treated by the architect, Mr. Counsellor Pictou, of Liverpool. The ground-floor is slightly Gothic in its treatment. The grand entrance from Water-street has a polished granite doorway, surmounted by sculpture, representing a wreath of fruit and flowers, the design for which is borrowed from St. George's-hall. The Venetian windows have polished red granite pillars, with capitals, composed of natural foliage, conventionally arranged, designed by Mr. Pictou and his son, as stated by the former gentleman at a recent meeting of the Liverpool Architectural Society. Mr. Hugh Yates has the contract for the masonry; Messrs. Jump and Son, the brickwork; and Mr. Borrow, the carpentry. Mr. Pictou, who, adds the *Albion*, is professionally doing so much to beautify and ornament the town, has also erected the new pile, in the Italian style of architecture, at the corner of Rumbold-street and Water-street, for the Cunard Company. Another block of stone buildings, the property of Mr. John Naylor, banker, is being erected in Oldhall-street, covering about an acre of land. The architect is Mr. J. K. Colling, of London, who restored Hooton-hall. He has made a very free treatment of the Renaissance, with Arabesque variations. There is a central area, having a grand entrance from Oldhall-street, with blocks of buildings ranged around. Messrs. Holme and Nichol are the contractors, and Mr. Parker has the masonry. The design for this building was in the Architectural Exhibition in London. The Roman Catholic cathedral in St. James's-street, for which Mr. Pugin is the architect, is progressing gradually.

**Perth.**—Government, it is said, has accepted tenders for the erection of extensive additions to the General Prison at Perth, which will cost

nearly 30,000*l.* The works will consist of a new wing of four stories or galleries, containing 204 cells, with suitable association-rooms for the confinement of female convicts upon the principle of association: improved accommodation for juvenile prisoners will also be provided, and the chapel is to be enlarged. The plans were prepared by Mr. Matheson, architect for H.M.'s Board of Works, and operations will be immediately commenced.

#### CHURCH-BUILDING NEWS.

**Castle Rising.**—The restoration of the chancel of the church of St. Lawrence, Rising, was completed on New Year's day. This work is supplementary to the complete restoration of the nave and tower some years since; and the only part of the building now requiring re-edification appears to be the south transept, of which no remains are visible except the beautiful arch which formerly opened into it from the tower, but is now blocked up. In the chancel restoration, the style of architecture throughout adhered to is the Early English. The walls have been re-cast and partly rebuilt, the old roof removed, and replaced by a new one at a higher pitch, covered with lead, with gable copings and cross. Internally the roof is of English oak, raised upon a carved stone cornice having a running ornament of three different patterns. A new lancet window has been inserted in the north wall, filled with painted glass by Mr. Lamb, of London. Thus with the two new windows on the south side, and the three-light eastern window, already existing, the chancel is entirely lighted with painted glass. The reredos consists of five elaborately diapered panels of Caen stone in an arcade, the shafts of which are of dark-coloured Devonshire marble. A similar arcade is continued along the eastern wall meeting, on the north, the credence-table, and on the south the piscina and sedilia. The flooring of the chancel is of Minton's tiles. The chancel is warmed by hot water, the pipe trenches being covered with perforated tiles, patented, we understand, by the brother of the rector. An improvement has been effected by the removal from the chancel into the tower, of all the monumental tablets, the memorial of the late Colonel Howard being also removed to the otherwise nearly blank north wall of the nave. The whole of these works have been executed at the sole expense of the Hon. Mrs. Howard. The builders employed were, for the stonework, Mr. Brown, of Lynn; and for the woodwork, Mr. Taylor, of Norwich. Mr. Street, of London, was the architect.

**Worcester.**—The consent of Sir George Grey has just been obtained, to the land presented by Mr. W. Laslett, M.P. being used as the burial-ground for the city of Worcester; and Mr. Purches, the surveyor to the Local Board of Health, has received instructions to make a survey of the site, with plans, sections, &c. for the use of the Burial Board.

**Nunton.**—A monument has just been erected in the church at Nunton, by Messrs. Osmond and Son, of Salisbury, to the son of Major-general Buckley, M.P. who fell before Sebastopol. It is of Gothic design, and is embellished with military emblems.

**Charlcombe.**—A vestry meeting of the inhabitants of this parish was held on the 2nd inst. "for the purpose of taking into consideration the propriety of authorizing the rector and churchwarden to apply to the Bishop's Court for a faculty for restoring, repairing, and altering the parish church, according to the plans and specifications to be then produced, and also figuring a rate for the same. The churchwarden proposed "that the plan and specifications of Mr. Scott be adopted; that a rate, not exceeding 200*l.* be made for the purpose of carrying out the repairs; and that the rector be authorized to apply to the bishop for the proper faculty." The rector explained that Mr. Scott's proposition was, to leave the tower standing, to take down all the walls and the roof, but leaving parts of the porch and the Norman arch opposite the door. All the rest Mr. Scott had pronounced, through his chief manager, to be unsafe. After some discussion the resolution was agreed to by a majority of 14 to 3.

**Ripley.**—The Burial Board for this town have

selected designs for their proposed erections from those sent in in answer to advertisement. The designs chosen having been approved of by the bishop of the diocese and the Secretary of State, tenders were advertised for, and the result of those sent by five different builders was, that Mr. G. Roe's was accepted, he being some 40*l.* lower than the architect's estimate. The architect employed is Mr. Charles H. Edwards, of London.

**Doncaster.**—The town council have agreed to give the 4,000*l.* requisite towards the completion of the parish church, in yearly instalments of 1,000*l.* Mr. Denison, Q.C. guarantees the balance, towards which he gives 1,000*l.* The sculptured figure of the Saviour, in Portland stone, the production of Mr. Phillips, to whom the whole carving of the edifice, both externally and internally, has been entrusted, has been placed in the ornamental niche prepared for its reception above the great western window. The figure is nearly 5 feet high, in a sitting posture. The left hand holds an orb surmounted by the cross. The right arm is elevated, in the act of benediction. The figure is the gift of the architect.

#### THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE LATE JOHN BRITTON.

At a meeting of the Institute of Architects, held on Monday evening, the 12th inst. Mr. G. G. Scott, V.P. in the chair, after the routine business, Mr. Digby Wyatt announced the death of Mr. Britton, an honorary member of the Institute, and read a sketch of his useful life, and a warm and well-written eulogium:—

"To estimate the value of John Britton's labours aright," said Mr. Wyatt, "we must remember that before his time popular topography was unknown. The ponderous volumes of county histories were valuable as record rooms, but useless as libraries. The text-books—Gough's 'Camden,' King's 'Munimenta Antiqua,' Cox's 'Magna Britannia,' and Buck's 'Antiques,' were heavy and opaque. The facetious Captain Grose was the leading antiquary, and Gilpin furnished a sample of the florid style of picturesque description of scenes and localities. Price, Knight, and Repton, did much to draw attention to other details than those of genealogies and the descent of hereditaments. Any thing, however, like a fusion of the two styles had not been attempted at the period when John Britton commenced combining antiquarian with topographic description. The pictorial illustrations of our national monuments at the close of the last century were of the most loose and imperfect description. Since the careful prints of Hollar, scarcely any engravings of architectural subjects had appeared worthy of notice or reliance; and the early productions of the Antiquarian Society presented the only approximation to accuracy. James Basire, Rooker, and Lowry, were the fashionable engravers of such subjects; and John Carter, and Fowler, who illustrated stained glass and ancient mosaics, almost the only trustworthy draughtsmen. It was mainly through John Britton's energy that a reformation was effected. His activity and enthusiasm soon gathered about him all those rising men whose names are now so familiar to us. He saw from the improvements which had been effected, mainly by Stothard, and Heath, the engraver, the capabilities of copperplate engraving; and speedily brought to bear upon the long neglected antiquities of the country, that artistic ability through the exercise of which they could alone be popularized. Samuel Prout, Frederick Mackenzie, Edward Blore, George Catermole, W. H. Bartlett, R. W. Billings, Henry Shaw, and many more, were at various periods induced to bestow their earnest efforts upon the proper delineation of those views which were so successfully transferred to copper by the brothers, John and Henry Le Keux, and other engravers, for the most part pupils of Basire. Public attention was captivated by the excellencies of the engravings of the architectural antiquities of the land, and the excitement which at first took the form of vague admiration, has in our time reached its happy consummation in profound investigation into the true principles upon which they depended for grandeur and effect, and in a wise and wholesome spirit of conservatism. For much of this, the country is deeply indebted to that friend we have so lately lost. His labours were incessant, his memory extraordinary, his system admirable, his clearness of understanding, and liveliness of fancy in no common way vigorous, his affections warm, his habits exemplary. Had he been less honest he might have been far richer; had he been more selfish he would never have benefited his country as



he unquestionably did. Were abundant time at my disposal, I could scarcely condense into an evening's discourse an enumeration of the great variety of subjects which engaged his active attention. It must be manifest, therefore, that John Britton's claims upon our gratitude are infinitely more weighty and numerous than words of mine can urge upon the present occasion. I can only sum up this hasty tribute to his memory by an expression of my confident belief that he was to this country infinitely more than that other great archaeologist, whose loss we have had to deplore this session—Canina—was to his."

The council then submitted a proposition to the members present, to the effect, that it would be a graceful tribute of respect to the memory of one whose services to the profession have been of an unexampled character, if a memorial tablet were erected by the Institute, to commemorate those services, and to record their regard for Mr. Britton: and it was further suggested, that it would be expedient to make an application to the Dean and Chapter of Salisbury, expressing the hope that permission would be granted for the erection of the memorial in that cathedral, which is at the same time the mother church of the diocese, and of the county in which he was born, and also the first cathedral of which he undertook the graphic illustration. The proposition was received with acclamation, and will be acted on forthwith.

Mr. T'Anson then read a paper on "The Castle of Heidelberg," to which we shall refer hereafter.

#### BRITISH ARCHÆOLOGICAL ASSOCIATION.

A MEETING of the Association was held at their rooms on Wednesday evening, the 14th, Mr. Godwin, V.P. in the chair, when the names of various new members were announced. At the request of the Council, the chairman announced the death of Mr. Britton, and sketched briefly his career,—a career, he said, which teaches us that the greatest disadvantages may be overcome by integrity, a clear head, and a determined will; and that it is not necessary to be either learned or rich to make a name that posterity will regard. Mr. Pettigrew addressed the meeting feelingly on the same subject.

Mr. Planché then read a very acute and elaborate paper "On the Sculptures in the West Front of Wells Cathedral," in reply to the work on the subject published by Professor Cockerell. Written in the mildest tone, and with an evident desire to avoid the least appearance of hostility, the paper was so complete a denial of the theory, and even of the facts, put forth by Mr. Cockerell, that it will demand the immediate attention of the learned professor if he desire to maintain the character of his book. Thanks, of more than ordinary strength, were voted to Mr. Planché for his Essay.

#### DEPARTMENT OF SCIENCE AND ART.

##### EXAMINATION OF TRAINING MASTERS.

It is somewhat noticeable that within the last few years examinations should have come to be regarded as the most efficient tests, wherewith to discover the competency of men who are candidates for Government appointments.

The system is a healthy one; for, although it may sometimes result in barring from the service of the country, men possessing great though perhaps eccentric genius, yet it closes our Government departments against those who have no abilities, and whilst it is no surety for obtaining the best men for public services, it is a safeguard against the worst.

The anxiety shown by many architects for examination for diplomas in that profession shows how deeply the feeling for such a test has taken root, and it is to be regarded as a morally healthy sign, indicative of systematic study. For the knowledge which thus voluntarily seeks for a test must be conscious of its own power; although, perhaps, influenced to ask for the criterion by the undue success of those who possess neither knowledge nor power.

As a practical result of this movement, we may in future expect to find, in our public departments, men possessing positive as well as comparative merit.

Allowing all this as an argument for examination, we confess we were in some degree surprised in hearing of an examination in general knowledge having taken place at Marlborough House in October last, of the artists, who, as masters in the London schools of art, and students of the head school, compose the training-class of the Department of Science and Art. For we believe that previous to this there has been no instance of an examination, embracing branches of knowledge which have not in a great degree been necessary for the efficient discharge of those duties which devolved upon successful candi-

dates; whilst this test, although comprising subjects which are regarded as very important items in an artist's education, yet had no very radical influence on the application of his art.

The examination embraced the ordinary subjects of a general education,—English history, arithmetic, &c.; and we subjoin Dr. Playfair's report:—

"As the result of a first examination, the returns may be considered satisfactory.

None of the students will be registered as having altogether failed, but those who stand with the letter C in the second class must come up for a new examination in all those subjects in which they are marked above 3 in the column of the table.

In subsequent examinations, those who only display the knowledge indicated by the letter C in the second class will not be admitted to the paid list of the training class until they have obtained a higher position."

The table of results is so constructed that the lowest marks indicate the highest positions—1 representing a high degree of attainment—so that the figure 3 would show comparatively a failure in that particular branch.

The letter C being the third division of the class, where it occurs in the second class, stands as a low mark.

In an examination of forty-two men, four only had this mark, and three of these through their bad penmanship—a common failing amongst artists.

#### THE ACCIDENT ON CORNHILL.

ON the 5th instant an accident occurred at Messrs. Sarl's premises, on Cornhill, which caused loss of life. The workmen in raising or setting a stone at the top of the house, without taking proper precautions, threw it off its balance, and it fell over the scaffold and killed a poor fellow who was standing below just under the edge of it. The scaffolding was formed as is now usually the case, in narrow thoroughfares, so as to allow passengers under it, and not to stop the pathway, the shop being kept open; and some correspondents of the newspapers have attributed blame, to those concerned, for not making a temporary path in the roadway. Keeping open an attractive shop in such a position is decidedly objectionable; but it has been shown that the scaffold was a perfectly good one, and the arrangement the best under the circumstances.

#### BERWICK CORN-EXCHANGE COMPETITION.

A CORRESPONDENT, on the part of the company, writes,—“As the best practical answer to certain strictures which appeared a short time ago in the *Builder*, on the instructions to architects, issued for the proposed Corn-Exchange, in Berwick, it may be stated that fifty-four designs have been lodged. A definite selection has not yet been made.”

#### WOLVERHAMPTON WORKHOUSE COMPETITION.

THE plans of Messrs. Bidlake and Lovatt were selected on Friday, the 9th, from four sets of plans submitted in competition for the extension of the Wolverhampton Workhouse.

#### MEETING OF UNEMPLOYED ARTISANS IN CONNEXION WITH THE BUILDING TRADE.

ON Monday, the 12th, a very large meeting of unemployed artisans was held in Smithfield. The meeting was called for the purpose of taking into consideration the present distressing position of that body.

Mr. Hugh Pearce was voted to the chair. He said at the present time there were upwards of 25,000 persons connected with the building trade in London unemployed. He should like to know how this depression had been brought about. It was all very well for the Government to state, and to blazon abroad to foreign nations, the glorious prosperity of this country; but let it look at home, and see the number of unemployed artisans before they entered into costly wars for what they called the independence and welfare of a people who, he (the chairman) had no doubt, were much better off than the workmen of this country. His suggestion was that they should apply *en masse* to the various unions for relief. They must remember that the poor-law was a national right. Let them ask what could be granted,—like men of common sense,—for what they required, and not waste their time and labour in discussing the Utopias of vain men, or the political crochets of professional agitators. Hitherto Englishmen appeared to be actuated by false pride, for when out of work they seemed to think it a degradation to apply for relief at the union; but they should remember that the poor-

law was a national institution, and that the relief it gave was their own. They should enforce that right when necessity compelled it, and then such a pressure would be brought to bear upon the ratepayers that the Government would be obliged to retrench some of its useless expenditure, and apply the saving to the construction of useful public works.

The following resolutions were afterwards proposed and carried:—

“That the unemployed workmen here assembled, being fit objects for relief under the Poor-law, should forthwith apply in masses at their various parishes and demand such casual support while out of work as they are by law entitled to, and in the meantime the Executive Council shall draw up a petition in the name and on behalf of the unemployed, praying her Most Gracious Majesty the Queen to call the attention of the Government to the necessity of employing the surplus labour population upon the waste lands of the country, granting them also the loan of a portion of the surplus revenue for draining and tilling the same, to the end that their present impending ruin may be prevented, and corn produced in sufficient abundance to meet the wants of all.”

“That the Government open an extensive system of emigration for all those who, being unable to procure employment, do not wish to be put upon the land, but prefer to leave their native country; thereby to add to the wealth of the colonies, and be enabled to better their own condition at the same time.”

#### HOVEHEAD HARBOUR.

THIS great national work, which is being carried out, under the immediate direction of the Board of Admiralty, by the Messrs. J. and C. Rigby, of Westminster, affords periodically, to the civil and military engineer, as well as to the scientific and intelligent inquirer, an opportunity of witnessing the effect of large quantities of powder brought to bear in the dislodgment of immense masses of the hardest description of quartz rock, amounting in several instances to upwards of 100,000 tons, another of which stupendous blasting operations was to take place on the 16th instant, at noon. This operation was to act upon a face of rock 115 feet in height, 210 feet in length, with an average line of least resistance of 25 feet, and was calculated to throw down upwards of 100,000 tons of rock, for transmission to the breakwater, with an aggregate charge, in the four compartments or chambers, of not less than 16,000lbs. of powder. Upwards of four million tons have been already dislodged by this means for the construction of the harbour, without failure and without accident.

#### SCENERY AT THE LYCEUM THEATRE.

THE transformation scene of the extravaganza-pantomime at this theatre, “Conrad and Medora,” has been very much praised, and not improperly. As a series of mechanical arrangements and a piece of colour it is equally excellent. It presents five distinct movements, and is glittering and gorgeous, without glare or vulgarity. Some of the other scenery is also very good. Mr. Frederick Fenton has long been favourably known, but has never done anything so good as this before. Mr. Dillon, in his efforts to maintain the character of the theatre, in several cases very successful, must strive for accuracy in his scenery and costumes. He must not permit any more such blunders, for example, as some that were apparent in the piece called “The Cagot,” for which, though laid in the fifteenth century, we had rooms of the seventeenth and eighteenth. The last scene had a Gothic screen and a Louis XVI. ceiling. We mention this, not to disparage, but to awaken attention.

#### THE PHOTO-GALVANOGRAPHIC PROCESS OF ENGRAVING.

LIGHT and electricity have been put into harness by Mr. Paul Pretsch, lately the manager of the Imperial Austrian Printing Office at Vienna, and trained to perform the united functions of the artist-draughtsman and engraver.

The first steps of this photo-galvanographic process are similar to those adopted by the glass-plate photographer. The operator coats a glass plate with a gelatinous solution, suitably prepared with chemical ingredients sensitive to light. These compounds form the coating material, which is allowed to dry upon the glass or other plate which is coated with it. When dry, the coated plate is exposed to the light in a copying frame, in contact with the print or drawing which is to be copied. After exposure, the plate exhibits a faint picture on the smooth surface of the sensitive coating, and it is washed with certain solutions, when the whole image comes out in relief, whilst the tints of the original are still maintained. When sufficiently developed, this relief plate is dried and moulded. The mould is prepared for electric conduction, placed in the electrolyte battery, producing a thin copper-plate or matrix, which is used for producing finally the intaglio printing plate.

With this printing process there is no fear of fading, as the plate impressions are in ink, and the



attention of an ordinary printer suffices to keep the pictures to the proper colour.

We have seen some remarkable specimens, especially from Gothic buildings, and look for great things from the process. The Company, amongst other works, propose to publish, from photographic originals "The Cathedral Antiquities of the British Empire;"—the plates to be engraved by the Company's patent process, on a scale of great magnificence.

### Books Received.

*Descriptive Essays; contributed to the "Quarterly Review."* By SIR FRANCIS B. HEAD, Bart. In two volumes. Murray, Albemarle-street. 1857.

THIS "brood of literary chickens," as the author, with that pleasant pen of his, describes them, were all, save one, brought forth in that celebrated hatching-machine, "the *Quarterly*," and now they "migrate from their coop, to fare, in the wide world, for themselves." There is no fear of such lively chickens being unable to "pick up a living." Few of Sir F. B. Head's numerous readers will think it supererogatory to purchase a collected edition of his graphic essays merely because they have already perused them in their original "*Quarterly*" *vidus*: on the contrary, these are likely to be their most assured purchasers. The book contains several articles of special value to our own professional readers, such as those on "The Britannia Bridge," "The London and North-Western Railway," "The Air we live in," "The Electric Telegraph," and "Locomotion by Steam." There are also very interesting articles on the "Cornish Miners in America," on "English Charity," "The London Post-office," "The Red Man," "The Printers' Devil," "The Battle of Waterloo," and "British Policy,"—a "strange story," in which Canada, Lord Durham, and Sir F. B. Head prominently figure.

*The Business Man's Note-Book and Desk Directory for 1857.* Edited by JAMES HOGG, jun. Fellow of the Statistical Society of London, &c. Edinburgh: Hogg. London: Groombridge.

AT the end of last month Mr. Hogg's welcome aid to business was issued in a much enlarged and still more valuable form than heretofore. The Directory has grown into a thick volume of nearly 500 pages, containing an immense amount of useful matter. Unreadable and unrefractory blue-books are here by the score transmuted into a readable red-book of easy reference, teeming with the statistics of trade and commerce, agriculture, fisheries, mines, transport, banking, revenue and taxes, stocks and shares, foreign commerce and finance, British and foreign weights and measures, and calculating tables, tariffs and trade usance, &c. &c. From Mr. Hogg's known character for accuracy and industrious research, every confidence may be placed in the correctness of the vast mass of statistical and other information here embodied into a most valuable addition to the desk and the writing-table. With the Directory there is a cloth case, containing various tables and maps,—statistics of the British colonies,—map of the electric-telegraph system of Europe,—balance-sheet of nations,—table of Indian territories,—table of treaties and partitions,—war-tables, &c.

*Useful Information for Engineers, with Appendices.* By WILLIAM FAIRBAIRN, F.R.S. &c. Second edition. London: Longman and Co. 1856.

THE first edition of this valuable work, issued in December, 1855 (and noticed by us at some length shortly afterwards) has been already exhausted, and the present edition being called for has been issued in a cheap form, so as to secure the volume a still wider circulation, especially amongst those working engineers for whose advantage the lectures were originally delivered. For facility of reference, the order of the lectures has been changed, and at the end has been placed a short notice of the results of the experiments which Mr. Fairbairn recently conducted, at the request of the Royal Society and the British Association, on the resistance of cylindrical vessels to compression from an

external and surrounding force. These experiments, it is believed, will modify generally received opinions as to the strength of boiler-flues and other cylindrical tubes similarly placed.

*Visits to Remarkable Places.* By WILLIAM HOWITT. Third edition. London: Longman and Co. 1856.

MR. HOWITT'S two elegant volumes, on old halls, battle-fields, and scenes illustrative of striking passages in English history and poetry, have reached a third edition, issued, however, without note or comment, other than the brief advertisements of 1839 and 1841, which accompanied the two volumes as they were respectively first issued. The work is illustrated by numerous sketches of scenes and places, most of them exceedingly well known and appreciated. Aluwick is one of the places visited, and the graceful and original pen of Mr. Howitt is well adapted to enhance the interest which recent discussions have excited in respect to this famous spot in England's history. But indeed the whole work displays a rich field of historical and archaeological matter, as must be evident from the mere mention of such names as Lindisfarne, Culioden and Flodden, Stratford-on-Avon, Hampton Court, Raby Castle and Brancepeth, Winchester, Seaton Delaval, Berwick and the Borders, and many more that might be named with these. The book is beautifully got up, and full of the interest attached to our ancient architectural relics and ancestral homes.

### Miscellanea.

**THE LATE MR. THOMAS SEDDON, ARTIST.**—Not very long ago we spoke of some pictures of great merit made in the Holy Land by Mr. Thos. Seddon; and we have now to mention, and we do so with great sorrow, that Mr. Seddon set off last autumn on a second professional journey to the East, and, very shortly after his arrival, died at Cairo, from an attack of dysentery, on the 23rd November. Unhappily, too, he leaves a widow and an infant daughter, Mr. Holman Hunt, Mr. Maddox Brown, and other gentlemen who knew Mr. Seddon's worth, are anxious to do something which shall be honourable to his memory as an artist of elevated aims and of undaunted energy, and which shall at the same time be useful to the wife and child who have so suddenly become widow and orphan. It is proposed to hold an exhibition of the works which Mr. Seddon has left; to purchase from his widow, by subscription, the principal work, an oil-picture of Jerusalem, for presentation to some public institution; and, if any surplus funds should accrue from subscription, to request Mrs. Seddon's acceptance of them. Resolutions to this effect will be submitted to the meeting, which is fixed for the 2nd of February. Mr. W. M. Rossetti, of 45, Upper Albany-street, Regent's-park, has agreed to act as honorary secretary, and will receive the names of any gentlemen willing to assist in the good object proposed.

**A BUILDER'S CLAIM.**—In the Court of Passage, at Liverpool, on Thursday last week, William Bateman, a Liverpool builder, claimed from Mr. John Moss the sum of 291l. 11s. 4½d. for altering and repairing his residence, Beech-house, Aigburth. The sum of 150l. had been paid into court, and to the rest of the claim the defendant pleaded that the plaintiff agreed to complete the alterations before the 10th May, 1856, or in default to forfeit seven guineas for every week's delay beyond that date, and that penalties had occurred under that agreement sufficient to cover the amount. The plaintiff replied that the delay was occasioned by the defendant's own default, he having ordered other alterations to be made of such a nature as to render it impossible to complete the alterations originally contemplated within the specified time. The plaintiff's case having proceeded for a short time, it was agreed that the matter should be referred to Mr. Culshaw, architect and surveyor, and a verdict for the plaintiff was entered, subject to his decision.

**THE LATE MR. BREBNER, CONTRACTOR.**—We are sorry to announce the death of Mr. Brebner, railway contractor, which took place last week, at his residence at Badenscoth. Mr. Brebner has been in delicate health for some time, but the disease under which he fell was a virulent form of typhus fever. Mr. Brebner was contractor for the Banff, Macleod, and Turriff Extension Railway, which is far advanced, and which should be opened by the last of June next. He was also contractor for the Alford Valley Railway; and had besides a share of the contract of the Inverness and Aberdeen Junction Railway.

**FAIL OF AN OLD HOUSE IN SPITALFIELDS.**—On Sunday last a dilapidated building, one of a number of extremely old houses, in Dorset-street, Spitalfields, and, occupied by no less than sixteen families, was destroyed by the fall of its lofty stack of chimneys through the floors, killing a child and seriously injuring a number of the poor residents. An inquiry will be made.

**THE CRYSTAL PALACE.**—Many, we dare say, have wondered and inquired what *could* be the use of those long corridors through which Crystal Palace frequenters must tramp—we had almost said for miles—ere the glories of the interior open on their gaze. Such of them as have visited the Palace within the last week, must have had this important question satisfactorily solved by the interesting sight which then presented itself to the eye, and the not quite so interesting sounds which *babel'd* in their ear. Sir Joseph Paxton must have clearly had visions of poultry exhibitions in his mind's eye (as well as flower-shows and picture galleries), when he planned these "long drawn" corridors appendages to the Crystal Palace. They are admirably suited to their purpose, and vast as is their expanse, the wider parts were more than filled with thousands of not very "dumb animals," the eternal chatter and screech of which was (at first) really amusing, but at last scarcely tolerable. We do not pretend to be judges of poultry, at least in their feathery dresses, but this is said to have been one of the most important exhibitions, at least in number, that ever was held.

**THE ARCHITECTURAL EXHIBITION.**—On Tuesday evening last, the Rev. J. L. Petit, gave an elaborate lecture "On the Application of Gothic Architecture to civil and domestic Purposes," which was illustrated by a very large number of his own sketches. We shall print a portion of it in Mr. Petit's own words in an ensuing number.

**SALE OF MODERN DRAWINGS.**—We go a little way out of our course to point attention to a sale of drawings and other objects of art by Mr. Fredk. D. Godwin, advertised for Thursday, the 29th inst. in Old Bond-street, because we happen to know that the collection is genuine, and includes some good specimens. There are drawings by Farrier, Robins, Dewiat, Herbert, Howes, Varley, Sidney Cooper, Weigall, E. Corbould, Williams, David Cox, Dujardin, Warren, and others, together with some bronzes and Sèvres and Dresden china.

**ARCHITECTURAL INSTITUTE OF SCOTLAND.**—A meeting of the Architectural Institute of Scotland was held on the 13th, Sir John Stuart Forbes in the chair, when Bishop Terrot read a paper "On the Elements of Architectural Beauty, in reference to the recent Structures in Paris."

**CONSECRATION OF ST. PETER'S CHURCH, NOTTING-HILL.**—The new church of St. Peter, which has just been erected in the rapidly-extending district of Notting-hill, was consecrated last week by the Bishop of London. A district for the new church has been assigned out of the parish of Kensington.

**CHESTER ARCHAEOLOGICAL SOCIETY.**—The monthly meeting of this society was held in the City News-room, Chester, on Monday evening before last. Dr. Moffat, of Hawarden, read a paper on "The Origin of the Arch," tracing its use back to the most remote antiquity. Mr. Hicklin followed with a paper on "The Benedictine Abbey of St. Werburgh," announcing it as the prelude of a more important dissertation on the monastic system generally. Mr. T. Hughes then introduced some particulars relative to the "Cowpers of Overleigh," a family long connected with the local government of Chester.

**LINCOLN DIOCESAN ARCHITECTURAL SOCIETY.**—As the new rooms of this society in Lincoln are not ready, its bi-monthly meeting was held on Friday, January 2nd, at Mr. Loder's, near the Stone-bow, which was largely attended, and, in the absence of Sir Charles Anderson, the Rev. F. Massingberd took the chair. A total of forty-three members have joined the society during the last two months. Various plans and designs of proposed works were exhibited, and a large number of designs for head-stones were submitted by the honorary acting secretary, which he proposed should form a portion of a manual for the use of Burial Boards, *namely*, &c. The secretary announced a proposal that had been made to endeavour to save the west front of Croxland Abbey from falling.

**COLUMNS IN SUSPENSE.**—Stop him! Stop him! Where *are* the police? or are there none at South Kensington? Talk of the abolition of capital punishment! when some (possibly ticket-of-leave) man has actually constructed an order of columns, on trusses, in the first-floor of the elevation of the two large houses on Lord Harrington's property, on the very spot which is to be consecrated to our art treasures! After this the garotte will lose its terrors—the new horror will be the suspended columns of South Kensington. The criminal is still at large.—MARY ANN SYKES, School of Design.



# The Builder.

VOL. XV.—No. 729.

**N**OW that the Department of Art has actually quartered itself in Brompton,—or “South Kensington,” as it is erroneously called in the mood for changing which rather tends to characterize the Department,—we may be allowed to look at the arrangements so far as they are completed, and to gather what are some of the prospects for the national work of art-education,—already commenced, and lately progressing, on the whole under judicious management, and with encouraging success. The rooms at Marlborough House, doubtless, were inadequate as to space, and unsuitable,—except regarded as temporary accommodation: but something in architectural and structural provisions immensely better, and in other advantages extraordinary, there should be at the new local habitation, to compensate for abandoning the power to act directly upon those for whom the instruction as we may suppose is intended. These classes we assume to be art-students of all descriptions, teachers in schools, building artisans, and persons engaged in handicrafts and trades, who are residing, necessarily, in all districts of London. For the building artisans, or “art-workmen,”—they are more likely to be found in Gray’s-inn-lane, Clerkenwell, Hoxton, Spitalfields, or Lambeth, than in the agreeable suburb of Brompton, where they cannot hope to reside, and which is too distant, if not too expensive, to get to, for any number of visits. As to such visits, we may observe that the argument from the Exhibition of 1851, which, if we rightly understand, is still adduced, we believe is quite beside the present question,—in short, another of the false applications of statistics. On that occasion, the objects of interest were so multifarious, the field of instruction was so vast, and the passing time was so short, that all persons were induced to make great sacrifices in the hope of seizing something whilst there was the chance. We should like to know, however, after deducting all the official staff, and all who neglected their private affairs but would not encounter such risk again, and all the mob of holiday-makers and country cousins, how many there were who got rid of the bewilderment of the scene, and used the Exhibition in the proper manner, as contemplated by those who set it going. Neither is the average success of the Crystal Palace at Sydenham so great,—commercially and as to the number of visitors, compared with the attraction for them,—or educationally and as to the use made of the wonderful collection of works of art,—as to supply any argument for another case.

The point to be considered in the removal of the various schools and collections of works of art, to Brompton or Kensington, is not what can be provided for people who can take a day’s holiday, but what should be made available to those with whom art is a continuous study, and to those who have daily avocations requiring occasional reference to a museum and library, which last object is, perhaps, of most importance in the question. The library of the British Museum, with all the inconveniences, to a great degree inseparable from its magnitude, is largely resorted to for mere reference. Such advantages would be far more within the scope of provision by a collection devoted to one range

of subject,—as that of art or science. Indeed, the very objects comprehensive, which are rightly provided for at a central home of learning, involve some disadvantages which render desirable, separate collections in departments of knowledge and study,—but equally if for purposes of reference, in central situations.

The position *contra* we understand to be (omitting for the moment, consideration of the supposed site for a new National Gallery, and any asserted requirement as to union with it), that the present buildings are merely for headquarters, which it is not very material to place in a central situation, seeing that for the future, instruction must be carried on at metropolitan district schools and towns in the provinces, to which books from the library and objects from the Museum would be lent as wanted. To this latter course as a principle, we should be wholly opposed: London and constantly accessible materials at some one spot, form the first object for consideration; and only duplicates, or transcripts and copies, are what should pass out of doors. If the collections are worth a tenth of what they have cost, one purpose must be their preservation,—regarding both commercial value and the reference to them. To move the books and specimens about, would be not to ensure their accessibility anywhere. In reality, however, instruction in art, equally with the other objects, forms a purpose of the buildings on the new site; and regarding what has been said above, it must be admitted there is great doubt whether the Architectural Museum, for example, will be as useful in its newly chosen quarters as in the old. The committee, however, were obliged to weigh circumstances.

Let it not be considered that we are either tardy or premature in referring now to the question of a locality. First, it was not announced that the removal of collections to that most discreditable thing—the Museum building—which the Department is so anxious to shift the blame of, was to involve either a permanent location thereabouts, or the removal of the Department from London. The National Gallery question was unsettled; nay, the immediate probabilities before and after the debates in Parliament, seemed against the Kensington site. And we cannot now see, even were a site out of town best for the National Gallery, that it should necessarily carry all the appliances of the Department of Art along with it, to the sacrifice of the advantages which that department especially must have and afford in a central situation. In short, if it could have been the purpose of the Department to take us by surprise, they have completely succeeded. If, on the other hand, it were supposed that such observations as those we make, would embarrass exertions which are honestly and zealously made for the public good, it could not be against us that accusations could be preferred. We animadvert, or observe, only upon the appearance of concealment where none is required,—on a course, too common in public affairs, where a question upon which opposition is apprehended, is not met, but settled out of sight, and before proper arguments can be heard,—a dangerous course which may answer for the time, but which we believe to be damaging to the *morale* of public men, and ultimately hurtful to the good object which may have been intended. It is because we would preserve the great objects of art-progress—and, if need were, the persons officially or influentially connected with the Department—from the danger which they run from the upshot of a debate in Parliament, that we counsel a revision of what may now be intended. Nowhere have we seen so much misapprehension of the nature, purpose, and value of art, as in the British House of Commons,—nowhere so many damaging reflections upon individuals engaged in contributing to art, who had no chance of a reply. How often, for example, has the archi-

tect of the Houses of Parliament been misrepresented, with no one courageous or honest enough to say a word in defence?

Regretting that there should be any occasion for going out of town at all, we accept the present arrangement as the temporary one,—for which, indeed only, the buildings are fitted. Thus looking at them, we regret that they are not quite finished, and that a portion of the appliances of the Department are not somewhere in operation. There is still vast scope for the agency of the Department upon public taste; and important as we believe such influence to be, and judicious and patriotic as mainly have been the exertions in that direction, there are not wanting those who impute motives which we neither believe, nor do we discover could apply in such a case. Public opinion, we say, must be openly courted; objections must be heard and met by argument—not by what would bear the aspect of concealment or evasion. With such views only do we enter upon an inspection of the premises at Brompton.

Yet, we have heard it suggested that it would be inadvisable, for common objects, to draw any attention to certain works in progress—considering that a fair opinion could not be formed until their completion. Were the question one merely of architectural design, as capable of being critically estimated from an unfinished structure, we should at once assent. Too many instances would occur to us, showing the danger of any opposite course. Nay, were this the proper opportunity, we should seize it to show the impossibility of judging of a building during its early progress. What could the opinion be worth, passed upon some of the finest church towers in England or Italy, without taking into view their upper stages? and let our readers note with us *en passant*—for the lesson is worth interjecting even here—how great is the change in the proportions of the towers of the Houses of Parliament by the completion of their terminations. No question of such a kind, however, is involved in what we would now inquire into,—but our question is, how far the calm and fair consideration of the locality for the permanent site of the Schools of Art, if not the National Gallery, is to be prejudiced by what is now done, or by some conclusion in the minds of individuals.

In the present working state of the arrangements at Brompton, the schools are in operation; but the library is being arranged; and the museum building is only now being made after some fashion to suit its purpose, at additional expense; and its future contents are not visible. The schools occupy some temporary wooden buildings, and rooms in certain houses which were standing on the ground. The latter have been converted to use with considerable skill on the part of Captain Fowke and others attached to the Department. Some of the attics are even picturesque; and the apartments of the female school have a look of comfort which has been very properly made an object. A sage green colour in the painting and paper, under the direction of Mr. Redgrave, has been adopted throughout. The temporary schools are suitable for their purpose, both as to lighting and the arrangement of the casts; and the examples placed before the students and the methods of tuition adopted, seem to have been chosen with care, and to be tending to the desired results. In the room occupied by the architectural drawing class, are a number of models of roof-trusses of unusual form, from buildings on the continent,—perhaps not in every case quite correct as to details,—yet giving much valuable information.

Between these buildings and the museum there is a considerable interval of ground, on which is erected a long, low brick building, with projections in the plan back and front, chiefly appropriated to the offices. Mr. Pennethorne is the



architect. A passage-way, lighted from the top, runs throughout, and forms the communication from the schools to the museum, and will afford ample room for casts. The main entrance transversely, to a central hall, has on one side of it the library, projecting from the general line of front, and in the corresponding position the board-room; and passing through from the hall, the theatre is reached. The latter is a circular hall, 42 feet 6 inches in diameter, lighted from the centre, the roof being framed without tie, the principals meeting at the apex, and springing from a double curb with inch plate iron, 7 inches in width, bolted through, forming a circuit. The suitability of the circular form for sound remains to be seen. Otherwise, this portion of the buildings is the only portion that could be considered as quite satisfactory. Externally, it is true, the design—for a plain brick building—has some degree of effect. The projections from the front, forming the library and board-room, have gabled ends, with roofs of low pitch, and windows arch-headed with red bricks. Internally, however, the rooms are low, and in some cases dark. The library, as first completed, was deficient in wall-space, and otherwise inconvenient,—so that certain side windows have lately been blocked up; the ceiling has been removed, and the roof timbers exposed, and a skylight has been put in. During these alterations, the wet appears to have got into the walls, and we question if it will be safe to range the books near them for many months to come. A height of about two feet additional was at first intended; but funds were wanting, or had been applied to other purposes. The buildings have been designed to last about ten years. The passages are plastered in three-coat work, finished by the hand-float. Some of the doorways, as to the library, are rather narrow.

The museum has been the subject of an abortive attempt at external improvement by decorative painting, which is applied in green and white stripes. The addition of a spacious portico, with light iron pillars, at the end, has a better result. The original errors in the design, however, remain, and tell in the result, as they do in all such cases where there is a mistake at the outset. The interior—which, as completed, did indeed realize considerable perspective effect—heightened by the precision with which the work was executed, and the regularity of all the lines and parts—is undergoing considerable modification, to now first render it suitable to receive its valuable contents, without injury to them from condensed moisture, and to allow of their classification. Plaster ceilings have been added to the roof, and to the spaces under galleries; and the area is divided in all parts by quarter-partitioning. Thus, so far from having a non-combustible building, we get one which is not only of the most combustible kind within, but which would inevitably get into a blaze were there a chance of fire externally in contact with its thin skin. Such is the consummation of the lesson which, in 1851, we architects were told as needed as to the use of iron. The truth is, that in the profession there has been no disregard of the peculiar resources and capabilities of iron and other metals. But, both in structure and decoration, iron has been grievously misused, and by those who assumed to know better than others its advantages. Much may yet be done towards the proper manner of applying it; but much also has been done to elucidate the subject; and the fact that iron has great capabilities is understood and acted upon. An architect, however, may well have acquired caution, from the frequent failures in materials presented to his notice—materials which he is called prejudiced for not admitting the advertised advantages of as entitling them to general and universal application. Every material has its special properties fitting it for particular structural offices, and for particular forms in the expression of beauty; but it requires time and thought to understand them,—to use the material for that alone to which it is adapted, and to avoid using it for that to which it is not. It is apprehension of this truth which is first needed, if we would both use the resources of our time, and so use them that our art shall not ever be in contrast with the wealth of our resources. Who does not recol-

lect the patriotic exultation of Lords and Commons, 1851 commissioners, members of the Society of Arts, engineers various, newspaper writers and quill-drivers everywhere, at the advent of what the very professor at the Academy termed the *iron order of architecture*? We were to have glass roofs universally,—to live in houses of iron and glass: our profession had been fast asleep, or blindly prejudiced, and bound to brick and mortar. A feeble voice was just heard to doubt the value of iron houses; but it died away like childhood's treble in the metallic clang and noise around it. What matter that the speaker was Mr. Tite? In the public mind, a professional opinion was fast getting to be of no worth,—all the more so if given within the Institute of British Architects, or because professional,—that is, because grown out of experience and education. Very melancholy would it be, yet instructive—though the case would be again soon forgotten—could we here bring together all the absurdity of the panegyric of one individual (justly deserving much), which is scattered through the newspaper reports of meetings and Parliamentary debates “of the period.” How the sublime ignorance of art, which is found too often in men occupying high places, and having a great name, would be found set in lines of type crowded with superlatives, in number and intended force of the praise doubling and redoubling all that was ever read in equal space of any one out of the greatest intellects of ages. One possessing even the varied and the vast acquirements of Lord Brougham would hold a foremost place in this number of adulators. It is a practice too common with those who would be supposed to appreciate art, but do not, to apply thickly their praise when the occasion seems a safe one: the quantity of the praise shows so much their great knowledge of the subject.

The public being told by those who should have known better, were convinced that a great discovery and stage of progress had been reached in architecture; and that in house-building, for brickwork or masonry, iron and glass would well nigh always thereafter be substituted. In the lamentable exhibition of the museum building at Brompton, we now see one end of the persistence in such a course,—we find a building intended for the convenient arrangement of objects, and presented as a museum of *art*, which, though completed at considerable expense, requires entire remodelling, and still remains unsuited to its purpose, and in which, as finished, barely a feature of architectural beauty can be detected. What the building is, it became, simply because certain essential work in design and contrivance, necessary to the good result in any building, was altogether omitted,—work which we do not care to urge is that of any calling or profession,—yet still work for the artist and practical architect. Such, then, is the attitude in which, through a public building, the national reputation is made to stand by the management of those to whom such reputation is entrusted,—a system of management which expects good results to follow from hurrying to a conclusion by means of omitting the very design and logical process of conception essential to the production or successful issue of any work, no matter of what kind or nature.

The worst of these several instances of art-management referred to is, that you never reach the source where the responsibility really was. One thing, at least, is perfect, namely, the manner of shifting blame, so that at length it is found nowhere. When you think you have the Department of Art, you are referred to the Commission for the Exhibition of 1851; and that way, we should perhaps get where most people will look, namely to the Government; and we should doubtless be sent back again along the same channel. That duties in more than one of the official positions, belong to individuals, of course is not obtruded on our notice. “They say,” however, that by some means unrecorded, it became understood that a building on the ground purchased by Parliament and the commissioners, was wanted. That a certain question might be settled gently, and with a show of deference to public opinion, a temporary building only was asked for. The money being got—though not without opposition—the next

step was to put something on the ground as quickly as possible. Sir William Cubitt being on the commission, in a perfectly disinterested and non-professional spirit, undertook to set the thing going. Sir William Cubitt has a well-earned reputation as a civil engineer: but we may be allowed to say that in the present case, we should reasonably have had more confidence as to the work from giving it to a properly appointed architect. The whole thing was, however, despatched in the most easy, good-humoured sort of way. It so happens—quite promiscuously,—as the phrase is, that at the same address in Great George-street, where the able engineer named has his offices, are also those of Messrs. Charles D. Young and Co. of London, Liverpool, Glasgow, and Edinburgh, builders of “Iron Structures for Home and Abroad,”—as their pattern-book continues to say, “consisting of stores, dwelling-houses, markets, arcades, railway-stations and roofings, &c. &c. constructed of wrought iron and cast iron and corrugated sheets.” They have their correspondents abroad, and have supplied we know not how many iron houses to the English colonies and America, besides barracks and hospitals, and have successfully carried out large and important works at home. What so easy as to leave the whole business structural and architectural in such hands? We have now before us one of their books. Take one of their arrangements of the most simple execution, used for common Australian houses and the plainest barrack, which can be put together with the least possible trouble: the only difference between it and the Brompton building is in the number of pieces of framework and corrugated plates.

Looking at the comparison of structural sufficiency, it is clear that iron, as a rapid conductor of heat, is not a material which would be chosen after any consideration of points connected with climate. The iron houses in California and Australia have required precisely the same process of fitting for the purpose, after erection, which has been required in the case at Brompton. We have received scores of letters at different times on the subject. Here, however, there was not the argument for the iron building which is found in the colonies—where, let it be recollected, the only chance for the emigrant to have a dwelling anywhere but in “Caucus Town,” was to take one with him,—and of course one that would pack into small space, and could be put up as an external shell as quickly as possible. But, why blindly follow the same plan where the occasion and the need are wholly different? Thus, in short, we get out of this lamentable yet instructive case, a truth which poor Theodore Hook expressed in saying, “Wrong never comes Right.” We begin a work which should be essentially a work of architecture, with no regard to its purpose, and none to its aesthetic effect: we omit, in short, all planning and design. On such a system, in place of a process of *art*, the production of this museum building was a matter of mere multiplication, and the employment of trade-capital. We impressively warned the public against the contemplated erection when the design was only in progress: the appeal was disregarded; our contemporaries gave no aid; and here we have the result—the Brompton Boilers, a loud-speaking disgrace to the country.

We have said so much of this lamentable case, in the hope that we might help to show at last the true reason of such failures, which we have some ground to claim shall not be visited, as is the fashion, upon the architectural skill of the country. In so speaking we have left unnamed a few other matters as to the state of the buildings of the Department.

Our readers may learn with some surprise that there is now ready for roofing-in, a gallery for the Sheepshanks collection of pictures. The structure is not visible from any of the main roads, and stands on one portion of the ground immediately at the end of the Museum building, with which the lower of its two stories will, we believe, be connected, as a place of deposit for some of the more valuable works of monumental art. The structure is called temporary, and is fire-proof. The upper floor (for the gallery) is lighted from the top, and appears to have been designed with great care as to lighting and general fulfilment of its purpose. Externally, piers and re-



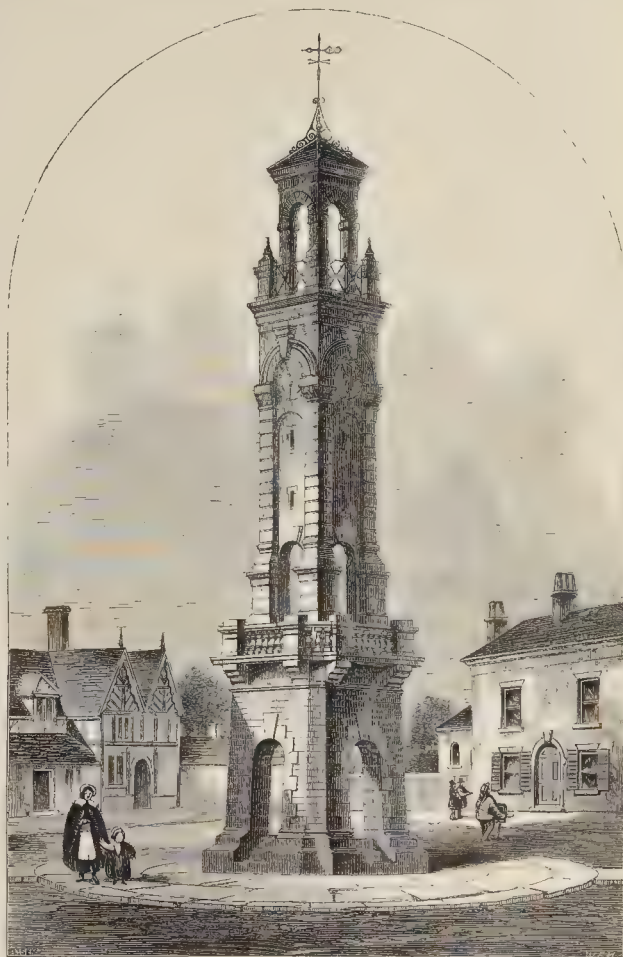
cesses, and red brickwork with patterns in dark bricks, form the medium of decoration, and it is proposed to cover the roof with tiles. The drawings were made by Captain Fowke. The building, at a rough guess, may be some 70 feet long, but can be readily extended,—as it has already been once; and a site is planned for a similar block of buildings in a corresponding position at the same end of the museum. As many will see in this structure, the thin end of the wedge that is to end in the National Gallery itself, we have thought it right not to conceal what we know.

It should be recollected that the pictures were given by Mr. Sheepshanks, on the express condition that they should be out of town; but there are many who do not scruple to say that this condition had been suggested to the donor in order to influence a question which should certainly not be influenced by such expedients. It is also very freely said what the decision of the commission appointed will be, judging from views which are believed to have been those of the individual members. We must certainly repeat our hope that the question will be decided in a manner that may be perfectly convincing in argument to the public. If it can be shown that the pictures are injured by smoke, or by the accumulation of people, let these sources of injury be lessened in the best way that may be open for the preservation of works of such value. This, however, has to be shown; and so long as private collections suffer no injury in London, and if, as we understand, it is no object desired, to lessen the number of visitors, we must require the question to be fairly stated, and brought to our convictions. Let the object be pursued openly, the arguments stated, and time be given to consider them. If they are such as would carry weight, they will be easily assented to; and for ourselves we should be prepared at once to lend such weight as we may possess, to the prosecution of the object. Unprejudiced examination will, however, be demanded. We shall return to the subject, and consider two or three propositions which are before us in an early number.

Let us add, that some required additions to the buildings of the Department are about being commenced, to be devoted as refreshment-rooms and to other objects. They will stand at the angle of the ground next the Brompton-road, and will be joined to the museum building by a covered way. They are to be half-timbered buildings, and are from drawings by Captain Fowke. The Metropolitan Building Act prevents the use of this mode of construction, unless in specially exempted cases. If the building in question be thus not subject to the control of the Act, we would suggest, without a spark of captious feeling, that it surely cannot be desirable for the Government to do that which the Legislature prohibits in the case of individuals.

#### THE ABERYSTWITH CLOCK-TOWER.

THE competition for a design for the clock-tower at Aberystwith, South Wales, excited much discussion at the time, and we have thought it desirable to give a view of the structure that has been erected. Mr. E. Trevor Owen was the architect.



ABERYSTWITH CLOCK TOWER.—MR. E. T. OWEN, ARCHITECT.

of the restorer. Time may destroy much, but it also leaves much, and what it leaves may be depended on. No one would ever trouble himself to observe and work out with nicety the curious forms and proportions of a Grecian temple, if he thought the structure were a copy or restoration, instead of the genuine production of the age to which it professed to belong. The feeling does not arise only from a respect to antiquity, though that may have something to do with it. It is chiefly the desire of drawing our knowledge from the fountain-head, be that remote or near at hand,—be it abundant or scanty,—instead of taking it secondhand. The restoration may give some idea of the original, perhaps not a very faint or false one; and so may a description or engraving; but any one really interested in the pursuit will always, if he can, go at once to the original itself.

The contributions of past ages are the property of the present age,—a property which may be employed freely for our own purposes, and handed down unimpaired to future generations. This is true in literature, in science, and in art. The man of the most inventive genius will not hesitate to borrow largely from the treasures open to all, but by the use he makes of them will both improve and increase the store for the benefit of his successors. No nation borrowed more freely than the Greeks: to no nation is posterity more indebted for all that is

beautiful, sublime, or refined. Every work of imagination appeals to the mind through the medium of ideas and impressions already formed. If it presents what is wholly new and strange, what cannot even be compared or contrasted with familiar objects and ideas, it will not be understood nor appreciated. There must be some common train of ideas, as a common language, to admit the communication of thought between one and another, to enable the writer or artist to convey his own ideas fairly to the reader or spectator. If an architect could create a wholly new style, altogether independent of any hitherto known, it would probably be a long time before any one but himself could comprehend its merits. We are always pleased or affected by having an old train of thought awakened, and are often so prepared for the introduction of something new, which, if presented to us abruptly, without such process, would startle and perplex rather than instruct or delight; and, instead of connecting itself with the memory by a series of known and cherished images, would pass away like a strange dream. Hence, the study of the past is necessary for the establishing of a communication between the artist or poet of the most creative genius and those to whom he addresses himself; even assuming, what I suppose we have no right to assume, that his genius could subsist upon its own inward resources, independent of any

#### ON THE USE OF ANCIENT ARCHITECTURAL EXAMPLES.\*

BEFORE we begin to discuss the use of ancient examples, it may be as well to say a word on the necessity of preserving them in a state of usefulness. I am not going at present to speak in behalf of only the antiquary and historian. Repairs cannot be avoided; but needless alterations, and what are called restorations, may very possibly cause the architectural student to pass an erroneous judgment, or to relax in his attention, from a feeling that his groundwork is uncertain. He will not look out for subtle and delicate characteristics, when he supposes the probability of their being obliterated by the hand

\* The following paper, with the addition of some passages, omitted to bring it more within our limits, was read by the Rev J. L. Pett at the Architectural Exhibition on the 11th instant, as already mentioned. In commenting, the reverend gentleman acknowledged his use of suggestions in the writings of others, including the opening address of the President of the Liverpool Architectural Society.



external aid. It is no disparagement to the merits of a design that we can easily discover its prototypes. On the contrary, the knowledge of them often enhances our appreciation of the talent and power of the designer. \* \* \*

Nothing gives a greater air of originality to a work than any evidence of its designer having always gone straight forward to his professed object, from whatever source he may have drawn his materials. This is what constitutes the difference between servile imitation and bold and honest adaptation.

A fertile invention, as we all know, is a somewhat rare endowment. Many painters, sculptors, musicians, nay, even poets, who have not been eminently gifted with it, have yet transmitted to posterity works far beyond an average standard of merit, and likely to endure and exert an active influence on many generations. Architecture, from the very nature of its objects, is much less indebted to brilliancy of imagination than to sound common sense and habits of independent thought. If we want a house or a church, and have before us a good type, we should be very foolish if we refused to avail ourselves of it for the sake of some new experiment. Should we see a defect or want of suitability in any part, or suppose we could devise an improvement, the change should be made with much caution and forethought. When architects worked in this spirit, we find the buildings of the age to exhibit an extraordinary variety, and, at the same time, a strong affinity to each other; so that although no two can be found actually alike, all may be pronounced as belonging to the same group or species. And this I believe to be owing to no other cause than singleness of purpose on the part of the builders. Their object was neither to produce clever imitations nor ingenious novelties, but simply to erect the best building they could; the most adapted to its end, the most pleasing to the eye, and the most suitable to its position.

Any one who has made a tour through a district in which the village churches are tolerably free from modern repair, will note both the prevalent adherence to one approved type, and the variety of character which shows the independence of the architects. In Somersetshire we see a vast number of lofty ornamented towers, all having a strong resemblance to each other, yet each preserving its individuality by distinctive marks. In Devonshire the family likeness is still stronger: the plain embattled tower, slightly tapering to the top; the long unbroken body, with an aisle nearly reaching its full length, and the rich rood screen, forming a substitute for the chancel arch, are features all but universal; and yet the traveller who visits one church after the other need not complain of monotony. In Jersey, every one of the old parish churches has a central tower, and most of them have an aisle nearly as long as the whole building. Yet there is quite sufficient individual character, notwithstanding the injury done by modern alterations, to render a visit to each particular church interesting. The four-sided spire—not a common feature in most countries—is there a favourite finish to the steeple: as many as six out of the twelve churches have it. The stone barrel roof, to the outside of which I understood the tiles were attached without the intervention of timber, give a good idea for the construction of an imperishable building.

The flat churches of Norfolk and Suffolk, many of which have round towers, and the Kentish churches with their bold staircase turrets, afford well-known examples of this varied uniformity. In some parts of France this is still more striking. I scarcely ever pass between Paris and Boulogne or Calais, without giving up a day to the group of churches lying near and round Creil and Clermont; and I have never done so without lighting upon some specimen that was new to me, and which I should be sorry to have missed. I may say the same of certain groups upon the Marne, upon the Loire, and that interesting group of churches with domical roofs, of which Périgueux and Angoulême are the types.

The open steeples of Brittany, mostly of a late date, constantly attract the notice of the traveller. Though we are not bound to copy servilely from ancient examples, yet we must

look to them for authority. Unless we are content to do so for a time, we shall not, I suspect, make much progress in fixing an independent style of our own. Architects are not now in a different position from those of former ages; neither more nor less bound by precedents and conventional rules. We know that the architects of the best periods regarded the rules of their predecessors with no small degree of veneration, while they neither considered them to be infallible, nor felt themselves to be debarred from any innovation or attempt at improvement. The establishment of Doric, the purest and most perfect of all columnar styles, did not prevent the Ionic and Corinthian from coming into existence, and taking a prominent part in the progress of architecture. Had the designers of these looked on the Doric as a precedent not to be departed from, they would never have given the fruit of their ideas to the world at all: had they thrown aside the precedent altogether, they would most likely have missed many of those beauties and proprieties for which the Greek orders are so remarkable. And this has been the case throughout the whole range of architecture. The architect of genius and judgment has never ceased to keep in sight authority and precedent when he has attempted his boldest inventions. Authority is like the string that enables the kite to rise, and keeps it steady: cut the string, the movements of the kite become at once uncertain and irregular, and it presently falls to the ground. The restraint of rules, if they be reasonable, so far from cramping the genius, are often useful in strengthening it, and giving it a definite purpose and action. If there were no laws of nature, such as the law of gravity, no laws of beauty and harmony would unquestionably exist, and must be learnt and obeyed, even though we may be unable to define them, no laws dictated by convenience and usefulness, what would be the scope and aim of the architect? how could his genius embody itself in a definite form? The laws of precedent should be founded upon these; and we shall always do well to examine whether they actually are, or whether at least they are not at variance with them; for no precedent will justify either false construction or inconvenient arrangement.

Again, rules and precedents are usually established upon the practice of the greatest masters, and when the art is at its best; and they are the result of much experience and careful observation, so that, by disregarding them, we are debarring ourselves from the advantage of a tried and approved path to excellence, and one that must in general be trodden before we are entitled to venture, with any hope of success, upon the new and untried paths still before us.

However we may wish to strike out a new style of architecture, we must, I believe, be content to begin by conforming with an old and recognised one—studying its examples, and acknowledging its authorities. We need not bind ourselves to them slavishly, nor consider conformity as the test of merit; indeed, unless we look to a far higher standard than correct adherence to rules, we shall have very little architecture worthy of the name; but we should not break them lightly and without reason; and even while transgressing the rule itself, we should be careful to show that we are still carrying out the principle on which the rule is grounded. As for details, we should adopt those which prevail in the style we choose, unless we can substitute something better in itself and harmonising equally well with the rest of the composition.

If we work with a determination to advance, we shall be sure to attain ultimately a style of our own, distinct from those which have preceded it, yet plainly manifesting their influence. Changes will come, slowly and gradually, or rapidly and suddenly, as circumstances may call them forth. Our style will necessarily have much of the Gothic and much of the Classical; as much probably of each as is valuable, and capable of combination; and I think it will be found that such elements as are of a lasting character are capable of combination. I by no means agree with those who think the proposed interior decorations of Alnwick Castle will be felt to be very incongruous with its external aspect; though there is no doubt that the skill

of the designers, and the intrinsic excellence of their work will be put to a severe test; for both on one part and the other they must look much more to the true principles of architecture, those which are the same through every style, than to a mere conformity with the fashion of a day. If both architect and decorator do what they are assured is positively and essentially right in itself and does not owe all its merit to authority, even though they derive their materials from different styles and periods, the harmony between their works will perhaps be much more complete than we imagine.

I have said that our new style, when it comes, must contain much both of Italian and Gothic; but the fusion will be a matter of time: we are not called upon, in every building, to undertake that trial of skill which was necessary in the case of Alnwick Castle, and the results of which cannot fail to be instructive. We must conform to some one acknowledged style, and whatever we borrow from another we must introduce cautiously, and by degrees. The styles with which we are familiar, and between which we have to make our choice, are the Classic and the Gothic. The links by which the one is connected with the other,—for the transition was gradual, not sudden, namely, the Romanesque and Byzantine—are of extreme value and interest, and their study will be found essential towards any development to which we may look forward, but in themselves they offer scarcely a sufficient basis for the groundwork of a style. Indeed, the first Romanesque is debased Roman, imitating the Roman, and falling short of it from the ignorance of the workmen, and the later Romanesque is incipient Gothic. It may be that a new style will be worked out more like the Romanesque than is either the Gothic or the Roman; but if we commence with it as a groundwork, we shall really find ourselves at a loss for those rules which are necessary towards securing a steady and permanent progress. The question, then, is, whether the Classic or the Gothic be adopted as the style on which we shall work, with a view of establishing a national architecture worthy of an age which in most respects betrays no symptom of retrogression.

You will observe the question is not which we shall adopt, and preserve constantly in the state in which we find it, with little or no change beyond what may be caused by the manner of individual architects, but which we shall take as a basis for future operations. I dare say the favourers of Gothic looked upon the Classical party as anxious to preserve the style of some particular era, say that of Palladio, without any important alterations, and to make all our buildings spiritless reproductions of his works and those of his contemporaries. It may be on the other hand that the revivers of Gothic are supposed to be desirous of establishing permanently the style that prevailed in England, say during the reigns of Henry III. or the three first Edwards. It was because I thought this was the case that I expressed my opinion, and I do not wish it to be taken at more than its worth against the revival of Gothic; and I should equally protest against the revival of any phase of Classical architecture, as a permanent, unchangeable style. But the question is, I repeat, which shall we choose as the groundwork of a style, perhaps of a series of successive styles, according to the wants, tastes, or scientific discoveries of future generations. And the Gothic architect who professes to develop the style he has chosen takes a very different stand from the architect whose aim is merely to restore or reproduce the buildings of the thirteenth and fourteenth centuries.

Looking at it, then, in its true light, I do not know that anybody has a right to say that it is not still an open question. Sir Roger de Coverley's conclusion, "that much may be said on both sides," is generally considered to be more safe than satisfactory; but in the present case, it is very certain that much has been said, and much will be said, on both sides; and no doubt many reasonable arguments, and a still greater number of plausible arguments, have been and will be arrayed against each other. Nor is it likely that one party will overrule the other; but it is very likely, I may say certain, that if they both advance in the right direction,



and in the right spirit, they will come very much nearer to each other in opinion, and in the course of time join hand in hand in accomplishing the same object. The existence of two opposing architectural parties may, after all, conduce to the progress of architecture. Though I cannot see that the Gothic movement has yet taken the line that will lead to this advancement, and though I am strongly impressed with an idea that we shall do more towards it if we work upon a classical basis, yet I fully appreciate the high and honourable position which the restorers of Gothic have attained, and which they must ever occupy in the history of architecture. They may not, perhaps, succeed in reviving Gothic architecture, that is, in giving it, together with the same forms, the same life and spirit that it possessed in the few centuries from which they derive their models; but they will undoubtedly have done much towards the revival of the art of architecture itself, into which their zeal, their talents, and their exertions have breathed a new energy. It may be that the attempts to reproduce Gothic buildings have been necessary, to give us a clearer insight into the principles of that noble style, just as we acquire a keener perception of the beauties of ancient poets by occasionally exercising ourselves in the composition of Greek and Latin verses; and, viewing them in this light, we ought not to regret that they have been made; for the study and knowledge of Gothic cannot be too much cultivated; but some higher aim and object should be had in view than the production of works which may be mistaken for those of another age.

At the first revival of Classical architecture the form and spirit of the original was more truly exhibited than those of the Gothic were for many years after the imitation was attempted among ourselves. The works of Alberti, who died considerably before the close of the fifteenth century, present us with pure Roman. When I was sketching the cathedral at Rimini, I thought I had before me some ancient building, within which a Gothic church had been formed; and I did not feel sure that such was not the case till I noticed among the ornaments some mediæval shields. I can conceive nothing grander than some of the works of this master. At Mantua is a church, the nave of which is 60 feet in width, covered with a cylindrical vault: it has no aisles; but the sides have at certain intervals large and deep arched recesses, the piers being ornamented with pilasters. The effect of this church is much injured by its painted decorations. It was not till I visited it in the dusk of the evening that I could judge what it really was. It will readily be perceived what an excellent plan this is for securing sufficient abutment for the enormous span of roof. The idea may have been partly taken from the Temple of Peace at Rome—I mean in giving the internal abutment. But the men of those days felt they had other work to do beyond reproducing the style in its original purity and majesty. They had to adapt it to their own purposes, and also to add to it much that succeeding ages had placed at their disposal. Thus they struck out combinations unknown to the ancient Roman and to the mediæval architect. If the style degenerated into a dull and feeble uniformity, we must look to other causes besides its own poverty of resources. By making a strict adherence to conventional rules our prime object and our highest standard of merit, we shall spoil any style, whether ancient, modern, or mediæval.

The Gothic style prevailed in this country for a long period, we may say, of about four centuries. During this time it underwent at least as many very decided and remarkable changes; so that there is a greater difference between any two phases of Gothic than between any two orders of Greek architecture, and perhaps than between any two aspects of Roman architecture from the earliest days of Rome to the end of the first or second century of the Christian era. And these are all changes of progress; I do not say necessarily of improvement, for it is very possible to push a principle too far; but every step tended more and more to develop the resources of the style, to exhibit fresh combinations, and to correct what might appear to be faulty. To go no farther than one characteristic, the windows divided by mullions and tracery, as it is an

element of material decay, is also adverse to the permanency of any principle of composition. I am certain there are very few large windows in which, among many beauties, some decided faults are not to be found; faults easily looked over when we are studying the general effect, or the excellence of the workmanship; but not to be tolerated in a system to which we are called upon to conform with any degree of strictness.

I have lately read carefully Mr. Freeman's very valuable and comprehensive work upon window tracery; and it convinced me that through the whole progress of Gothic art something was felt to be wanting in that department, which the architect was continually making an effort to supply. Sometimes there was a heaviness, sometimes a feebleness and indecision of line, sometimes a defective construction, sometimes a hard and unpleasant intersection, sometimes a want of harmony in the sizes or shapes of the principal openings; sometimes an ungracefulness of form in the subordinate ones; sometimes a stiffness and formality; sometimes a want of variety: all these I have no doubt were felt, and many were the attempts to correct them. The architects knew and fully appreciated the beauty of the traceried window, and they were constantly endeavouring to make it perfect. The result is, an inconceivable variety of fine designs, but none which furnishes a definite rule for our guidance.

Now I do not deny that Classical architecture has grave faults—far graver than any which can be charged upon the beautiful windows of the Gothic; but they are faults which, if we see them, we can avoid. They are not so inherent in the style as to force themselves into our designs against our judgment, even if we wish to conform to it strictly: we may imagine a pure building, free from every thing that we could condemn as an incongruity or deformity: we are not obliged to mix two different kinds of construction, or to make what ought to be constructive features take a part only in decoration: if we think this a fault, we may keep clear of it, while we yet build in a correct Roman style; or we may make both the arch and the colonnade really perform their work, in harmony with each other, as Sir Christopher Wren knew so well how to do, and did, in his exquisite composition of St. Stephen's, Walbrook.

That the development of the Gothic style was carried too far by the mediæval architects, or else that it took a wrong direction, is evidently the opinion of those who look upon the early or Geometrical Decorated style as the nearest to perfection. For my own part, I think that in several respects a steady improvement took place up to the period of the Early Perpendicular inclusive; and that this style, worked with purity, would be found to afford scope for very noble designs. The elongated plan of the pier, giving a greater depth in a direction transverse to the aisles than in the direction of their length, suggests a very bold composition in the interior, and is favourable to construction. Beautiful varieties of vaulting are admissible; or, if it is more expedient to use the timber roof, fine examples are not wanting. Externally the opportunity of varying the pitch of the roof enables the architect, if he pleases, to attain a squareness and severity of outline very conducive to dignity. Of this the central tower and choir of York Minster offer a magnificent example; and the interior of the latter would have been still finer, had it been more thoroughly Perpendicular, and less partaking of the character of the nave.

That the advance beyond this period to the latest Perpendicular was altogether a down-hill course, I am not prepared to admit, for though some symptoms of a debased art may have appeared, yet some new and beautiful features were unfolded,—for instance, the fan-roof. I cannot yet get over my old admiration of King's College Chapel at Cambridge. I dare say it has its faults, but it will be no easy matter to find many buildings that can bear comparison with it, in the style which it may.

But, whether for the better or the worse, it is certain that a change was going on during the whole period of Gothic architecture; and to this constant change, I suspect, it owes its

life and character. It ran a rapid and brilliant career, and expired as another age, one of different thoughts, habits, and manners, was commencing. Its relics are most valuable to us, in whatever light we view them, whether as historical records or as incentives to grave and religious contemplation. In this respect our old churches have a value which more than compensates for many inconveniences in arrangement; and no architect, to whatever branch he may devote himself, can dispense with the study of them. He cannot acquaint himself too thoroughly with their principles both of construction and decoration,—may, he should also learn their symbolical meanings wherever any are expressed, that he may not attribute to one idea or motive that which has been suggested by another. But the rapid changes of the style seem to afford an argument why we should regard Gothic rather as a rich magazine of resources than as a school from which we are to derive certain rules and principles of art.\*

#### ON CHOIRS AND CHANCEL, PARTICULARLY AS REGARDS THEIR USE IN SOUTHERN EUROPE.

At a recent meeting of the Society of Antiquaries a paper was read by Mr. Ashpitel on this subject. He commenced by commenting on the difficult position an architect finds himself in while designing chancels for churches in the revised mediæval styles;—that any one, with any feeling for Gothic art, must see how necessary it was to the effect of the building to have a long chancel;—that in ancient buildings they were seldom less than one-third of the total length of the edifice, and that often the chancel was equal in length to the nave;—that a notion had lately sprung up that the laity ought to be always excluded from the chancel, while at the same time, by a strange anomaly, in all our cathedrals the laity were all huddled into the choir, and the naves left vacant, so that it was a reproach on the part of the utilitarians that one-third of our churches, and three-fourths of our cathedrals, were utterly wasted.

The reader then said that, impressed with these notions, he carefully noted, on a late visit to Italy, the construction of choirs and chancels, the uses made of them, and the traditions attached to their uses. He would first call their attention to what the choir or *chorus* was in the early Christian Church, then to its changes during the mediæval period, and last, to its present state and use in Southern Europe.

The Christian Church was not a copy of, or derived from, the Pagan Temple in any way, but from the Roman Basilica, or Hall of Justice. From worshipping in caves and catacombs, the early Christians were permitted by wealthy converts to occupy their halls (which were attached to most great men's houses) for the purposes of worship, and the form was found so convenient that, in the time of Constantine, many were converted into, and many buildings of similar form erected as, Christian Churches.

He then went into a close description of most of those still existing at Rome, and exhibited a plan of San Clemente, which still retains in every respect all the features it possessed in the days of Constantine. There was a large semicircular niche at the end of the building, in the middle of which the altar stood; the seats for the bishop and presbyters being close to the wall behind it. This was on a platform raised some steps, never less than three: at the top of this was a railing called "*canelli*" or *εὐκαίδες*. In front was a space enclosed by marble slabs about four feet high, extending a short way down the nave, in which the "*chorus psallentium*," or choir of singers, sat, and from whence it derived its name of choir. On each side of this were the amboes or pulpits for reading the gospels and epistles, and for preaching. Within the enclosures were sung the psalms, hymns, and doxologies.

He then remarked on the usage of the words "*Pagan*" and "*Christian Art*," as regarded architecture, and explained how the use of these terms originally intended to do honour to mediæval art, were ridiculous and offensive in the ex-

\* To be continued.



trème, to the ears of Italians. "What," have they often said, "are those buildings in which the holy apostles, and their successors, have preached, which have been imbued with the blood of saints and martyrs, where synods and councils have sate, and which exist to the present day unaltered—are these to be called Pagan? while that style which we know to have been brought from the East by the Crusaders, and however it may have flourished in the north, has never even taken root in Rome: is this the *Sarazine* to be called *Christian*, while the true Early Christian, the style of the apostolic age, is to be called *Pagan*? Mahomedan called *Christian*, and *Christian* *Pagan*! it is insulting to our common sense." It was difficult to answer such remarks. The reader took a rapid sketch of the rise and progress of the monastic orders, and particularly of the custom still observed in the Romish Church, wherever there was a "convention," or assemblage of the clergy, of meeting every third hour of the day and night, in the church, and meeting and singing certain services, called the Canonical Hours, or more commonly the Breviary services. These were sung in the choir. The great Roman authority, Carranza, attributed their introduction to Pope Damasus the First (A.D. 371), but our learned divines, Bingham and Joseph Mede, thought them to be later.

Soon after their introduction, choirs seem to have been enclosed. The best authority on this point is, the celebrated Durandus, who says in his "Nationale,"—"In the primitive church, the peribolus, or wall which encircles the choir, was only elbow high, and which is still observed in some churches" (this wall, of course, stood in the middle of the nave before the altar); "but in this time [he says], almost always a veil is hung up, or a wall interposed between the clergy and the people, lest they should mutually look at each other." From this system of raising the peribolus, or wall round the choir, may be traced the present state of choirs and chancels, the great difference being that the rails, which formerly separated the altars from choirs, now separate the choirs from the nave.

That the laity in olden times were admitted into the choirs, is proved by many instances, in none more so than by Barclay, in his "Shippe of Fools," several passages from which were read, one of which in particular, alluding to the indecent behaviour in churches, talks of men "clapping with their heels in church, and in quodre." Besides the custom in our own country, in France, and in Belgium.

In Italy, the laity enter the choirs and take their seats in the stalls just as they do here, and it is said they always have done so. The word "chancel" is unknown in Italy as applied to a part of the building, "cancelli" meaning only the gates or rails before the choir, or "coro." What we call chancel, or choir, they call by the primitive term of tribune. The word "coro" is applied to any part of the building, side chapel or otherwise, where the choir assemblies, such being shifted from place to place according to the weather or to convenience. But while the choir are assembled there, and it is a "coro," the gates are shut (oftentimes curtains are drawn), and the laity are carefully excluded.

Mr. Ashpitel then explained how a friend of his was puzzled by talking of the choir as of the east end of a large church, when the sacristan said, "No, sir, this is the tribune: the choir is now in the second chapel on the right of the nave: next week it will be in the Spanish Chapel, in the green cloister." And he also instanced the most striking illustration, that the churches built by the Jesuits have no choirs nor chancels: Ignatius Loyola, finding how the recital of the breviary services at every third hour interfered with the active life he required of his followers, would not suffer them to do so, and consequently choirs were useless, and are never built in his churches.

The paper urged that the notion that the laity should never enter the choir was quite novel, and had arisen since the publication of a translation of part of Durandus, who says, "that the Council of Mayence had determined that part which is divided by the rails from the altar should be open only to the clergy while chanting." "psallentibus tantum patent clericis."

Now, curiously enough, this dogma is not to be found in the canons of the Council of Mayence, but it is in those of the second Council of Tours (A.D. 560), and would quite agree with the notion of the present practice, if we suppose by "psallens clericus" was meant, as it is in the present day, the choir while the breviary offices are going on: in other words, the choir while it is a choir. But on reading the words of the canon itself, it goes on to say, "but for praying and for communicating, let the Holy of Holies itself be open to the laity and to women as the custom is." He then entered at length into the question of the canons of the fourth Council of Toledo, and of the sixth of Constantinople, and described the use of the churches in Rome, that different services are held in different parts of the edifices, as the number of persons present or other conveniences may require, the laity being freely admitted to all parts of the building, with one exception only, that they are always excluded from the chapels while the breviary services are celebrating; but as soon as these are over, the gates are thrown open, and masses or other public services said, and the laity admitted again.

Allusion was made to some traditions extant among the English Catholics at Rome; one, that the separation of the sexes in churches was said to have been an innovation of Zuringhies. The passage in St. Augustine de Civitate Dei, he was told, alludes to a practice still in use at Rome, that on certain occasions men alone go to certain churches and women to others: not that there is a separation of the sexes in the same church. It was also stated, that there is no "Orientalism," as it is called, of churches in Italy; and that there is a tradition, that the framers of the Prayer-book used the phrase, "north side of the altar," disliking the use of the word, "gospel side."

Another tradition was mentioned, that the modern pronunciation of Latin was introduced at the time of Elizabeth, that those who had received a foreign education, and to be respected as seminary priests, might be detected as soon as they quoted a classic authority. He concluded with a hope, that the subject might be more carefully investigated, and more particularly whether morning prayer and occasional services might not still be held in chancels, rather than scattering people thinly over a large, cold church; and also whether the fact of the Church of England having determined that the altar should be moveable, may not have had, and may not still have, a most important bearing on this subject.

#### METROPOLITAN BOARD OF WORKS.

*Public Bridges and Thoroughfares.*—On the motion of Mr. Deputy Harrison, the following resolution was passed at the meeting of the Board on the 16th:—

"That it be referred to the works committee to inquire into the state and condition of the several communications in the metropolis, including the bridges over the Thames, and the approaches thereto; to report whether the communications and approaches are adequate to the present and increasing traffic; if not, the best mode of improving the same."

The member gave various reasons why the present time was opportune for such a reference: among others, was the fact that several of the railway companies were bringing Bills before Parliament for constructing roads within the metropolis which might interfere with the improvements to be carried out by the Board.

*Premiums for Laying-out Streets.*—The following motion, proposed by Mr. Wright, was carried:—

"That prizes be offered for public competition for designs showing the best mode of laying out the surface and subsoil of the new street in Southwark, as an example of a first class street, and also for the street in Westminster as a second-class street; showing the disposition of the private vaults, sewers, gas and water pipes, telegraph wires, with any parts of the soil appropriated to other useful purposes. Prizes.—First-class street, 100 guineas, 50 guineas, and 10 guineas; second-class street, 50l. 20l. and 5l. That the details of this competition be carried out by the works committee."

Mr. D'Alainger, in voting for this motion, desired it to be understood that he did not wish to

cast the least doubt upon the talents of their own officers, who could, if they were willing, compete for the prizes.

It would surely not be wise to permit their officers to do so: a suspicion of unfairness, rightly or wrongly, would be certain to attach. The committee, if they wish to induce valuable suggestions, should at once announce that their own officers will not be allowed to compete.

Mr. Marrable (the superintending architect) has recently made some important statements as to erroneous decisions by magistrates on cases brought before them by district surveyors,—decisions tending to paralyze the efforts of public officers. The evil is an increasing one. Directly reverse opinions have been given on cases precisely similar, and before long the district surveyors will find the proper discharge of their duties impossible, and so the public will suffer. We must return to the subject.

In a pecuniary point of view the district surveyors have been materially injured by the new Act, in the diminution of fees, the transference of the survey of ruinous buildings and other steps,—at least, 25 per cent. Builders and the public may say, "So much the better for us." If, however, the alteration should so far lessen the value of the office as to lead to the substitution of men of an inferior order and standing, the advantage may not be so certain.

#### BUILDING IN CANADA.

We have received a view of a large building at present erecting in Montreal, Canada, for Mr. Alfred Pinsonneault. It is five stories high, and the façades are constructed of brick and stone. The ground-floor and basement will be used for shops and storage, the upper floors being appropriated to public rooms, &c. The building will have three fronts, the principal one facing a large square, which, with the contemplated improvements, will form one of the most attractive parts of the city. The dimensions of the block are 92 feet by 65 feet, and 70 feet high. The interior is for the most part constructed of iron. The roof (from which an excellent view of the city can be obtained) will be flat, and surrounded with an iron railing. The building was commenced in April last, and is to be completed early in the ensuing spring. The cost will be about 6,000l. The architects are Messrs. Hopkins, Lawford, and Nelson, of Montreal.

#### MIDDLESEX INDUSTRIAL SCHOOLS.

At the last meeting of the Court of Justices, the design of Messrs. Banks and Barry (of which we gave illustrations recently) was approved.

Messrs. Aickin and Capes, to whom the first premium was awarded by the magistrates, have circulated a lithograph of their plan, with a letter showing their objections to the adopted design, and the advantages of their own. They urge that, their design having been selected as the best, they ought to have been employed to erect the building;—in which, as a matter of course, admitting that they have complied with the conditions, we fully agree.

#### TRINITY PRESBYTERIAN CHURCH, KINGSLAND.

Our engraving shows the new Presbyterian Church now erecting at the junction of the Southgate and Church Roads, De Beauvoir town, Kingsland, for the London-wall (the oldest Presbyterian) congregation in London.

This church, as we have before observed, is remarkable for very narrow aisles, which serve as passages only, the benched portion of the building being in one span. Space for 600 worshippers is provided. Galleries are not contemplated. Mr. T. E. Knightley, of Cannon Street, is the architect, and Mr. E. Clarke, of Tottenham, is the builder.

The building is in the Geometrical style, and promises to be an ornament to the neighbourhood.

ENGLISH PICTURES.—Messrs. Foster, of Pall mall, have announced an important sale of water colour drawings and paintings, for the 28th and 29th of January.





TRINITY PRESBYTERIAN CHURCH, KINGSLAND.—MR. T. E. KNIGHTLEY, ARCHITECT.



## PROVINCIAL NEWS.

**Norwich.**—The workmen have nearly left the Free Library building, which will be opened very shortly. About 2,500 volumes of books have been purchased and presented for the library, and additions are received daily.—It is now stated that the new workhouse will be commenced in the spring.

**Devizes.**—At a meeting of the town council, held on Friday before last, the Corn Exchange Committee reported that the funds in hand amounted to something like 2,400*l.*, which is about sufficient for the building expenses, and it is arranged that the borough treasurer shall advance 1,000*l.* for the purchase of the site, to be repaid by instalments.

**Blynhill (Salop).**—The opening of the new schools in the parish of Blynhill, Salop, took place on the 5th. The design of the building is by Mr. Street. It is so arranged as to supply a boys' schoolroom, placed at right angles to the girls' room, a class-room standing at the angle. The style is Decorated. A schoolmasters' house is attached, as well as a laundry and industrial school.

**Upton-on-Severn.**—The new bridge, a fertile source of expense and litigation, says the *Worcester Chronicle*, is again prominently brought before the public. This morning a large party of engineers, counsel, and solicitors entered the quaint old town, and proceeded to make a minute survey of the bridge. We were not a little surprised to observe the clumsy manner in which the running bridge was opened, and were informed that the process of opening and closing it usually occupies from ten to twenty minutes, and that it is not an uncommon occurrence to have it open for half-an-hour at a time. The survey being made, the parties returned to Worcester, and proceeded to the Shire-hall, where they commenced upon the long-pending arbitration between the county justices and the Messrs. Nowell, who, it will be remembered, were the contractors for the stone-work of the bridge; but the only particulars we could obtain up to the time of going to press were, that the sum in dispute was between 2,000*l.* and 3,000*l.* Three eminent engineers are sitting as arbitrators and umpires.

**Birkenhead.**—At a recent meeting of the Birkenhead Commissioners, a memorial was ordered to be presented to the Treasury, praying for permission to take a lease of part of a new building in Conway-street, for the purpose of a new library and museum. It was stated that the principal room was 44 feet 6 inches by 32 feet, and 14 feet high, containing eight windows and four fireplaces. The rent will be 80*l.* per annum. The committee have already upwards of 3,000 volumes of books, and after all expenses are defrayed, there will be a sum of 300*l.* to carry over to the credit of next year. The library-rate was levied this year upon an assessment of 111,145*l.* At the same meeting a report was read from the surveyor, stating that the average erection of new buildings, and alterations to old ones, had been 73*¼* per annum for the last ten years. In 1847 the number was 89, while last year it was 241. The smallest number was in 1848, when the number was only 21.

**Halifax.**—The inauguration of the new Hall of the Halifax Mechanics' Institution took place last week. The building has its principal front to one of the new streets now being made through the centre of Halifax by Messrs. John Crossley and Sons, and will form one of a group of public buildings including the New Swan Hotel, the Halifax Joint Stock Bank, the proposed Exchange, and numerous shops, now being concentrated in this locality. The front alone has been made architectural. The ground story, to the height of 20 feet from the causeway, consists of panelled and moulded ashlar piers, from the centre of each of which springs a moulded and carved bracket, supporting a lamp and globe. Upon the piers rests a block cornice, from which rises a balustrade, with a circular balcony over the central window, supported by enriched trusses. The upper portion of the front is divided into five compartments, by three-quarter columns of Composite design, supporting a full entablature; while the windows between are circular-headed, with carved

imposts, archivolts and keys, and semicircular panels in the window-heads. The whole front is surmounted by a balustrade. The entrance to the large room of the Institute is at the upper end of the principal front, by a corridor giving access to a staircase branching right and left, and leading to the landing on the first floor. The large room is about 88 feet long, 42 feet wide, and 32 feet high, with an orchestra placed at the farther end, and with a separate access for the reserved front seats. In connection with the large room in front is the saloon; and underneath the orchestra accommodation for singers and the chorus. The lighting of the room is on the principle known as the sunlight. The ground floor of the building, with a basement story, is appropriated for class-rooms to the Institute, with a large room for library and a reading-room; also for the hall-keeper's apartments, and other conveniences. The large room will seat about 600 people, with an orchestra in addition of about 100. The orchestra framing is so constructed that the whole is removable, thus leaving a clear level platform for dioramas, or other purpose requiring space. The building is erected after designs and details prepared by Messrs. Lockwood and Mawson, architects, of Bradford, and Mr. Bull, of Halifax, has acted as clerk of works.

**Dunfries.**—The firm of Caldow and M'Kinnell, Palmerstone Ironworks, according to the local *Courier*, have contracted for the erection of a weaving-shed in connection with the factory about to be erected in St. Michael's-street by Mr. Robert Scott. The building is to be 310 feet in length and 110 in breadth within the walls, which are to be 12 feet high; the roof to be divided into five compartments, supported on cast-iron pillars; the northern sides of the roof to be covered with glass. The mason-work has been sub-contracted for by Mr. Crackston, and the joiners' and slaters' work by Messrs. Grier-son and Son; and the contractors are bound to have the building finished by Whitsunday. The larger building for carding and spinning, of several stories in height, will also be commenced without delay. The erection of these buildings, and the building of the bridges and viaduct on the Castle-Douglas and Dunfries Railway are likely to afford full employment to the masons of this district during the coming spring and summer.

**Wick.**—There is every prospect, it is said, of Government agreeing to a vote of 20,000*l.* towards the erection of a breakwater in the bay of Wick, in the estimates of 1857.

## CHURCH-BUILDING NEWS.

**Abingdon.**—At a vestry meeting held on the 9th inst. the contract of Mr. William Walters, builder, at the sum of 339*l.* for the repairs and restoration of the tower and spire of St. Helen's Church, was finally accepted, and the terms of the contract arranged for the performance of the work. The other contractors were—Mr. James Thomas (53*l.* 15*s.* 6*d.*) and Mr. Henry Peymar (57*l.* 15*s.* 9*d.*). The work is to be completed by the 1st of June.

**Burnsall.**—A vestry committee is engaged in soliciting contributions for the restoration of the old parish church. The subscriptions announced exceed 200*l.* It is contemplated to commence operations on the 1st of April, when the subscription list will be closed. Mr. Varley, of Bunsall, has been appointed architect and superintendent of the work, and empowered by the committee to examine the timber in the roof of the nave and chancel.

**Worcester.**—In consequence of the sad accidents which have recently occurred at the cathedral, Mr. Bennett, the contractor for the repairs and alterations, employed Mr. Pasby, of Birmingham, to investigate and report on the state of the scaffolding there. Mr. Pasby has accordingly done so, and in his report he says,—"I am of opinion that the materials used therein are of a good and sound quality, and the whole of the scaffolding strongly and properly constructed; and I think that no complaint can with justice be made against you, by the workmen or others, as to the want of materials employed in or available for the erection of the scaffolding, inasmuch as there are now on the ground upwards of seventy poles of various

sizes, which the workmen might have used had they thought that greater strength was required. In reference to the ledgers or cross-pieces, in the scaffolding at the end of the south transept, to which my attention was particularly called, I beg to say that they are amply sufficient for the purpose for which they were intended, namely, braces for staying the upright poles; but I consider that the workmen improperly applied them in using them as supports for stages, and thereby caused the accident."

**Winchcomb.**—On Monday before last, the new church schools were opened. A day school has existed in the town for five years, with an average attendance of about 130 scholars; but there was no suitable schoolroom. After some attempts to raise the necessary funds for such an edifice, Mr. W. Smith, solicitor, who had promised a subscription of 25*l.* commenced the erection of a schoolhouse at his own expense, and he has just completed the schoolroom, master's residence, &c. at a cost of nearly 3,000*l.* and the necessary additional buildings will involve an outlay of probably 1,000*l.* more. The new school, of which Mr. W. H. Knight, of Cheltenham, is the architect, stands near the entrance to the town from the Cheltenham-road, and is capable of accommodating about 250 scholars. The late Mr. John Dent, of Sudeley Castle, left 2,000*l.* to endow a school at Winchcomb, and no doubt this sum will soon be applied to the endowment of the school now erected.

**Edgbaston.**—The parish church is about to be re-opened. A south aisle, terminated by a porch adjoining the tower, has been added, and the gallery has been extended across the whole of the west end, thus affording 325 new sittings, of which 100 are free. The aisle (which is 72 feet long, and 27 feet high from floor to ridge) is divided from the nave by five arches of the later Perpendicular period, in accordance with the general style of the building. The windows formerly on the south side of the nave have been inserted in the aisle wall, and at the east end is placed a new window of four lights. The floor of the church is laid with white octagonal tiles, interspersed with small black tiles, diamond shaped. The new aisle has been erected by Mr. Hardwick, from the designs of Mr. Fiddian.

**Manchester.**—The New Barnes Cemetery recently opened consists of 21½ acres, 11½ being set apart for consecration for members of the Church of England, six acres for the Dissenters, and four for Roman Catholics. Chapels in the Early Decorated style of Gothic architecture have been erected for each denomination, the Episcopal one being the largest and most richly decorated. It has a spire and lantern 96 feet high, and its internal dimensions are 36 feet by 20 feet. The cost of the three chapels and lodge was 2,460*l.* The contractors were Messrs. Fritchett and Sons, of Darlington. The total cost of land, buildings, &c. will be 16,000*l.* The masonry was done by Messrs. Kilis and Hinchliff, of Hulme; the woodwork by Mr. Dallow, of Pendleton; and the general laying out of the grounds by Mr. Forrester, clerk of the works.—The consecration of St. Paul's church, Stretford New-road, took place on Saturday before last. The church was built by Messrs. Mellor, Son, and Terras, and has cost 2,200*l.* The edifice is constructed to accommodate 1,100 persons, 367 free. The church is 95 feet long, by 48 feet wide, outside measure, and being enclosed by buildings, the light is chiefly obtained through a clerestory supported by wooden arches resting upon iron pillars. The front, which is of stone, has a deeply-recessed porch, flanked by large six-light windows, and surmounted by a third, above which rises a tower and spire, ornamented by crockets. The spire, including the nave, is nearly 100 feet high. The style is Decorated, of the time of Edward III. The architect was Mr. Robert Moffatt Smith. In the interior, horizontal beams, each supported by a perpendicular one, support the sides of the gallery. There are centre and side aisles, a vestry by the side of the chancel, and over the vestry there is a small apartment where the organ is concealed.

**Middleborough.**—The front of the new Independent Chapel, Middleborough, which a few weeks ago had a very narrow escape from being consumed by fire, has shrunk, it is said, so much



that it will have to be taken down and rebuilt, entailing an expense of from 700. to 1000.

**Edinburgh.**—At a late meeting of the Lord Provost's committee, the subject of Trinity College Church was discussed at some length, and two motions were submitted, the one by Mr. Forrester, to the effect that the council should erect a church, according to the style and model of the old one, on some suitable site at the head of Leith Wynd or Ireland's Woodyard, or in some other situation; the other by Mr. Johnston, to the effect that a suitable church should be erected, at an expense not exceeding 7,000. exclusive of the cost of the site, and appointing a sub-committee to make inquiries on the subject of a site. The motion of Mr. Johnston was carried by a majority of five, nine members having voted for it, and four for Mr. Forrester's.

**Kirkwall (Orkney).**—The cathedral church of St. Magnus is now fitted up for public accommodation. The plan has been executed by Mr. Samuel Baikie, under the superintendence of Mr. Richard Spence. The screen which separates the choir from the nave and transepts was designed by Mr. Spence. The church is lighted with gas, fitted up by Mr. John Rendall. The choir is heated by pipes leading from a furnace under the vestry. The gallery, which is placed in the north aisle from the grand east window, westward, issues into three fronts between the pillars; the pulpit being so placed, with its back to the easternmost pillar of the south side of the choir, and its front towards the north-west, as to enable the greatest possible number of the congregation to see the officiating minister.

#### STAINED GLASS.

**Oceorton.**—A stained glass window has recently been put up in the church here. It is of three lights, and contains medallions, with subjects from the Old and New Testaments, with mosaic backgrounds and borders. Two of the tracery lights contain angels with scrolls, the remaining openings being filled with ornament alone. The window has been erected by Miss Bennion, of Wrexham, in memory of her sister, and was executed by Messrs. Pilkington, of St. Helen's.

**Cirencester.**—A stained glass window has been placed in the new church as a memorial of the late Mr. Hugh E. Strickland. The expense has been borne by a few friends of the deceased gentleman living in Cirencester.

**Wellington.**—St. John's Church has been lately ornamented by the addition of some stained windows, two of which were the gift of the Rev. W. W. Fulman. The eastern one is dedicated to the memory of the late vicar and his wife. The four centre lights contain the figures of the four Evangelists. The second window, which is the workmanship of Mr. J. Toms, of Wellington, contains three compartments filled with pattern quarry glass; and the centre light shows the figure of the Saviour with the emblems of the passions, whilst the side lights represent the "Agnus Dei," a dove, and the Holy Trinity. Mr. Toms, it is said, has received orders to execute two corresponding windows for the north side.

**Eyton.**—At Eyton Church, near Wellington, Mr. Evans, of Shrewsbury, has recently placed a window in the chancel, the subject being St. Catherine, to whom the church is dedicated. The figure of the saint is after Rubens. The window has been erected to the memory of Mr. Thomas Eyton, of Eyton, by his son, Mr. T. C. Eyton, who has considerably enlarged and improved the chancel.

**Thurston.**—The Rev. Donald Baines, rector of Thurston, near Aylmer, gave Mr. Evans, of Shrewsbury, a commission for two windows, about 9 feet high and 2 feet wide, for the north and south sides of the chancel of the old church of that village. These windows have been executed, and are now in course of erection. The figures are Moses and Daniel for the north side, and Aaron and St. Paul for the south.

**Whitnash.**—A western window on the north side of the chancel of Whitnash Church has been given as a thank-offering. It represents the slaying of the plague at the threshing-floor of Araunah the Jebusite. In the lower part of the window two mothers are represented mourn-

ing over their children, the one dead, the other dying: in the upper part is the angel with a drawn sword, stretched over Jerusalem, which is placed in its rocky foundation (Sion), while a hand from a cloud stays him, as if bidding him to "Put up his sword into the sheath thereof."

In the centre is King David, with his crown on the ground, praying by the threshing-floor of Araunah. The whole is surrounded by a border of marguerites. Above is the reference to the Scripture, 2 Sam. xxiv. 17; and beneath, the inscription. The window was executed by Mr. Lavers, from a design by Mr. Alfred Bell.

**Harsted.**—A window of stained glass has been placed in the chancel of Hawsted Church, to the memory of the late Sir Thomas Cullum, Bart. The glass is by Mr. Heaton, of London. The subject is "The Ascension."

#### "BRICK-OLGY."

WHAT is the meaning of the following names as applied to bricks:—*Cutters (firsts); Malm; Paviers; Yellow and White (seconds); Common Place; Rough Stocks?* Is the same material used for these varieties? CENTURION.

The first four descriptions of bricks mentioned are varieties of the same manufacture, and are all composed of the best earth, technically known as "marl," carefully washed and prepared, and the bricks are burned invariably in close kilns. It is by the firing, &c. that the different results are accidentally produced. When the combustion is perfect, the result would be "cutters," so called from the facility with which they may be cut with a brick-axe, and rubbed to any required form: they are also remarkable for their evenness of colour; but where the heat is too strong, too much heat tending always to vitrify,—"paviors" would be the result, their name explaining their purpose; and when scarcely strong enough, "seconds," they not having colour enough to be classed as the first, nor the hardness necessary for the other. "Place" bricks and "stock" bricks are made of inferior materials, and without the care needed in the former cases. They are burned in clamps, of which the "stocks" constitute the inner, or better portion, and the "place" the outer coatings, or parts where the combustion has been the least perfect. Place bricks, in other words, are bad bricks.

#### COMPETITIONS.

**Rugby Town Hall.**—The Town Hall Company have adopted the design of Mr. Murray; the cost being estimated by the architect, with certain additions, at 2,800. The design by Messrs. Clarke and Worthington was put aside, their estimate being 4,100.

**Corn Exchange, Berwick.**—The designs lodged by Mr. John Johnstone, architect, Newcastle-on-Tyne, have been selected for the new Corn Exchange and Concert-room for Berwick-upon-Tweed. There were 54 competitors.

**Lichfield Museum.**—Several competitors have asked for information respecting this competition, designs having been sent in September last. We have applied to the committee, but have not received any answer.

#### SECOND MEETING OF UNEMPLOYED BUILDING ARTISANS IN SMITHFIELD.

On Monday, the 19th, another meeting of the unemployed artisans connected with the building trade was held in the open space of Smithfield-market, for the purpose of considering their present depressed condition.

Mr. Hugh Pearce, a carpenter, who was voted to the chair, contended that the workmen were not responsible for their present position, and they considered themselves entitled to relief from the Poor-law, as a right. They had no wish to be out of work; but, if none was given them, their depressed condition should be taken into consideration, and something done for them by the Government. He earnestly hoped that they would do all in their power to disprove the assertion that there was a want of unity among them, and that, in whatever they did, they would use their best endeavours to preserve the public peace. The best course that could be adopted would be to proceed en masse to the union-house, and there demand relief: at the same time, they must bear in mind they were not asking for charity.

Mr. Murray then moved the following resolution, which was afterwards carried unanimously:—

"That this meeting, consisting of operatives unemployed by causes for which we are not responsible, demand of the authorities that the means of existence be extended within our reach by useful and profitable employment in agriculture and manufacture; that until such employment be

afforded we fall back upon our ancient and indisputable right to parochial assistance, unaccompanied by the insulting, debasing, and infamous conditions at present persisted in."

Mr. M'Heath (the hon. secretary) read a lengthy address, calling on the employed not to work any overtime whilst one man was out.

The address was adopted, and a resolution, pledging the meeting to support the National Association of the Unemployed, was also carried, after which the meeting adjourned.

#### DISTRESS OF THE BUILDING OPERATIVES.

SIR, The meetings which have recently taken place with respect to this object, and the resolutions entered into at the one held in Smithfield, on Monday, the 12th inst. naturally direct public attention to the subject, as one of very serious import. It is essential, however, that the workmen themselves should really understand the position of affairs, and the utter uselessness of one, at least, of the remedies which they propose; and that they should be led to consider whether a wiser solution may not, in fact, rest with themselves.

I am myself one of the craft; for, being an architect and surveyor, my interests suffer when the building trade is depressed, and enterprise in that department is put a stop to. Therefore I desire, as earnestly as the operatives, that matters should improve, and that, in common with them, I myself should be able to hail better times.

There are two great causes of the present want of employment for the building mechanic,—the employment of capital in more profitable investments, and the conduct of the operatives themselves. Persons can now realise from 5 to 6 per cent. very readily upon loans, or merely by deposits at Joint Stock Banks, and therefore are not willing to be satisfied with 4 or 5 from builders, encumbered with the business of mortgages or other securities; and unless interest is as low as that, building operations cannot allow the builder any profit. And why is this?

Materials are cheaper than they used to be, and houses are no less in request, but the labour is so costly that it keeps up the price of production above the market value.

Some years ago a first-rate carpenter, bricklayer, or mason would have been satisfied with his 4s. 4s. 6d. or at most 5s. a day; but the artisan finding that building prospered, that there was a great demand for labour, immediately increased his claim for wages 3d. a day, and then advanced again and again, until at length the wages came to 5s. 6d. But not content with the increase, they have claimed their Saturday holiday. So that builders, if they yield to these large wages, can make no profit for their heavy outlay on labour, and can only realise something for themselves out of the materials.

But this is not all, for the trade unions have been productive of immense injury. They prevent the builder from paying his workmen according to their respective merits, as they claim all to be paid by one standard, that is, the highest. They refuse to work with non-unionists; thus driving all men, whether willing or not, to become unionists. And I recollect one instance of a master bricklayer, who was in a way of moderate business, and used occasionally to work himself on the scaffold, although he employed several men; but he was not allowed by his own workmen to work on the same scaffold with them, because he was not a unionist. In fact, the regulations of the unions are most oppressive tyranny to workmen and their employers, and have completely disorganised the relations which once existed between the operatives and the employers.

One of the remedies for immediate distress proposed at the late meeting was the application to the parish for relief. How great a fallacy! As if the parish were bound to find bread or money for nothing. To the able-bodied applicant they will offer labour at perhaps 1s. a day, or probably breaking stones at so much a cubic yard, or picking oakum. Are the skilled artificers prepared to do that, when they know they can always have at least 2s. or 3s. a day wages for their usual work? The truth is, that the operative must be willing to conform to the times, and to narrow his expenses, till a more prosperous period. Then will the building trade revive, and the builder be able to afford interest on the loans by which he may go on with his operations and continue in work the men who have themselves aided to stop short building enterprise by reason of their claims for wages, for Saturday relaxation, and conformity to regulations that paralyse themselves and their master under the iron yoke of the unions. Let them for a moment consider the moderate pay of the policeman, for example, who is bound to be able to read well and to write a good hand, and to have an undecidable character; exposed day and night to all weathers without any weekly holiday, and oftentimes, when in the discharge of his duties, his life and person placed in the greatest



jeopardy. Yet the policemen, as a body, are most decent and well-behaved, and generally bring up their families well upon a weekly remuneration much less than that claimed by the building operative,—in fact, with wages little better than those of the bricklayer's labourer.

These are, perhaps, hard truths; but they are truths, and well meant, and proceed from one whose interests are the same as theirs, and who has for them the kindest feelings of a fellow workman in the building craft.

T. L. D.

#### THE MODE OF HANGING THE WEST-MINSTER GREAT BELL.

MR. W. L. BAKER, C.E. the patentee of certain modes of effecting the turning of large bells so as to present new points on which the clapper may strike, thus preventing the destruction of the bell by the wearing of holes in any one part of it, has published a tract, in which he re-urges his claims to be regarded as the true inventor of the plan adopted by Mr. Denison, or rather, as he might, perhaps, have more correctly said, the first enunciator of the principle of turning the bell so as to present a succession of points on which the clapper may strike, to prevent its wearing out any one point by constant action on it. Mr. Baker says of the mode adopted by Mr. Denison, it is "but a trifling modification of the third method described in my specification." He claims the turning on an axis generally, for the purpose specified, although he seems to admit that it is impossible to patent a principle. Towards the close of the tract, which assumes the shape of a letter to Mr. Denison, Mr. Baker says,—"The 'short round neck' of your bell, is precisely the same as the 'tail,' 'projection,' or 'axis' of mine; only that you have reduced the length, and, instead of screwing on the projecting portion or flange, you cast the whole in one piece. However this be supported—by four or six bolts, or by the stock itself—this it is that supports the bell. I need say no more to establish the fact, that your plan is taken from mine, with the very slightest alteration, one merely of the proportion of the parts. By making your 'axis' or 'neck' somewhat shorter than it is shown in my drawing, you produce what you call an original design, and appropriate the fruits of my labours, not only without acknowledgment, but while contemptuously deeming my invention."

#### THE NEW ROADS IN THE PARISH OF PADDINGTON.

KNOWING the interest you take in everything connected with buildings, and the approaches, permit me to call your attention to the disgraceful manner in which the vestry of the parish of Paddington always attempt to evade the taking to new roads, in order that they may shift the expense of repairing from the highway-rates (to which you must know all houses in any new street, whether kept in repair by the parish or not, are assessed, and are compelled to contribute) to the owners of the property, until the vestry choose to pass a resolution that the road shall become a parish road; in confirmation of which, I myself have been ten years, and some thirty years, the same having been rated to the highway rate, whilst the vestry have not expended one penny upon the roads. And as a further illustration of the manner of doing business in this model parish—for you may be aware they will never endure a comparison with any other—I will just state the following case:—Last July the whole of the footways and road running between a row of houses on one side, and a new church on the other, and forming about one-half in length of a new street, were put in proper repair agreeably to the rules of the vestry, and according to the instructions of their surveyor. An application was then made to the vestry, signed by the freeholder, dedicating the road to the parish as a public highway. The highway board surveyed the same, and reported that it was properly constructed, recommending the vestry to take it to, with a stipulation that the freeholder should keep up a bar, to prevent any one passing over it to the vacant ground beyond. This he very properly refused, as an interference with his private rights, and an unusual request. The vestry then appointed a surveyor on the part of the parish—the lessor one on theirs—who reported that the road was properly formed, made, and drained with proper materials, and fit to be taken to as a parish road. The same was read at the vestry last Tuesday, when some of our liberal members, in the face of these facts, dared to propose and carried a resolution that the road be not taken to, on the ground that the land beyond would be built upon at some future time—say next year, or it may be twenty years hence;—really a most absurd argument.

Now, sir, I wish to point out to the parish, who these men are who thus trifle with the rights of their fellow parishioners: they are the representatives of the South-east Ward, and I believe about twenty-

four—one-third of the whole vestry; and since they have been elected, they have expended, out of the highway rates, to which my property contributes equally with themselves, the very moderate sum of 1,100*l.* in repaving and widening certain bye streets and a square in this highly-favoured ward, where you seldom meet any other than the inhabitants of that locality, and another 1,000*l.* in new sewers; so that they are to have wider pavements and new sewers in one corner of the parish out of the parish money, but in the more recently built parts, where the owners have properly paved the roads and constructed new sewers at their own costs and charges, they are not even to have them kept in repair.

If some of your readers can suggest a legal remedy for this disgraceful conduct of the vestry, they will confer a lasting favour upon the inhabitants of the 101 new streets in the parish; otherwise they must look to the men they elect next May, and in the mean time organize for carrying out so important an object.

THOS. MAYNARD.

#### THE HYDE-PARK DISTRICT.

A GREAT improvement is about to take place in the neighbourhood of the Marble Arch, by widening the road from the gate to Hyde-park-place, throwing the rails 20 feet into the park—the increased traffic requiring more space. This has been decided upon by Sir B. Hall, and the parish of Marylebone have come forward to make the road and meet the expense, which will be immediately carried into effect.

It has been proposed to surmount the Marble Arch with a group, consisting of the Queen as Victory, in a triumphal car; and a committee is about to take up the matter, consisting of several noblemen and gentlemen in the neighbourhood.

It is reported that the Marquis of Westminster refuses to renew any of the leases in Park-lane, it being his intention to erect a number of detached mansions of great magnificence.

A CONSTANT READER.

#### CANADA.

THE Grand Trunk Railway Company of Canada have now made arrangements for booking passengers from the chief ports in Europe to various parts of Canada and the United States. Emigrants may thus know precisely what their voyage and journey together, to their destination, if within railway reach, will cost. Various other advantages are provided for by the company. The *Canadian News* of the 21st inst. we may here observe, is accompanied by a map of the Grand Trunk Railway, also showing the site of the Canadian Government's free grants of land. The paper contains a leading article on this subject, from which it appears that the terms of the Colonial Government are highly favourable to all disposed to seek their fortune in the Canadian colony. Indeed, the main conditions on which 100 acres of land are obtainable by any man are, that he take possession within one month after the grant is made, and erect a log-hut, or "house," of at least 20 feet in length by 18 feet in breadth. In the course of four years certainly he must have twelve acres in cultivation, and reside upon his lot, but these can scarcely be called conditions. The Government make the roads, but the settlers keep them in repair.

#### FALL OF CEILING AT MANCHESTER CATHEDRAL.

DURING the service at the cathedral on Sunday afternoon the occupants of the pews in the westerly portion of the north gallery were startled by hearing a slight crack over head, and almost immediately afterwards the whole of the ornamental plaster moulding which covered a beam crossing the gallery from front to back suddenly separated from the beam and fell upon the pews below with a loud crash. We learn from the local *Guardian* that all the plaster which had covered the oaken beam with moulding fell away from it, leaving the beam bare, and that it would be from 15 to 18 feet in length, and weighing probably 12 to 14 cwt. That so large a mass of plaster should fall from a height of many feet among the pews without injuring a single person is remarkable; but it seems that the line of the beam was precisely over the line of partition which separates the block of pews into two sections, having entrances at opposite ends; and so the plaster fell in masses upon this partition, thus breaking its fall, before it dropped in large fragments into the pews. One of these pieces is said to have been of the weight of at least 14 cwt. It is supposed that the plaster was applied to cover the beam during the repairs and alterations in the interior of the church about the year 1824, but we have not heard any reliable opinion as to the cause which has loosened it and led to its fall. The gallery was erected in 1814 or

1815; and the late Mr. Palmer, architect, in his description of the interior of the church, says, of the nave, that "the roofs of the side aisles, which had hitherto been open to the rafters, were each of them now celled over, and worked into compartments corresponding with those in the nave, and the intersections decorated with orbs, leaves, and flowers. The pillars, arches, and divisions between the smaller side aisles, together with the walls, were also celled over, to harmonise with the general improvement." These works were completed about the year 1819. He speaks elsewhere of "the addition of more than an inch of (Roman) cement in thickness upon the surface of the mouldings on the pillars and arches;" but whether this applies also to the mouldings of the ceiling does not appear.

A survey has since been made by Mr. J. P. Holden, the architect of the chapter, and the damage is being repaired.

#### RECENT PATENTS.\*

1187. WILLIAM MAUGHAM.—*Rendering Wood Fireproof*. Dated 20th May, 1856.—This invention consists in simply steeping wood in a solution containing phosphate of ammonia, or of producing phosphate of ammonia within the wood, and of subjecting the solution and the wood to heat.

1324. JOSEPH BRIGGS.—*Blocks and Bricks for Building*. Dated 4th June, 1856.—This invention consists in constructing the parts of blocks and bricks for building, whether of wood, stone, iron, earthenware, clay, or other suitable substance, in various forms corresponding with each other, and so that each separate block or brick has apertures into which may be inserted rods, bars, pins, ties, or bolts, so as to hold the blocks or bricks together. The apertures are so formed and placed that upon any two or more blocks being brought together in the position they are intended to occupy, one or more of the apertures in each block shall correspond with, or come opposite to, one or more of the apertures in the next block or blocks, to allow of the passage of the tie-rods through them, or of their being slipped in the tie-rods.

842. A. MORTON.—*Improvements in the Manufacture of Paperhangings for Decorative Purposes*. Dated 7th April, 1856.—This invention consists in a number of improved modes of combining and treating the materials employed in paperstaining.

850. A. C. L. DEVAUX.—*Improvements in the Construction and the Fitting-up of Granaries*. Dated 8th April, 1856.—This invention relates to a novel granary, the object being to obtain a perfect ventilation of the grain; and to the use of certain contrivances for facilitating the storing of grain in granaries, and the discharging of the same therefrom. The invention cannot be described without illustrations.

790. H. N. PEMBERTON.—*Improvements in Machinery for Driving Galleries through Rock and other Strata*. Dated 29th March, 1856.—This invention consists in machinery for jumping or chipping a cylindrical hole or gallery through rock or other strata by means of chisels or points fixed in a frame on the end of a shaft, which is drawn backwards and forwards by steam or other power, and which revolves a little between each stroke.

840. W. E. NEWTON.—*An Improved Construction of Furnace for the Manufacture of Glass*. (A communication.) Dated 7th April, 1856.—This invention consists in constructing shelves within the cone of an ordinary glass furnace, for containing the batch or raw material (consisting of soda and lime), in order to heat the same to a high temperature before it is introduced into the crucibles, thereby utilizing the otherwise waste heat which would escape at the top of the cone, preventing the breaking of pots, and reducing the labour and time occupied in charging the pots or crucibles.

775. T. W. BURRELL.—*Improvements in Machinery for obtaining Power by Water*. (A communication.) Dated 31st March, 1856.—The object here is to regulate the openings for the flow and stoppage of water in turbines. The principle consists in opening or shutting the various compartments of the water escapements independently of each other; hence as many openings may be closed as may be considered necessary to correspond with the volume of water to be supplied, and at any time a greater or less number can be closed.

871. G. JACKSON.—*A New or Improved Steam boiler, to be heated by the waste heat of puddling or mill furnaces*. Dated 11th April, 1856.—The invention consists of a steam-boiler of a cylindrical or nearly cylindrical figure set vertically, and having a central chimney into which the products of combustion, &c. are delivered by horizontal flues, after they have circulated about the vertical sides of the boiler, the chimney being isolated from the upper part

\* Selected from the *Engineer*, the *Mechanics Magazine*, and other sources.



the boiler by an annular air space surrounding the chimney to a depth below the water line of the boiler.

The Damascus Steel Manufacturing Company have patented a process for converting wrought-iron into a steel, which consists essentially in the use of the cyanogen compounds of cyanogen and of sal-ammoniac, either separately or in combination with each other, and with other ingredients, when mixed and fused with wrought-iron which is to be thus converted.

Miscellaneous.

**DONCASTER CHURCH.**—Allow me to correct a statement which has appeared, to the effect that, by increasing my own subscription to 1,000*l.*, I have guaranteed the remainder of the deficiency, on behalf of the building committee or myself. On the contrary, the fact is, as you will see by the enclosed circular, that if something like 5,000*l.* more not raised very speedily by general subscriptions, work must stop; and this (so far) magnificent arch be left a mere shell without its central tower, which was the great glory of the old church, and will tower far above any other central tower in England, except in a few of the cathedrals; and, moreover, it is good reason to believe that, if the present contract is not made absolute within a few months, the tower will cost half as much more to build at any time. The public ought to know that no more than three-fourths of Mr. Scott's original estimate was subscribed before; and there is no doubt that if we enabled to proceed under the present contract, the whole work will be done within the original estimate—a most unusual circumstance, I should judge, and one which entitles both the architect and committee to some credit.—E. B. DENISON.

**PLUSHING SUFFOLK BASIN.**—In the very excellent and appropriate article with which you commence your volume, you draw attention to the collection of materials and inventions connected with building now in the Suffolk-street Rooms. One of those which you particularize is Messrs. Botten's "Patent Regulator of Heat," which leads me to address a few words to you on behalf of another closely, worthy of public notice, and which, though as yet not much spoken of, is not the steadily working its way into public favour. The title to which I allude is the *Self-acting Plush*, manufactured by Stephen Green, Lambeth. The apparatus is put in motion by means of a moveable seat, which, when pressed down, causes a quantity of water to accumulate in a service-box, and on the seat being liberated, and rising up, this water is forthwith discharged into the pan, and clears all before it.—L. W.

**THE POSTAL DIVISIONS.**—I have found that, even with the help of an ordinary map provided for the purpose, it is not very easy to define the districts which are marked out by the new Post-office regulations. Would it not be useful to mark either on or to the name of each street the letter of the district to which it belongs? Many of the names of London streets might be renovated with advantage at the same time, for in some instances the names seem to have dropped, and in others they are rather obsolete; it requires younger and sharper than mine to decipher them with comfort even at the daytime; at night it is a hopeless task, for the gas lamps are so arranged that not even a ray is shed upon the street-mark; and this circumstance is just as inconvenient for cab as foot passengers: might it not be possible to devise some kind of lamp which would show us the name of the street, and at the same time illuminate the foot-ways? Corner lamps, too, would be, in many instances, a means of breaking the tiresome uniformity of miles of post, with their lanterns all of the same fashion.—ONE WHO TRAVELS IN LONDON.

**ALL OF TWO HOUSES, HOLYWELL-LANE, SHIRE.**—On Saturday, the 17th inst. the inhabitants of a narrow end of Holywell-lane, Shorelitch, were thrown into a state of consternation by discovering that two large old houses, both untenanted, one of which was undergoing some repairs, had bulged forward in a most alarming manner. Information was immediately given to the authorities, and an efficient force of the police, who were specially in attendance, partly stopped all vehicles and foot passengers from passing up the lane, which, although an extremely long and inconvenient thoroughfare, is one of the great outlets from the Eastern Counties Railway Station. These precautions had scarcely been taken when both the houses fell in with a tremendous crash, but fortunately without doing any material damage. It appears that the tenant had left the place long before, and that the workmen had been set to work to erect a wall in front of the house, for the purpose of preventing the premises, as they had been conveyed by the surveyor.

**EFFECT OF GAS-WORKS.**—You often in the *Builder* remark on things calculated to injure the public health, and I would now call your attention to the state of the fronts of the houses built under the direction of Messrs. Hunt and Stevenson, for the Duchy of Cornwall, in Lambeth, near to Vauxhall-bridge. The light painted work is turned by the gas a complete lead colour, and I do not think one of the shops is left, although completed some time. The inhabitants must breathe the same poisonous air that has changed these fronts, and were you to see them I am convinced you would remark upon the effect.—A. B.

**GAS IN DUBLIN.**—The *Dublin Daily Express*, of the 7th inst. has a leading article on this subject, in which it says,—"Private advantage arbitrarily conflicts with the public interest. How else can we account for the startling fact contained in the statement that has appeared for some days past in the daily press of this city? According to that statement the price of gas, per thousand cubic feet, is, in—London, 4*s.*; Liverpool, 4*s.*; Whitehaven, 2*s.* 6*d.*; Bolton, 3*s.*; Rochdale, 3*s.* 3*d.* to 4*s.*; Sheffield, 3*s.* 6*d.* to 4*s.*; Birmingham, 2*s.* 10*d.* to 3*s.* 10*d.*; Bristol, 4*s.*; Belfast, 3*s.* 9*d.*; Dublin, 5*s.* 10*d.* From this statement, the accuracy of which cannot, we believe, be questioned, it appears that the inhabitants of Dublin are charged one and tenpence more for each thousand cubic feet of gas consumed by them than is paid for a similar quantity in some parts of the United Kingdom, and as much as 2*s.* 10*d.* and even 3*s.* more per thousand cubic feet than is charged in other places. Then there is another point to be considered, viz. the quality of the gas consumed; and we find it further stated that the gas supplied in Dublin is in point of quality greatly inferior to what ought to be provided, so that, in fact, the price actually paid by the consumer is 7*s.* per thousand cubic feet, or thereabouts. Doubtless, local circumstances will operate to vary both the current price and the quality of gas in different towns, but it seldom happens that serious fluctuations arise on either of these scores. Coal is the raw material from which to use gas. Either let the present scale of prices be justified, or the public at large have the benefit to which they are justly entitled."

**NEW TOWN AT MILFORD.**—The papers say, plans for the erection of a new town at Milford have been prepared, and application is to be made in the next session for an Act to carry the same into effect. It is laid out in front of Milford Church, and is ultimately to be extended to Castle Pill. The surveyors have been engaged in marking out the ground. The plans comprise terraces, shops, and detached villas, with a complete system of lighting, water, and drainage. The erection of public baths and an assembly-room has been settled; and, in conjunction with the line from Johnstone, it has been determined to erect a new pier, a desideratum long needed.

**PROGRESS OF BIRMINGHAM.**—The great activity in the erection of dwellings which characterised the period from 1851 to '54—caused very much by the destruction of many hundreds of houses in railway construction—has not only not been maintained, says the *Birmingham Journal*, during the past year, but the number of houses built last year is not a third of the number erected three years ago, and is not even up to the average of the ten years ending 1851. A return of the building plans registered with the borough surveyor from the 1st of January to the 31st of December, 1856, shows this. The *Journal* then proceeds to give a table of these plans for the four past years, from which the following few items are extracted:—

	1853.	1854.	1855.	1856.
Houses.....	2,781	4,219	1,253	803
Chapels.....	0	0	1	0
Churches.....	3	3	2	1
Synagogues.....	1	0	1	0
Schools.....	5	9	4	1
Manufactories.....	22	17	3	8
Warehouses.....	33	35	20	13
Ranges of sleeping.....	38	62	37	39
Foundries.....	3	2	1	0
Casting shops.....	1	4	2	0
Glass-houses.....	0	0	0	1
New shop fronts.....	37	62	34	0
Alterations and additions.....	50	33	53	34

Amongst the causes in operation to produce this apparent falling off are classed over-speculation, war influences, high prices of labour and materials, and dearth of money. The 803 houses returned as erected equivalent to an augmented population of 3,613 during the year—do not represent the extension of the community. The borough is being built round on almost every side, going still further into Warwickshire, extending for miles into Stafford, and invadingly marching into Worcester. Probably the number of dwellings erected in close contiguity to the borough is as great as, if not in excess of, the whole number built in Birmingham itself.

**THE KILKENNY ARCHEOLOGICAL SOCIETY.**—The January meeting of the Kilkenny and South-east of Ireland Archeological Society was held in the Tholsel, Kilkenny, on Wednesday week, the county surveyor, Mr. Sampson Carter, in the chair, when eight new members were admitted. The annual report was read by the secretary, and from which it appears that in the six meetings held in 1856, there were 112 new members elected. Amongst the subsequent proceedings of the meeting was a communication from the Rev. John O'Hanlon, to the effect that the Mining Company of Ireland, who had become possessed of the interesting ruins of the ancient church of Glendalough (of which we some time ago gave an account), had resolved to take measures to prevent them from going to total ruin, a circumstance highly creditable to a mere commercial and money-making concern such as this company of course must be. The thanks of the Kilkenny Society were accordingly given to the Mining Company of Ireland for the landable example they had thus set to others.

**MESSRS. MARE AND CO.'S PROPERTY.**—The works lately the property of C. J. Mare and Co. are about to be carried on, under the Limited Liability Act, by a Joint-stock Company, to be called the Thames Iron and Ship-building Company. The shares are to be of 5,000*l.* each, to be paid up in cash within a month, and the entire amount has been subscribed by fourteen persons of good commercial standing in London. The property was purchased of the estate of Mare and Co. by Mr. Peter Rolt.

**ANCIENT SCULPTURES FROM CENTRAL AMERICA.**—Messrs. J. and A. Tregeon, two gentlemen from Cornwall, connected with mining in Central America, returned from that country in the steamer *La Plata*. During their stay there, they visited the celebrated ruined city of Copan, described by Stephens in his "Travels in Central America." They have collected from these ruins various specimens of sculpture, which they have brought with them, and which, it is to be hoped, will find their way into the National Museum.

**GAS RETORTS IN ENGINE FURNACES.**—Mr. Nicolas Delannoy, of Tournay, Belgium, has patented an invention, by which he proposes to introduce into the furnace of a steam-engine, about an inch from and below the generator, a receiver, placed through the latter, and occupying the whole length of the furnace, with exit outside the brickwork, and escape-pipe at the extremity, to allow the gas generated to pass on to the purifying apparatus. The receiver is to rest on the masonry in the interior of the furnace, and face the fire, guaranteed from its action by a refraction-plate where the fire is fiercest.

**COPPER TRADE OF SOUTH WALES.**—The copper trade of South Wales is at present very brisk, and, as the advance of 1*d.* per lb. has been established, the price is now the same as it was before the reduction. The plant of many large establishments is about to be extended, to meet the increased requirements of the trade.

**THE BOYS' REFUGE, COMMERCIAL-STREET, WHITECHAPEL.**—The third annual report of this useful institution shows that there are now 100 boys in the institution, 27 of whom are orphans, 19 without mothers, 34 without fathers, 17 have both parents living, and 3 have been deserted; 11 have step-fathers, and 8 stepmothers, and 20 have been to prison. During the past year 74 have entered the institution, and 45 have left. Of those who have left 14 have been bound apprentices, 11 restored to their friends, 3 provided with situations, 11 have left irregularly, 2 have been sent to sea, 2 have been expelled, and two have been taken away by their parents. By the balance-sheet it is seen that the total expense (1,363*l.* 14*s.* 4*d.*) for an average of 95 boys has been 14*l.* 8*s.* per head, and that the food has been at the rate of 2*s.* 4*d.* per week for each inmate. Mr. Charles Buxton is the honorary secretary.

**THE CHURCH OF ST. PHILIP THE EVANGELIST, ISLINGTON.**—On the 19th, the Bishop of London consecrated the Church of St. Philip the Evangelist, Arlington-square, Islington. It is in the Anglo-Norman style; built with Kentish rag and Bath stone facings. The church consists of nave, side aisles, and transepts. The chancel terminates with an apse of a semicircular form. There is a low square tower at the north angle of the west front, the lower portion of which constitutes the principal entrance to the building. The church will seat 1,054 persons, principally on the ground floor, there being only one little gallery. There is a small stone turret attached to the west end of the south aisle. The aisles are lighted by plain semicircular-headed windows, and the clerestory by small circular windows. The apse contains five windows of equal size, semicircular-headed. The organ is enclosed with open arcade work, and a similar construction on the opposite side of the chancel serves for the vestry. The entire outlay is stated at about 5,000*l.* Mr. Gough was the architect.



"THE MAGNIFICENCE OF ROME."—A correspondent, "G. A. Jernyn, C.E." has forwarded to us some observations on Professor Donaldson's lecture on this subject, objecting to some of the statements made. It should be remembered, however, that it was an extempore discourse, meant, as the professor said, not for the profession, but for a general audience, and in which he sought to treat matters largely, and not with the minute accuracy of the class-room. The only part of Mr. Jernyn's remarks which touches the particulars given in our own report, refers to the height of the columns of the Temple of Jupiter Stator (or the Cornizio), called in the lecture, broadly, 60 feet; but Mr. Jernyn says they are 45 feet 3 inches in height, with a diameter of 4 feet 5 inches. According to Taylor and Cressy, however, our correspondent himself is not quite right, for these authors call the height of the columns 48.4, 9, and the diameter 4.10.2. Mr. Jernyn continues,—"The beautiful Corinthian columns in the basilica of St. Paul (built 16th July, 1824), the lecturer stated were taken from Hadrian's mausoleum; but St. Paul's was built in 996; whereas, the mausoleum, with its columns and statues, was perfect in 596; besides, the height of the columns, which is 34 feet, is much too great for them to have stood on the mausoleum. It is also incorrect to say the metal pine now in the garden Belvedere, ever stood on the top of the mausoleum: it is 12 feet in height, and was covered with a canopy supported by eight columns, surmounted by two peacocks and four dolphins, all gilt: it stood before the old basilica of St. Peter, and served as a fountain."

THE INDURATION AND PRESERVATION OF STONEWORK.—At the next ordinary general meeting of the Royal Institute of British Architects, to be held on Monday evening, the 26th of January, the discussion on the various methods of indurating and preserving stonework will be resumed.

IRON MANUFACTURE.—BESSEMER'S PATENT.—Two additional patents have been specified by Mr. Bessemer, one a modification of the ordinary square, in place of rolls, in order to prevent his malleable iron "being crushed or broken when put between rollers;" as when ingots of malleable iron and steel are formed by his process, they are "more or less spongy or cellular, and that owing to this, and their crystalline condition, they are apt to be crushed or broken when put between rollers of the kind now ordinarily used for rolling malleable iron." The second patent is for improvement upon his already patented furnace.

THE ARCHITECTURAL ASSOCIATION.—At the Conversation of the Architectural Association to be held at Lyon's Inn Hall this Friday evening, the 23rd instant, Mr. Ruskin will read a paper on "The Use of Imagination in Modern Architectural Design."

MONSIEUR HITTORFF, Architect, Honorary and Corresponding Member of the Royal Institute of British Architects, has just been elected President of the Class of Fine Arts of the Institute of France. Monsieur Rohault de Fleury, another architect and correspondent of the Institute of British Architects, Vice-President.

REPORT OF LIVERPOOL BUILDING SURVEYOR.—The report of Mr. Risthion, the building surveyor, to the Health Committee of the Liverpool Town Council, for the past year, has been made and circulated. From this report it appears that the total number of houses erected in 1855 was 1,355, and in 1856, 1,703, giving an increase of 34%. The report states that the main increase has been in houses varying from 20% to 40% per annum rental, which became occupied as soon as finished; a proof, as remarked, that more houses of that class are required, but from a table appended, it appears that while the number of dwellings from 23% to 35% and upwards, was 231, the number at 12% to 25% was 1,455,—an immense proportion of the whole 1,703 erected and in course of erection. Sixteen warehouses had been erected, 280 separate cellar dwellings had been constructed during the year. Although not very desirable, the reporter considers them better than the old dwellings in confined courts, as they have each a separate yard and closet, and are well elevated above ground, and ventilated. Through the co-operation of the borough engineer and inspector of nuisances, a vast number of nuisances caused by cesspools and ashpits had been abated.

THE COST OF NOT KEEPING A PROMISE.—Last week, at Birmingham, a jury was empanelled, under the Lands Clauses Consolidation Act, to assess the damages due to the Governors of King Edward's Grammar School, in that town, by the Town Council, owing to the non-formation of a street which the council had covenanted to make. The amount claimed was 17,000*l*. The matter was settled by compromise. A verdict was taken for 7,500*l*. and costs—1,500*l*. to be paid now, for damage done to this time, and the remaining 5,000*l*. in five years, if the street should not then be made. —*Morning Advertiser*.

#### DEMOLITION OF THE OLD BRIDGE AT ROCHESTER.

—The Royal Engineers have now destroyed nearly one-half of the bridge, and the remainder will be demolished as speedily as possible. The quantity of gunpowder used in the first of the two experiments was 300 lbs. weight, divided into six charges, and therewith a pier, 45 feet long, 21 feet deep, and 13 feet wide, was shivered to pieces, and the foundations loosened. The pier was built on piles in the river bed. The object was to shake the whole without tumbling it into the river, a result completely effected. A still larger portion of the bridge was demolished on Thursday in last week, consisting of the pier and abutment on which the large arch of the Strood side rested, and calculated to contain several thousand tons of masonry. The weight of powder used in the explosions was nearly 1,000 lbs. and was divided into the same number of charges as in the previous experiments. Since November, the sappers and miners have been engaged in sinking two shafts in this portion of the bridge, to the respective depths of 24 feet and 21 feet, one in the pier, and the other in the abutment. Captain H. Schaw conducted the work. At the base of each shaft sprang two galleries, each 9 feet in length, and in these were deposited the charges. The powder was contained in tin waterproof cases, enclosed in wooden boxes, 500 lbs. weight for the pier and arch, and 300 lbs. weight for the abutment. The charges in the arch were first exploded: the ground for some distance reverberated, as if from an earthquake, while the pier crumbled to pieces and disappeared. The charges in the galleries on the pier abutment were afterwards fired, and that portion of the bridge destroyed. The large arch of the bridge was blown into the river, and the abutment on the Strood side entirely removed, the sight of the massive stonework of the arch being blown high into the air being very grand.

COAL-BURNING LOCOMOTIVES.—In allusion to the interesting experiment in progress on the South-Western, the *Mining Journal* says,—"An invention of the greatest importance to railway companies generally has for some time past been successfully employed upon the London and South-Western railway, by which, calculating upon seventy engines being in steam daily, a saving of 25,000*l*. per annum will be effected. The honour of the invention is due to Mr. Joseph Beattie, the locomotive superintendent of the line." There are now seventeen locomotives upon his system in daily operation. Mr. Benjamin Fothergill, of Manchester, has severely tested the contrivance, and the average result obtained showed a difference in fuel of 4.01 lbs. in weight per mile in favour of the coal engine, and Mr. Fothergill considers the subject one of serious importance to railway companies. He considers, however, that these results are partly produced by Mr. Beattie's patented arrangement for heating the feed water before it is pumped into the boiler. Mr. Fothergill further states that the coal engines are fully capable of burning their own smoke; that they rapidly generate an abundance of steam; and that the burning of coal, according to Mr. Beattie's plan, is far more advantageous, as regards the durability of the fire-box and tubes, than coke could possibly be.

THE TOWER OF ST. MARY'S, TAUNTON.—We had put into type the report of the architects according to promise last week; but, having received a letter signed by the churchwardens, protesting against the publication of it before it has been submitted to the parish, we willingly postpone its insertion.

IRON v. GOLD.—M. de Carnal, the inspector of mines in Prussia, after a careful collection of statistical facts, has shown that in 1854 the total value of the produce of all the gold mines in the world was only 600 millions of francs (24,000,000*l*.) whereas the value of the iron produced in the same year was from 750 to 800 millions of francs (30,000,000*l*. to 32,000,000*l*.) —*Gatehead Observer*.

A NEW BOILER.—A public trial of Mr. M. Atkinson's new patent boiler, recently advertised in our columns, took place at the Grove Boiler Works, in the Borough, on Thursday in last week. The purpose for which the boiler exhibited was principally designed, is that of heating large quantities of air for warming and ventilating hospitals, churches, or other large buildings. The boiler is of the upright circular form, quite independent of brickwork, or chimney-stalk, and has no appearance of the ordinary furnace or stoking hole about it. The fuel, coal or coke, is dropped through an aperture in the dome, into a small cockle furnace, in the centre of the apparatus, and is entirely surrounded by the water space. This water space is also surron ded, horizontally, by an annular air chamber, and this is again surrounded by another water space. These two water spaces are connected by means of a series of 2-inch iron pipes or tubes, passing through the air chamber, and radiating outwards and upwards from the central furnace, near to the surface of which the lower ends of the tubes are situated, thereby conducing to rapidity of circulation.

THE ELECTRIC TELEGRAPH IN JAVA.—The electro-magnetic telegraph has been introduced into Java, and a line of wires completed between Batavia and Buitenzorg, the first intelligence by it having been transmitted to the Governor-General on the 22nd October in the space of four minutes. The line is to be immediately extended to Samarang and Sourabaya, and afterwards in different directions, such as to Anjer, Cheribon, Pekalongan, Rembang, and Banuwangie. The natives are said to be very much astonished and rather frightened at the invention, which they call "bichara angin" (wind speech), their Oriental and hyperbolic language falling thus somewhat short of the wonderful celerity and subtlety of the reality. It is rather surprising that they did not compare it to the lightning itself, whose swiftness is indicated in the Oriental language of Ouc who said, "As the lightning shineth from the east even unto the west, so shall the coming," &c. &c.

SMOKY CHIMNEYS.—I should feel obliged if you could, through your numerous correspondents, inform me of any means for the cure (or to produce an upward draught), of smoky chimneys, without the use of cowls. I have lately built a house, and all the chimneys smoke, to my great annoyance. Do you think the building in of an iron or earthenware flue, say from 6 to 7 inches in diameter, in connection with the register of grate, and letting it run some feet up the flue, would be of any service? —Z.

IRON PLATES FOR THE "GREAT EASTERN."—Mr. S. Beale, of Masbro', deputy-chairman of the Midland Railway Company, is now supplying Messrs. Scott Russell and Co. the builders of the monster ship, with immense iron plates, to be used in her construction. Some lately on their way from Mr. Beale's Parkgate Works, at Masbro', to Blackwall, have been expressly rolled for the bows of the "great ship," and vary in size from 2 to 24 tons, the largest plate being 27 feet long by 4 feet 3 inches wide, and 1½ inch thick. The plates, which have been planed, are said to be quite free from blisters and blemishes, and the edges perfect. The difficulty in the manufacture of plates of these dimensions is in having to deal with such a large mass of iron in a welding heat, and to pass it under the rolls the requisite number of times. As far as we know, says a Derby paper, these plates, in combined size and weight, have never been approached. The heat given off during the process of rolling from such an immense surface and mass of iron is so great as to prevent the workmen approaching within one or two yards of the plates without their clothes being set on fire or the skin burnt off their hands and faces! In the ordinary process of rolling iron, a plate weighing 9 cwt. is considered a very large one. The largest plate that had ever been rolled previous to those to which we allude was one exhibited at the Paris Exhibition, weighing 1 ton 6 cwt. and which elicited so many remarks. One of the plates was 5 feet wide, and 17 feet 10 inches long.

GAS IN DOWLS.—The gasworks at Dowlais are in operation. Improvements have been introduced in the purifying process. Several private houses now use gas, as do also Mr. G. T. Clarke, at Dowlais House, and the schools. The mains running through the back streets have enabled the local Board to put up many public lights in that hitherto darksome region. The designer and chief constructor of the works is Mr. John Vicary, gas engineer, of Exeter. The cost is under 5,000*l*.

ST. JOHN'S SCHOOLS, LEWISHAM.—The infant school, with residences adjoining, to the district of St. John's, Lewisham, was opened at the commencement of the year, which completes the side of the quadrangle, formed by a large and handsome group of schools. The room is large, 55 feet by 25 feet, with an open roof of stained deal, and has a cloister in the front, forming the entrance. This school has been built at the cost of Mr. G. Wheelhouse, aided by the grant from Government. The buildings are of Kentish stone, with Bath stone windows, from the designs of Mr. Peacock. The whole are sufficient to educate nearly 600 children, with residences for all the teachers.

FALL OF A CORNICE.—A large portion of a projecting stone cornice placed on the top of a new five-story building, on the east side of Ducie-bridge, says the *Manchester Courier*, fell down on Monday (last week). The brickwork is being done by Mr. Davidson, and the mason work by Mr. Batley. The heavy coping stones from the new building burst through the roof of another manufactory, and forced in the floor of a room, in which a young man stood, nearly suffocating him with the fallen rubbish: besides various bruises, he has suffered some injury to his back, but fatal consequences are not anticipated. The engineer, who was in the firing-up place, was also bruised, and cut about the head. The accident seems to have occurred from the absence of sufficient balance, in the placing of the cornice.



# The Builder.

VOL. XV.—No. 730.



THE Clock Tower of the new Palace, Westminster, is now approaching completion; the clock-faces are about to be fixed; and, when the four quarter bells are cast, "Big Ben" will be raised to his destination, and the clock will be brought from Mr. Dent's manufactory, at Millbank, where it has been going a long while, and will tell, far and wide, not merely "the time o'clock," but the time o'clock. Following up the extensive series of illustrations of Sir Charles Barry's great work which has already appeared in our pages, we have thought this the right moment to give a section of the upper part of the tower, and a view of a portion of it, the latter on a sufficiently large scale (8 feet to 1 inch), to show the details clearly.\*

The clock tower is situated at the north-west angle of the Palace, adjoining Westminster-bridge: three of its sides are disengaged from the ground to the top, and the fourth is connected with the buildings on the east side of New Palace-yard, which contain the residences of the officers of the House of Commons. The west side is not yet finished, as it is proposed that the new buildings, designed by the architect to enclose Palace-yard, and to complete the new palace on that side, should adjoin it. The walls of the tower, 3 feet 6 inches in thickness, are built of brick, with a facing of Anston stone. The clock-face is of cast-iron, filled in with a new description of white semi-opaque glass, supplied by Gardner, of the Strand. The dial, which is 22 feet 6 inches in diameter, will appear entirely opaque by day, it is hoped, but will, nevertheless, be available for illumination by night. The clock hands will be of copper, made as light as is consistent with the requisite strength to resist the action of the wind. The clock and bells, as every one now knows, have been constructed under the superintendence of Mr. E. B. Denison, Q.C. with whom Professor Airy was, only for a short time, associated. Let us, therefore, however, confine ourselves to the structure.

The roof of the tower is of cast-iron, galvanized, and the ornaments upon it are for the most part of the same material. The finial is of wrought copper, and is gilt, as are also the various crockets and other ornamental details. The whole weight of the metal roof is about 3300 tons. The lower part of the tower contains eleven stories of rooms, which are appropriated to various purposes, and include a prison for refractory members of the House of Commons, and others who may incur the Speaker's august displeasure. Those who are incarcerated will have the advantage, at any rate, of being able to count the hours of their captivity. The upper part of the tower is entirely devoted to the clock, bells, and lighting chamber, to which there is a separate staircase, enabling visitors to ascend to the lantern in the middle of the roof. The external width of the tower, which is square, is 35 feet (exclusive of buttresses), and its total height from the ground to the top of the finial is 310 feet. The foundations are formed of concrete, about 15 feet thick, the upper surface of which is 14 feet below the ground. The two lowest footings are formed of stone landings, 6 inches thick, the area of the lowest of which

is 1,846 feet, upon which it is calculated there is a pressure of rather more than  $4\frac{1}{2}$  tons per foot, exclusive of the weight of the roof, clock, and bells. The building was erected by Mr. Grissell, up to the corbel course under the clock story, and the portion from that level to the eaves of the roof by Mr. John Jay, the present contractor at the New Palace. The iron roof has been constructed by Mr. Jabez James, and the ornamental metal-work, partly by James and partly by Hardman of Birmingham. The gilding is principally by Mr. Crace, and the stone carving, like all the carving at the Palace, has been carried out under Mr. Thomas.

The great bell, of which we have before spoken, and which is nearly 16 tons in weight, is now hung temporarily at the foot of the tower, and will be hoisted to its place as soon as the four quarter-bells, and the necessary iron-work for fixing them, are prepared. All the bells will be raised by the shaft, up which the whole of the materials used in the tower have been lifted. Our readers will remember a cry raised some time since, that the architect had forgotten to provide for hoisting the bells, and that an external scaffold would consequently be required, at we know not what expense: we need hardly say how groundless was such a silly assertion, or how little such a state of affairs would have been in accordance with the evident care and forethought bestowed by the architect on every portion of his immense work, at this time so rapidly approaching completion.

Let us now give some particulars of the Clock, referring to Mr. Denison's own description of it, in the eighth edition of the "Encyclopædia Britannica." The four dials, as we have said, are to be 22 feet each in diameter, the largest, it is believed, in the world with a minute-hand: the larger dials on the Continent have only an hour-hand. The minute-hand, on account of its greater length, velocity, weight, friction, and the action of the wind upon it, requires at least twenty times as much force to drive it as the hour-hand. The effects of friction and wind with such hands as these offer difficulties in the way of the clock going even as well as an ordinary church clock; to overcome which, what is called remontoire work is used, part of the arrangement being for the purpose of giving a visible motion of the hands at every half-minute, when the point of the minute-hand will move nearly 7 inches.

The great wheel of the going part is 27 inches in diameter: the pendulum is 15 feet long, and weighs 680 lbs.; and the scape-wheel, which is driven by the musical-box spring on the third wheel, weighs about half an ounce. All the wheels, except the scape-wheel, are of cast iron, *i.e.* with the teeth cast, not cut, and all have five spokes. The barrel is 23 inches diameter, but only 14 inches long, as this part will not require a rope above  $\frac{1}{2}$  inch thick, and 55 turns in the  $8\frac{1}{2}$  days, for which that part is to be capable of going, though the striking parts go only  $7\frac{1}{2}$  days, so that in case of an accidental omission to wind it up on the proper day, the clock may not stop, but proclaim the neglect by silence. The second wheel is 12 inches in diameter, with a lantern pinion of 12, driven by 180 teeth on the great wheel: it has 120 teeth, and drives the pinion of the spring remontoire and the fly. The size of the hour-bell fixes the size of the striking parts; for that determines the weight of the hammer, which was proposed to be not less than 4 cwt. according to the usual proportion, with a rise of at least a foot, but must now be 12 cwt. The striking cams are eighteen in number, cast on a wheel of 37 inches in diameter.

There is to be a contrivance for stopping the winding when the clock is going to strike, as the winding of each of the striking parts will probably take two hours. The second wheels are a little more than 18 inches in diameter.

The second train wheel in each striking part drives a bevelled wheel, which drives the fly above the clock on a vertical arbor, as in the Exchange clock, in order to keep it out of the way of people winding or examining the clock. The great wheels all have 180 teeth: the second wheel of the hour-striking part has 105, and a pinion of 15, so that it turns two-thirds round at each blow, and the lifting cylinder upon its arbor has three segments cut out of it, and two of them are passed at each blow,—probably a novel arrangement, but thought the most convenient here with reference to the numbers of the teeth. The great wheels are 38 $\frac{1}{2}$  inches in diameter, and the whole mass of the barrel, great wheels, and cam wheels, weighs no less than 17 cwt. The whole of the wheels, except the fly wheels and winding pinions, lie on the top of the great frame, which is a trussed girder frame 19 inches deep (like the girders of the Crystal Palace), resting on two walls 11 feet apart, which come right up from the bottom of the tower. The frame will be 15 $\frac{1}{2}$  feet long: the striking pulleys will be about 2 $\frac{1}{2}$  feet in diameter, and pivotted in. Mr. Denison adds, with reference to the question of the strength of cast-iron teeth, that a segment of one of these great wheels was tried up to breaking point, and it bore a pressure of six tons, and then only broke from the pinion not bearing quite flat upon it.

The desirability of employing cast-iron wheels is questioned, as our readers know, by some who are well informed on the subject, but into this we do not propose to enter.\*

There are several matters in connection with the clock and bells as yet undetermined, and the position of the bells shown in the section may not be adhered to. For illuminating the dials, we understand electricity will probably be used. The art of illuminating dials is not yet in a quite settled state, and we shall be prepared to find that time will be needed to make the Westminster clock satisfactory in this respect. Some communications on the subject in a former volume of our journal may be usefully referred to. Dials illuminated from within in the ordinary manner always look very ill by day, when they are more seen and more wanted. As noted in the Encyclopædia article already referred to,—“Another objection to illuminating large dials from the inside is, that it makes it impossible to counterpoise the hands outside, unless, perhaps, the counterpoises could be made of glass. And if they are only counterpoised inside, there is no counterpoise at all to the force of the wind, which is then constantly tending to loosen them on the arbor, and that tendency is aggravated by the hand itself pressing on the arbor one way as it ascends, and the other as it descends; and if it once gets in the smallest degree loose, it becomes rapidly worse by the constant shaking. It is mentioned in Reid's book, that the minute-hand of St. Paul's Cathedral, which is above 8 feet long, used to fall over above a minute as it passed from the left to the right side of XII, before it was counterpoised outside.” In the conditions to be followed in the Westminster clock, it is expressly required that “the hands be counterpoised externally, for wind as well as weight”—a very necessary precaution.

Some few notes on the introduction and early employment of clocks, may prove interesting.

Various inventions for the measurement of time were in early use. Mention is made in the Bible of an instrument to show the passing hours. In the reign of Hezekiah, king of Judah, the king refers to the dial of Ahaz, his father, who died about 726 years before the Christian era. In the year of Rome 595 (167 years B.C.), a water clock was erected by

\* We have received a long letter from Mr. Loebly in reply to Mr. Denison's test, but cannot find space for it. The writer asserts, with reference to the "cut of the clapper," that 120 lbs. for the hammer, and 6 lbs. for the fall, is the greatest quantity of work the clock should be allowed to do.



Scipio, and, acting in all weathers, and at night as well as day, it was of the utmost utility and importance. Pacifious, archdeacon of Verona, who lived in the ninth century, is said to have been the inventor of clocks worked by wheels. It is by some, however, strongly contested that the credit of the invention is due to Boethius, who is said to have made the discovery about the year 510.

Mr. Bowle, in the "Archæologia," vol. vii. p. 218, remarks, "That clockmaking was brought to such a degree of perfection at the end of the thirteenth, or very early in the fourteenth century, that small house-clocks, nay, probably table-clocks, were then in use, seems apparent from what follows:—

*'Et puis fait sonner ses orloges,  
Par ses saules et par ses loges,  
A voz trop sabillément,  
De pardurable mouvement.'*  
*Roman de la Rose.*"

This passage indicates good and servicable workmanship, and the modern edition tells us that the poem was finished before 1305.

Although it appears to be a matter of uncertainty at what period large clocks, now so familiar to every one, began to supersede the sun and moon dials, tapers, and other measures of time, we find certain accounts of clocks mechanically constructed in England at a remote date. In 1288 a stout stone clock-tower was erected opposite to Westminster Hall, out of a fine of 500 marks imposed upon Ralph de Hengham, Chief Justice of the King's Bench, in the 16th year of Edward I. In this belfry tower, which was still standing in 1715, was a clock which struck the great bell called Tom of Westminster, so as to be heard by the people (judges as well as others) in the courts of law. This clock was kept in use until the time of Queen Elizabeth, when it was reconstructed. A clock was also put up in Canterbury cathedral, in 1292, at a cost of 30*l*. In 1363 three Dutchmen, who were *orlogiers*, obtained the protection of Edward III. Chaucer, the poet, who lived in the fourteenth century, when he speaks of a clock's crowing, says:—

*"Full sickerer was his crowing in his lope,  
Than is a clock or any abbey oyl go."*

In the reign of Queen Elizabeth the use of clocks had become familiar. Shakspeare refers to them in the following instances:—

"They'll tell the clock to any."—*Tempest*, act ii. sc. 1.

"'Tis to be clock, Jack."—*Merry Wives of Windsor*, act ii. sc. 3.

"The clock gives me my cue."—*Merry Wives of Windsor*, act iii. sc. 2.

"The clock upbraid me with."—*Twelfth Night*, act iii. sc. 1.

"To-morrow, four o'clock."—*Measure for Measure*, act iv. sc. 2.

"Like a German clock, still a repairing."—*Love's Labour's Lost*, act iii. sc. 1.

"Larks are ploughmen's clocks."—*Love's Labour's Lost*, act v. song.

"At the farthest by five of the clock."—*Merchant of Venice*, act ii. sc. 2.

"Ever run before the clock."—*Merchant of Venice*, act ii. sc. 6.

"There's no clock in the forest."—*As You Like It*, act iii. sc. 2.

"Of time as well as a clock."—*As You Like It*, act iii. sc. 2.

"And his honour, clock to itself, knew."—*All's Well that Ends Well*, act i. sc. 2.

"I love thee not a jar o' the clock behind."—*Winter's Tale*, act i. sc. 2.

"Wishing clocks more swift."—*Winter's Tale*, act i. sc. 2.

"The clock has stricken twelve."—*Comedy of Errors*, act i. sc. 2.

"Should be your clock and strike you."—*Comedy of Errors*, act i. sc. 2.

"And now the clock strikes one."—*Comedy of Errors*, act iv. sc. 2.

"By the clock 'tis day."—*Macbeth*, act ii. sc. 4.

"I have not heard the clock."—*Macbeth*, act ii. sc. 1.

"Time made me his numbering clock."—*Richard II.* act v. sc. 5.

"His Jack o' the clock."—*Richard II.* act v. sc. 5.

\* A rose, or with wheels.

"And clocks the tongues of bawds."—*First Part of Henry IV.* act i. sc. 2.

"Fought a long hour by Shrewsbury clock."—*First Part of Henry IV.* act v. sc. 4.

"About three of the clock."—*Second Part of Henry IV.* act i. sc. 2.

"The clocks do toll, and the third hour."—*Henry V.* act iv. Chorus.

"Like clocks, still to strike on."—*First Part of Henry VI.* act i. sc. 2.

"It's nine o'clock."—*Richard III.* act v. sc. 3.

"Count the clock; the clock hath."—*Julius Caesar*, act ii. sc. 1.

"Canst awake by four o' the clock."—*Cymbeline*, act ii. sc. 2.

"The sands that run i' the clock's behalf."—*Cymbeline*, act iii. sc. 2.

"To weep 'twixt clock and clock."—*Cymbeline*, act iii. sc. 4.

"Upon a time, unhappy was the clock."—*Cymbeline*, act v. sc. 5.

"The clock struck nine when."—*Romeo and Juliet*, act ii. sc. 5.

"Old time the clock-setter."—*King John*, act iii. sc. 1.

Shakspeare makes mention, in *Love's Labour's Lost*, of clocks of German manufacture, nor is he the only one of the contemporary dramatists who alludes to these productions. In Ben Jonson's *Silent Woman*, first acted in 1609, he says:—"She takes herself asunder still when she goes to bed into some twenty boxes, and about next day noon is put together again, like a great German clock, and so comes forth and rings a tedious larum to the whole house, and then is quiet again for an hour, but for her quarters."

At or near the year 1310, Dafydd ap Gwilym, the celebrated Welsh Ovid, abuses a clock for disturbing him during a delicious dream, and thus, as Captain, now Admiral Smyth translates in his elaborate memoir in the *Archæologia*, he perorates:—"Confusion to the black-faced clock by the side of the bank, that awoke me! May its head, its tongue, its pair of ropes, and its wheel moulder; likewise its weights of dullard balls, its orifices, its hammer, its ducks quacking, as if anticipating day, and its ever restless works! This turbulent clock clacks ridiculous sounds, like to a drunken cobbler, a cobbler, too, in appearance, cunning and false blindgut! the yelping of a dog in a pan echoed! the ceaseless chatter of a cloister! a gloomy mill grinding away the night!"

Froissart, in one of his earliest productions ("Hlorloge Amoureuse"), says:—

"The clock is, if considered truly,  
An instrument very fair and very notable,  
And it is also agreeable and profitable;  
For night and day it teaches us the hours,  
By the subtilty which it comprises,  
In the absence even of the sun;  
On which account we should the more prize its construction,  
Which the other instruments do not,  
However they may be made by art and by compass;  
Therefore I hold him for valiant and wise,  
Who first found the use of it,  
Which by his sense he began and made  
A thing so noble and of such great profit.

I will now talk of the state of the clock."

The poet then gives a long account of its complicated machinery.

Leland mentions a famous astronomical clock, made by Richard Wallingford, the son of a smith, who for his learning and ingenuity became Abbot of St. Albans in the reign of Richard II. This clock continued to go in Leland's time, who was born at the latter end of Henry VII.'s reign, and who speaks of a tradition, that this famous piece of mechanism was called Albion by the inventor.

Dante, who was born in 1265, and died in 1321, mentions an *orologio*, which struck the hour.

The great clock at Paris was put up in the year 1364, during the reign of Charles V. having been made by Henry de Wic, a German.

The oldest clock, of English manufacture, extant, is perhaps that which was made about A.D. 1340, by Peter Lightfoot, a monk of Glastonbury, for Adam de Sudbury, his abbot. The face of this machine is divided into twenty-four hours, in two divisions of twelve hours each, and it showed time, lunar and solar movements, and four knights on horseback, tilting in rapid

circumvolutions. After the dissolution of the abbey it was removed from Glastonbury to the Cathedral at Wells, and still remains in an old chapel in the north transept; but the works were so completely worn out, that about 1835 they were replaced by a new train, made by Messrs. Read and Thwaites, the long-established Clerkeawell firm. The curious original face or dial-plate, and the antique equestrian figures, were carefully adapted to new bodies, and are still in use.

We could give other accounts of old English clocks, but will on to the time when the increased skill of the workman enabled them to construct the machinery on such a small scale as to produce pocket clocks or watches. It is evident that, in order to construct them, a new moving power was required as a substitute for the weights which set in motion the wheelwork of the fixed clocks; it was necessary that this power should act of itself, independently of external forms and irrespective of position, and that the source of it should be compact. Such a power is found in the expansive force of a coiled spring; and it appears that it was not until the end of the fifteenth century that this improvement was effected, at which time clocks had become of general use in the houses of the wealthy.

"The best and most portable," says Admiral Smyth, to whose memoirs in the *Archæologia* we have been mainly indebted, "as well as the most general in shape, is the celebrated clock belonging to the Queen, which is the actual one presented to the fair, accomplished, and unfortunate Anne Boleyn on their marriage in November 1532. Her Majesty graciously permitted me to examine this interesting horological relic at Windsor Castle, with leave to handle the works. It is now placed on an ornamental bracket at the foot of the staircase leading to the Queen's closet, generally known as the 'Panel-room,' where it will probably show the taste of the sixteenth century for many ages. On taking it down from the bracket with my friend Mr. John Hulbert Glover, her Majesty's zealous librarian, I regretted to find that this valuable machine had been 'done up,' as the tampering with ingenious works is often too truly termed. The interior wheels are now all of brass, and the whole train is evidently of comparatively recent date; while, from the style of the mechanism, a contrate wheel being used to keep the arbors of the others horizontal, and the adaptation for a pendulum, an inference may be gathered that the 'doing up' took place about the year 1680."

"It is not only her Majesty's clock which has thus been altered, but almost all the specimens I have seen of the reigns of Elizabeth, James I. and Charles I. have had the balance removed and the pendulum applied, and the innovation is so meritorious that even an antiquary must excuse it."

In the 3rd of James I. a watch was found upon Guy Fawkes which he and Percy had bought the day before, "to try conclusions for the long and short burning of the touchwood with which he had prepared to give fire to the train of powder."

In 1631 Charles I. incorporated the clock-makers, and the charter prohibits clocks, watches, and alarums from being imported. About the middle of the seventeenth century, Huygens made his great improvement in clock-work, which produced many others from our own countrymen, the latest of which was the introduction of repeating watches in the time of Charles II. This king was very curious with regard to these time-measurers, and it is said that watchmakers (particularly East), used to attend whilst he was playing at the Mall, a watch being often the stake.

Charles V. of France was so much pleased with time-measurers, that he used to sit after his dinner with several of them on the table, his bottle being in the centre; and when he retired to the monastery of St. Just, he continued to amuse himself by keeping them in order, which is said to have produced a reflection from him on the absurdity of his attempt to regulate the motions of the different powers of Europe.

And so, having ticked our time, we wind up and,—strike.



## THE UNEMPLOYED WORKMEN.

HOWEVER futile the advice may be which has been tendered, by their so-called friends, to the large body of operatives connected with the building trades now unfortunately out of employ, and however dangerous the doctrine taught by some of their leaders, expressions of sympathy, and earnest endeavours to assist them in their need, should not be withheld. Builders suffered fearfully during the war, especially the class engaged in the erection of houses for sale, and have been suffering since. The *Gazette*, for many months, showed too clearly what was going on; and even at the present time there are no buyers, houses remain on hand, and the interest of money borrowed, together with the ground-rent and law charges, is in some quarters swallowing them up. As a matter of course, workmen have been discharged, as well because of this as of the winter, which necessarily stops building operations, and thus we find a large number of deserving artisans out of employ, and requiring aid. Whether or not the number is so large as has been suspected, we are unable to say; we sincerely hope not. The statements as to the number of persons who attended the second meeting in Smithfield, were certainly much exaggerated. Some of the newspapers called it 16,000; but looking with our own eyes, we were unable at any time while the chairman was speaking to count a thousand. Let us hope, therefore, that the numbers of those who are in distress may be less than has been feared. Taking the best view of it, however, they are unquestionably very numerous, and something should be done to aid them. Emigration has been urged as the most effectual step, and would doubtless be advantageous to many. In the meantime, however, they need assistance, and we should be very glad to see a respectable committee organized to receive subscriptions, and devise some means of giving useful help.

We have received several letters in reply to one signed "T. L. D." in our last, and two or three taking nearly the same view as the writer of it. Of the former, we have printed one of the earliest that reached us, and next week will give attention to others.

IN reference to the want of employment so loudly complained of by many mechanics in the building trade, and in answer to the letter which you publish from "An Architect and Surveyor," in which he exposes the fallacy of applying to the unions for relief, and attributes their present distress principally to their own acts, permit me to say that very many, probably a large majority in the trade to which I belong, whilst agreeing with your correspondent on the absurd and degrading nature of such a course, cannot help feeling that his remarks on the subject of wages and the conduct of trade societies are opposed to truth. He asserts that when wages were lower there was more constant employment than now, which he attributes to the mischievous interference of trade unions, which raise the price of labour to such an extent that employers can only realise a profit on the material, and not on the labour. In the first place, there are other causes operating to produce such an effect, if it exists at all. With regard to trade societies forcing up wages, there are not more than one-fifth of the men in my trade that belong to them. Nor is it a condition of membership that a man shall receive the highest rate of wages. The employers themselves make a standard rate, by refusing to pay a superior workman more than an ordinary one. As for the logic which says an employer can only get profit on the material, and not on the labour, it needs nothing to prove its absurdity. Were I to compare the remuneration your correspondent receives for his labour with mine, he would probably tell me that the outlay for his education was greater than mine; that it required more study and talent of a higher order to fit him for his profession than are requisite for mine, and, as a necessary consequence, he is justly entitled to a higher remuneration. I grant he is; and by the same rule I maintain that seven years devoted to acquire a business, with a premium paid into the bargain; an expensive lot of tools to provide; subject to constant wear, and loss by fire or robbery; together with the uncertainty of employment,—are sufficient reasons why we should have more pay than policemen. It really is too bad that the working classes should be continually told they receive good wages by those who never knew want, nor how far a workman's wages procure for himself and family the means of support, after contending with want of

employment, sickness, births, or deaths in his family. Were they to try the experiment with all the economy they recommend to us, I think they would form a different opinion of what were high wages. Why, the very fact of so many being destitute proves that our wages are insufficient to meet the requirements of life under all circumstances. They preach economy, but our scale of living is already too low. With low wages, a married man is in a measure compelled to allow his wife to compete with the single women in needle and other work, and again producing low wages and starvation to those who depend upon it for a living.

It is the full belief of your wish to do justice to both employer and the employed that causes me to trouble you with this; and I beg as a favour, should the length or style of this letter preclude insertion in your columns, you will give the substance, as it is in accordance with the opinions of many who, like myself, think a man who is both able and willing to devote his time to labour, should procure the means of existence without the charity of any one, public or private.

A JOURNEYMAN CARPENTER.

## A FEW WORDS TO BUILDING OPERATIVES ON THE PRESENT DEPRESSION.

SIR,—Observing, in your last week's publication, an article on the above subject, from a correspondent who calls himself an architect, I submit the following remarks:—You are no doubt aware that working men regard with suspicion anything, spoken or written by those who move in a higher sphere of life, that has a tendency to throw discredit on their conduct. To state in plain terms who I am, and my position in life, the following will suffice. I have wrought as a mason upwards of thirty years, in ten or twelve different counties in England and Wales. I have received as little as 2s. 6d. per day, and as much as 6s. I have lost as much as two, and sometimes three months' labour in winter, for want of employment; in summer I have made as much as eight, and sometimes even nine days' wages during the week. I have, during the thirty years, been married twice, and each wife has borne me six children. The first family has been trained to get their own living; the second are progressing towards the same desirable end. During the above-mentioned period, I have not obtained anything higher than that of a journeyman; neither have I received from any other source anything of consequence to supply my own and the wants of my family. As a double share of domestic duties has fallen to my lot, and as I am only a working man among working men, let them heed the following remarks.

The building trade has always been a fluctuating trade, and always will remain so, owing to circumstances which are very difficult to control. The present depression of trade is owing chiefly to the high price of provisions, and the large amount of war taxes which have yet to be removed. For instance, a very large number of houses in and around the suburbs of London, are finished, and fit for occupation; but the supply is far greater than the demand, not that London has been depopulated—population still increases, but the cause lies here. The war has enhanced the price of provisions—these must be obtained at every other sacrifice. The working man, who formerly had two or three comfortable rooms, at the present time makes shift with one. Many of the middle class give up their houses, and take apartments; thus, in thousands of instances where a house is only just convenient for one family, it is overcrowded with five or six. This, then, is the cause that house property has become such a drug in the market. It must be evident, if the builder could borrow money at 3, or even 2 per cent. and men would consent to work for half wages, if the builder had no reasonable prospect to let or sell those houses when finished, he himself would be in the sure road to ruin.

Your correspondent of last week, makes some severe remarks on the conduct of trades' unions. I am as averse to the principle on which those trades' unions are conducted as your correspondent. But let me state, once for all, clearly and distinctly, the cause of these trades' unions attaining such a formidable and threatening aspect as they do at present. Many of those who contribute their pence and shillings to support these unions, do it not willingly, but grudgingly, not as a matter of choice, but of necessity. For instance, a man not belonging to the trades' union applies to a master for employment: if the master employs him, and he refuses to join the society, a deputation is sent by the union, to state that the society men refuse to work with him; or, in other words, they demand the master to discharge him: the master, to avoid a temporary inconvenience, discharges him. We hear much in the present day of the tyranny of capitalists and employers: those who live in glass houses should not throw stones. I speak,

or rather write, impartially. As an individual I have suffered more from the tyranny of trades' unions than I have from employers.

When I first came to London I hired a small furnished room on the fifth story of a ten-roomed house, for which I paid 5s. per week. A ten-roomed house, thought I to myself, and each room worth 5s. per week,—130l. per year. I soon shifted, and laid out a few pounds in furniture, and hired an unfurnished room at 4s. per week in an eight-roomed house. An eight-roomed house, each room worth 1s. per week,—too much 83l. per year,—too much, I thought. I soon left this, and engaged an eight-roomed house on my own account at 42l. per year; let off six rooms at an average of 3s. 6d. per week each, which enabled me to live rent-free. But 42l. per year for a house which cost about 350l.—was, at any rate, 10 per cent. for the outlay,—too much, thought I. By dint of perseverance and strict economy the united savings of myself and wife, in the course of fourteen or fifteen years, amounted to the sum of 120l. I formed a resolution. I will borrow 200l., and add to my savings, and build a house for myself. A good eight-roomed house was soon built; ground rent, 5l. per year, and per-centage on 200l. cost me 15l. per annum. I could, in these circumstances, let off as much as when I rented a house at 42l. per year. I have made the above statement simply to show my fellow-men how they might better their condition. I think I am sufficiently skilled in reasoning to show them one cause of the present distress of many. Instance a case: there are many innkeepers sufficiently kind and obliging to trust men for the liquors they are disposed to take upon credit during the week. A very moderate week's account in this way often amounts to 7s. or 8s. I have observed that most men are sufficiently honest to pay of a Saturday night, that those kind favours of the innkeeper may be continued. The landlord "stands his pot" for favours received: this calls for another, and another, until the man, who has laboured hard during the week for his scanty earnings, forgets he has a wife and children waiting with eager expectation for the support they stand so much in need of.

The result of such conduct is simply this. On the Sunday morning hundreds are strutting to market in the purples of Marsh-gate and other similar localities.

The gin shops, the pledge offices, and the loan offices, all bear witness and give ocular demonstration which way the poor man's money goes.

To those working men who can take advice I give it:—

First. Observe, when you can obtain employment—avoid Saint Mauday. Work the whole six days, if possible.

Secondly. Don't spend your money before you get it,—or, in other words, don't take anything on credit if you can avoid it. The man who pays ready money for everything will generally take care of his pocket.

Thirdly. Carry home the whole of your week's wages, and provide on Saturday night for the comforts and necessities of your families.

In conclusion, a few words to those who consider themselves the guardians of the workman's right. You have shown a vast amount of zeal in forming trades' unions,—in levying contributions to support strikes, sometimes of a frivolous nature. Here, then, is a subject at which you may employ your zeal to good account: thousands are out of employment owing to the depression of trade: thousands of innocent children are suffering the pangs of hunger owing to this depression: you have societies already organized, resources at command, in readiness to combat with any employer who chooses to infringe upon your alleged rights. Cannot those resources be brought to bear upon the present existing emergency? A work of charity,—a work of mercy presents itself to your notice, in which you are deeply interested. Such a step on your part, I am persuaded, would meet with public approval, and, in addition, public co-operation.

A STONEMASON.

## "GOTHIC AND CLASSIC."

I SHOULD not have troubled you with any remarks upon this vexed question, had not the letter, which appeared in your impression of the 10th, been likely, from its type and position, to carry with it more than its due weight with the mass of your non-professional readers. Those who are acquainted with the style it condemns, will not be in the least affected by it.

The first part of the letter is either a misrepresentation or misunderstanding of facts; for the object which Mr. Scott, and all who sympathise with him, have in view is—if I understand it rightly—to recover and establish certain lost principles—the alphabet, as it were, of English "Pointed" architecture; in other words,



to restore that train of *thought* which, by patience and perseverance, produced such structures as the nave of Westminster, the chapter-house of Salisbury, the abbey at Tintern, the spire of Louth, the north porch of Redcliff, &c. And I am truly surprised to find that any one should infer from the remarks in the *Builder*, of November 29, that the writer was anxious to revive or restore the "obsolete" fashions of a less civilised age, simply because they happened to be clothed in artistic forms. It is neither "fire-dog," nor "hoodwinked windows," nor "open ceilings," nor "buttresses," nor "pinnacles"—no, nor even all these things combined, which the architects of the movement desire to see revived; but it is that *propriety* which the Anglo-Roman, Saxon, and Norman all observed—conformation to the *laws and local characteristics of nature*, with the addition of the spirit of Christianity infused. But your correspondent would have us believe that Gothic architecture consists of "nought but pinnacle and gable, and buttress, and hoodwinked windows," that its domestic "essentials" are "casements, admitting the external air in all seasons; fire-places so large, that all the heat generated upon the comfortless fire-dogs, is immediately transmitted to the nether heaven, open ceilings, and stained joists, giving a general cold church-like air to them, very depressing and unpleasant." Now, as there are, I dare say, some amongst your numerous readers who would be led almost to believe this summary, from the reflections which precede it on "useless papistical piscines," "disease-engendering sedilia," &c. I think it would be wrong to let even such people remain in the belief, that Mr. Goodchild's *Gothic* is the Gothic of what he is pleased to call the "one-branch hands." It was to be hoped that the question,—What is Gothic architecture? had been decided, for one and all, but the communication in the *Builder*, of January 10th, 1857, containing direct and indirect censures upon its lack of "appropriateness" and beauty, shows that this hope was vain. Every one who knows anything at all of Gothic architecture, is aware that its very first element, without which it cannot exist, is "appropriateness" or *utility*. It must not be forgotten, however, that there are appropriate and useful features in the world which have no direct bearing upon our physical wants, and it is this dual appropriateness, *i.e.* the material utility, coupled with the expression of the religious or moral feeling, which constitutes architecture. This "expression" is only another word for symbolism; and, from the Druidical temple downwards, it must and will exist. I ask, then, what shall the works of the latter half of the nineteenth century be symbolical of?—our Christian faith or our scepticism—our unity or our sectarianism—our higher or our lower nature? One of the great errors of the day is the supposition that Gothic or Pointed architecture must be *medieval*, and that it is made up of "buttresses," "fire-dogs," "piscinas," and the like; things which have no more to do with this style than the toga, the tripod, or column flutings, have to do with the Classic. I fully agree with Mr. Goodchild, that the great mass of buildings "erected in the present day," which go by the name of Gothic, are failures; but the style *per se* would not be affected one iota if we went on failing for a century. What we really want is more *self-reliance*, more *thought*, more spirit-life, more faith, more unity, more love, and then both the Classic and Gothic of history may sink to their proper level, as food for the antiquarian and archaeologist; for we ourselves should have a land-mark in the world's history, which would vie with either in originality, propriety, or beauty.

Culmore, co. Donegal. E. W. GODWIN.

LECTURE ON COLOUR AND ITS LAWS.—A lecture on this subject was delivered last week at Ipswich, before the members of the Mechanics' Institution there, by Mr. George Taylor, of that town. The lecturer successively touched upon the theory of light, the theory of colour, the properties of coloured rays, and the influence of coloured light upon vegetable and animal life, mentioning under the latter head the results of the numerous, interesting, and practically useful experiments made upon plants growing under coloured media.

#### ATHENS.\*

The connection of Athens with Peiræus and Munychia was effected during the administration of Pericles, by the erection of the two long walls (*ῥά μακρὰ τεῖχη*), each about four miles in length, and 550 feet apart; and with Phaleron, by the Phaleric wall (*τὸ φηληϊκὸν τεῖχος*), running due south. The north long wall and the Phaleric were built first, and after the erection of the intermediate long wall the Phaleric was suffered to go to decay, as the Lacedæmonians are only described as destroying *two* long walls; and when, after the battle of Cnidus, Conon rebuilt them, he probably used the materials of the Phaleric in their construction. These walls, ruinous at the time of the invasion of Philip, were destroyed by Sulla, and never afterwards rebuilt, their ruins being noticed by Pausanias, who flourished about A.D. 200. Their ruins may still be traced.

The most recent discovery of importance connected with the Acropolis is that of M. Béné, who, not satisfied with the old entrance on the south side of the west outworks, has brought to light an ancient gateway, about 6 feet wide and 12 feet high, surmounted by a Doric entablature, between two flanking towers, at the west end of the Acropolis, exactly in front of the Propylææ. The surface of the rock appears to have been divided into platforms, communicating with one another by steps; and a recent distinguished author has called attention to the want of parallelism amongst the several buildings upon its summit.

The Pelagic fortifications of the Acropolis, which defied the Spartans, having afterwards been partially dismantled, could not resist the Persians, who destroyed all the buildings within the citadel. The foundations of the ancient walls doubtless remained, but the walls afterwards built upon them retained but the name of the mighty founders of the Athenian race. The restoration of the north wall, called the Pelagic, is ascribed to Themistocles; and imbedded in its masonry are portions of marble columns, and a complete Doric entablature of limestone, without doubt the remains of the earlier Parthenon.

We pause a moment to contemplate in thought the numerous remains of Pelagic or Cyclopean construction scattered over the states of Greece, and by the same giant race implanted in the distant regions of Etruria, as shown at Norba, Cora, Signia, Alatrium, Fiesole, Arezzo, and other places—imperishable records of the Volsci, the Marsi, the Hernici, the Sabini, and other tribes.

The impressions of Pausanias, sixteen centuries ago, were probably much the same as those of the tourist of our own day; for the ruins remain much as they were. In solitary grandeur they attest the power of those who placed them there.

"*Bezus vacuus habitator in ævæ  
Moustrat, Cyclopus ductus audioribus arces.*"

"Their handwriting is yet upon their walls!"

A restless and various people, overrunning the whole of Greece, found northwards in Dacia, Illyria, and the country of the Gæta, colonising the coasts of Ionia, and long the master race of the fairest lands of Italy, they have passed away amid the revolutions of the elder earth, their ancestry and their descendants alike unknown;—yet not indeed the last, if conclusions are rightly drawn: if the primitive population of Greece—themselves Greek—founding the language, and kindred with the blood of the later and more illustrious Hellenes—they still made the great bulk of the people in the various states, and through their most dazzling age, enslaved in Læconia—but free in Athens—it was their posterity that fought the Mede at Marathon, and Plataea, whom Miltiades led,—for whom Solon legislated,—for whom Plato thought,—whom Demosthenes harangued."

The Cadmoians, says Herodotus, were famed for their architecture, which they introduced into Greece, and there erected lofty structures dedicated to the sun, under the name of Pelorion, whence the term Pelorion was given to anything stupendous; and as by their works they judged the builders, so did they represent the Cyclopes as giants, and pursuing the same

latitude of reasoning, termed anything vast Cyclopean.

"*Quicquid magnitudine sua nobile est,  
Cyclopus manu dicitur fabricatum.*"

Among the most celebrated ruins of this description, rank Tiryns and Mycenæ, in the plain of Argos, whose remains are composed of rough quadrangular blocks of stone, the interstices being filled in with small stones. Of Tiryns, only the walls of the Acropolis remain, which Dodwell considers must have been full 60 feet in height, judging from the fallen stones about them. Of Mycenæ, the capital of Agamemnon, the Gate of the Lions and the Treasury of Atreus excite intense interest. The lintel to the doorway of the latter is composed of stones in size only equalled by the masses of Egypt or Balbec. The circular chamber, 50 feet in diameter, and about 60 feet high, formed of parallel courses of breccia, averaging 2 feet in height, neatly jointed without mortar, and converging to the centre, not by radiating beds, but by horizontal courses, projecting before each other as they rose, and then smoothed by the cutting off of the lower angle, instead of typifying the future arch as some have thought, only goes to prove the principle was not even hinted at by these rude architects. The Treasury of Minyas, at Orochomenos, of which but ruins remain, the vault having fallen in, was, doubtless, of far greater size, and of marble. Pausanias fully describes it, whilst he only alludes to that of Mycenæ. It is supposed that all the subterranean chambers of Greece, Italy, and Sicily, were similarly constructed. Of the four kinds of masonry into which the Cyclopean remains are divided, the first has its type at Tiryns and Mycenæ; the second where the stones are irregular polygons, fitting nearly into each other, as at Julius and Delphi; the third, wherein the stones are laid in regular courses, but of unequal lengths, as in Boeotia, Phocis, and Argolis; and the fourth wherein the stones are always rectangular, whereof examples exist in Attica.

Sir William Gell asserts the second method only to be Pelagic, and to have been practised several hundred years before the Cyclopean manner. Thus, he says, the Pelasgi built Lycosura 1800 years B.C. and Argos even 56 years earlier; and that Tiryns was fortified by foreign artists from Lycia, called Cyclopes, above 400 years later. But our limits will not allow us to linger longer upon this most interesting subject. We will only refer the reader to Dodwell, Clarke, Hamilton, and other investigators, and return to Athens.

The remaining places and monuments of the lower town, whose identity is not disputed, are the Areiopagus (*Ἄρειος Πάγος*), or hill of Ares; the Pnyx (*Πνύξ*), or place of assembly; the Hill of the Nymphs; and the hill called the Museum (*τὸ Μουσεῖον*), after the poet Musæus, who retired thither for contemplation; the Dionysiac Theatre, and the Odeum of Herodes; the cave of Apollo and Pan, with the fountain Clepsydra, and the cave of Aglauros; the temples of Theseus and of Zeus Olympius; the Horologium of Andronicus Cyrrhestes; the choral monument of Lysicrates; the Stadium; the gateway and aqueduct of Hadrian; and the Agora and Cerameicus.

The Council of Areiopagus sat as judges in the open air, on the south-east summit of the rock. Sixteen stone steps and a rude bench of stones mark the spot where they held their meetings. At the south-east angle of the rock is the chasm which formed the temple or sanctuary of the Eumenides. What structure there may have been in front of it has disappeared.

The identity of the Pnyx was first established by Chandler, Wheler and Stuart having both failed in their appropriation of the remains. It may be loosely described as a semicircular area, on a sloping ground, the chord of which is the highest point, the centre of the arc the lowest; the latter being bounded by a wall of huge polygonal blocks. The chord is marked by a line of vertical rock, hewn flat like a wall, in the centre of which, and projecting from it, is the Bema (*βῆμα*), or pulpit, often called the stone (*ὁ λίθος*), from which the orators addressed the multitude in the area, which, containing 12,000 square yards, could accommodate the whole of the Athenian citizens. Eloquence

\* See pp. 2, 31, and.



was innate with the Athenians, and oratory flourished at Athens only. The fine organization of this remarkable people was such, that an ungraceful or undressed style was repugnant to their sense. Cicero bears witness to this exquisite susceptibility when he says—"Sincerum fuit sic eorum iudicium at nihil possent nisi incurrptum audire atque elegans." Statesmen, generals, poets, all were orators, though but few of their orations have reached us. Of the remains that are extant, those of Lysias, Isocrates, Isæus, Demosthenes, Æschines, Demades, and Hyperides, rank highest; Antiphon, Antisthenes, Andocides, and others, take a secondary rank.

The Museum Hill was south-west of the Acropolis, and of not very inferior elevation. It contains nothing remarkable, if we except the remains of the Roman monument to Philopappus (for the description of which see Leake and Stuart), and the traces of numerous houses. Of the poet Museum, supposed to have been buried on the hill that bears his name, none of the ascribed writings remain; but Diogenes Laertius has preserved to us a principle of his philosophy in the words—*Εἰς ἑνός τα πάντα γινώσκει, καὶ εἰς πάντων ἀναλίσκει*.

Beneath the south wall of the Acropolis lay the Theatre of Dionysus, commenced B.C. 500; being the first theatre built of stone in Athens, all previous ones having been of wood, and temporarily erected for the Dionysiac festival; and it was within such that the first drama of Æschylus was performed in the same year. After the discarding of these wooden moveable theatres, stone ones were erected in all parts of Greece and Asia Minor; Athens at the same time remaining the centre of the Greek drama and birthplace of Greek dramatic literature. Many of these theatres, although all of them constructed after the Athenian type, were not devoted to the drama, but to various public purposes; and even at Athens, the Theatre called *Λυρικόν*, and that of Herodes (*τῆς Ῥηϊῶν Ἰστάρων*), were used for the declamations of the Sophists. The prodigious size of some of these buildings, as at Argos, Ephesus, and Epidaurus, is attested by the descriptions of Clarke, Dodwell, Leake, and others. They were usually erected upon a declivity, the part for the audience being hewn out of the rock, these called *κοῖλον, cavea*. The seats for the spectators, arranged in concentric circles, and occupying about five-eighths of the circumference; the broad passages (*διαίωματα*), *præcinctiones*, at intervals between these seats, and parallel with them; the stairs, at intervals, radiating from the centre, and communicating between the upper and lower seats, but breaking joint at each *præcinctio*, by which the seats were divided into plots resembling on plan the section of a truncated cone, hence called *κυκλίδες, cunei*; the covered gallery forming the finish to the building, and following the semicircle of the theatre; the orchestra (*ὀρχήστρα*), the circular area within the innermost seat, round which the chorus performed their dances, and in the centre of which stood the *θύμβη*, or altar of Dionysus; the stage (*λόγιον*), raised above the orchestra, and terminated by the *σκηνὴ*, and, on each side, the *παράσκηνοι*: these formed the principal features of the Greek theatre as gathered from the evidence of Vitruvius, who likewise clearly marks the distinctions between the Greek and Roman theatres. "But these," says Donaldson, "and other statements of the ancients, have been somewhat twisted out of shape by architects unacquainted with the ancient dramatists; and philologists, in their turn, have blundered sadly for want of a knowledge of architecture." The whole body of the theatre and orchestra was open to the sky, and the performances took place in the daytime. The altar of Bacchus, as typical of the worship upon which the Greek drama was founded, occupied the centre of the whole building.

It is remarkable, that the theatrical representations of Greece retained to the last their original character; and even in the days of Sophocles those representations formed part of a religious festival: the theatre was sacred to Bacchus, and his worship as much regarded as the amusement of the people. The origin of the chorus belongs to the Dorians, who, adding appropriate dances to their hymns, thus insti-

tuted that important adjunct of the drama; and the Doric dialect is preserved in the lyric poetry of the other Greek tribes. Their dances in honour of Apollo, god of war and music, were either gymnastic or mimetic: the former, when intended merely as an exercise; the latter, when corresponding by gesture with the meaning of the chorus. Of the former class was the Pyrrhic, a dance peculiarly Spartan, accompanied by the flute, and the gymnædian: the latter was of the class mimetic; and in these three dances we may trace the origin of the lyric element in the Attic drama. How Dionysus came to be the object of a worship formerly paid to Apollo was doubtless this: the Dorians worshipped besides Apollo a female form of the same deity. In the elementary worship of the Pelasgi and Achæians there were also two leading divinities, the sun and the moon, worshipped as Helios and Selene; and by the Pelasgic inhabitants of Italy as Janus or Dianus, and Diana. In Greece, however, the original names of these deities fell into disuse at an early period, and Bacchus or Dionysus became the adopted name for the sun-god, and Demeter for the goddess of the moon. Connected in their attributes with the old elementary worship of the Pelasgi, they became blended with the gods of the country. Dionysus was the Wine-god, Demeter the Earth, whence sprang the vine, and a natural transition invested him with the attributes of the sun that caused its growth, and translated her as his sister to the moon,—thus both becoming types of the celestial bodies that ruled the harvest and the vintage. As gods of the earth, attendant deities were assigned them; thus, to Bacchus were given the Sileni, to Diana, the Naiades. To these were added satyrs (from *σαῦρος*, a goat), beings half man, half goat; deified representatives of the old worshippers, who probably assumed for their costume the skin of the animal they had sacrificed to the God. Thus did the religion of Bacchus become incorporated with that of Apollo, and become the accepted creed of the Dorians.

The signification of the word Dionysus (the god of Nyxos) proves that some word of which Δι or Δις was the root, was the generic name of the deity. The etymology of the dethyramb is a doubtful point; but it consisted of a chorus of fifty men or boys, who danced round a blazing altar to the music of the flute, and was thence termed the Cyclic Chorus; its subject, the birth and misfortunes of Bacchus.

But the first step towards the Drama in its ultimate development was extemporaneous narrative. Habited in goat-skin, like a satyr, the reciter debated upon the adventures of Bacchus. Hence arose the term Tragedy—or the Goat-ode, from *τραγός, hyrcus*,—*ων, cantus*,—even as Comedy, or the Hevel-song, drew its parentage from the *κωμος*.

Thus arose that tragedy which, shadowed forth by Thespis and further developed by Chærilus, Phrynicus, and Pratinas, found its great exponents in Æschylus, Sophocles, and Euripides. As regards Comedy, from the first exhibition of Epicharmus to the last of Posidippus—a period of 250 years—one hundred and four authors are enumerated, of the works of a few of whom we possess but fragments only—the only complete plays that have reached us being the eleven of Aristophanes.

Two rows of seats at the top of the theatre of Dionysus are now visible, the rest being hidden by the accumulation of soil. The accurate dimensions of the building cannot now be ascertained: the upper part is evident, but its lower extremity is not visible; but it is supposed to have been large enough to contain the general mass of the Athenian citizens; and for beauty, Dicaearchus asserts it to have been the most beautiful theatre in the habitable earth (*ὡς ἐν τῶν ἐν τῇ οἰκουμένῃ καλλίστων θέατρων, ἀξιώλογον, μέγα καὶ θαυμαστόν*).

The subject of scenery, costume, machinery, &c. we could not allude to here; and the discussion of the Greek drama itself is and must ever remain the province of profound scholarship. Nor would it be possible to enter upon the differences presented by many theatres still extant from the general description we have loosely sketched. Whether women were present at theatrical performances has been a matter of much discussion, as there is scarcely any

passage in ancient writers that alludes to it; but Jacobs and Passou have placed it almost beyond a doubt that they were present at tragedy, but not comedy. If so, their seats were separated from those of the men.

The Odeum (*ὠδεῖον*) was a building allied to a theatre in form, and sometimes called *θεάτρον*, but was much smaller in size, and roofed over, and was first invented during the flourishing period of Greek art in the fifth century before Christ, for musical contests. Vitruvius makes a passing allusion to the Odeum of Pericles. It stood at the foot of the south-east part of the Acropolis, and was burnt by Sulla B.C. 85. No ruins remain of it. The most magnificent edifice of the kind in the whole empire was that built by Herodes Atticus, at the western extremity of the Acropolis, beneath the south wall. Its greatest diameter was 245 feet, and it is supposed to have furnished accommodation for 8,000 persons. According to Pausanias, it surpassed all other odea in Greece, as well in dimensions as in other respects; and its roof of cedar wood was particularly admired. There are still considerable remains of this building, but, says Mure, "in spite of their extent, good preservation, and the massive materials of which they are composed, they have a poor appearance, owing to the defects of the Roman style of architecture, especially of the rows of small and apparently useless arches with which the more solid portions of the masonry are perforated, and the consequent number of insignificant parts into which it is thus subdivided." Stuart's greatest mistake perhaps was assigning the remains of this comparatively small Roman building to the great Dionysiac theatre.

The other principal odea were those of Corinth Patra, Smyrna, Tralles, Mycenæ, and Nicopolis. There are also ruins at Laodicea, Ephesus, and other places in Asia Minor.

The Cave of Apollo and Pan lay at the north-western angle of the Acropolis, or, as described by Herodotus as situated below the Acropolis, and by Pausanias as a little below the Propylæa. The worship of Apollo in this cave was probably of great antiquity. The worship of Pan in this cave was not introduced until after the battle of Marathon, in consequence of the services he rendered the Athenians upon that occasion. Miltiades dedicated his statue, and Simonides wrote the inscription to it. A statue of Pan, found in a garden near the cave, and now in the public library at Cambridge, may possibly be the identical statue dedicated by Miltiades. The cave measures 18 feet by 15 feet, and is 30 feet in height. The fountain mentioned by Pausanias was called Clepsydra (*κλεψύδρα*); more anciently *Εμπίδω*. It derived its name Clepsydra from its being supposed to have had a subterraneous communication with the harbour of Phalerum.

The Cave of Aglauros in the *μαρκάρι*, or Long-rocks, said to be the point whence Aglauros and Herse threw themselves. Eastward of the Cave of Pan are two caves, one of which contains thirteen niches, proving it to have been a consecrated spot, and one of these was probably the Aglaurium. Leake assigns one of these caves to Aglauros, and the other to Herse. The Athenian Ephebi, on receiving their first suit of armour, were accustomed to take an oath in the Aglaurium that they would defend their country to the last.

We must conclude our remarks in another number.

#### CROWN FERRIES IN THE WAY OF IMPROVEMENTS.

On the 10th instant, as our readers may have noticed, a deputation of the committee of the Conservative Land Society and of the inhabitants of Isleworth, attended the Chief Commissioner of Woods and Forests, for the purpose of obtaining permission of the Crown to land on the Surrey side of the railway bridge across the river Thames, at Richmond, a project having been formed to erect a foot bridge as an appendage to the existing railway bridge.

The Society had already obtained the consent of the City Corporation and the South-Western Railway Company to this very desirable improvement for the public convenience; but



although the deputation informed the Chief Commissioner that the inhabitants of Isleworth and Richmond were prepared to construct the proposed bridge by voluntary subscription, and devote it to the public use, in order to save a detour of nearly a mile; they were met with the objection that the proposed bridge would interfere with ancient ferry rights, and that the Crown revenues could not be sacrificed. These "revenues," it is stated, amount to only a few pounds a year; and it was urged (in vain) that by the development of the neighbourhood, the two ferries in question would actually be enhanced in value. Mr. Gore, in reply, merely asked the deputation why the promoters did not purchase the ferries then. But this, it seems, would be too costly an affair for the proposers. A few old women, who lived by knitting stockings for those who could afford to have them in times gone by, would have prevented the manufacture of that necessary article of apparel by machinery, which placed them within the reach of all. Are not the Woods and Forests acting somewhat like the aforesaid old ladies? Inconveniences shall not be lessened: the public shall not have improved means of transit: the two sides of the river shall not be connected, and so improved, for fear we should lose our pennies. Surely, this is a very wrong position for them to take.

#### CONDITION OF OPEN CISTERNS.

ONE of your correspondents having given a sanitary hint in reference to being frozen out, &c. and as you invite workmen to give any information upon matters connected with their work, I would call the attention of the public to the inside of their cisterns; for when the workman goes to repair the pipes that have been burst by the frost, or stopped with dirt, if he has given sanitary matters any consideration he is shocked to find in cisterns a vegetation only to be found in that position; a vegetation which, as the supply ebbs and flows, leaves its marks on the sides of the cistern in green slime, coating the side as though it had been painted, and in the summer there is a crop of strange-looking plants, such I think as are not found elsewhere.

Your correspondent having ventilated the ventilation of our houses, perhaps a hint on that subject would not be out of place. When we find the windows streaming with the condensed breath of the inmates, or frosted on the insides with the cold, it is a broad hint Nature gives that the ventilation is defective; and when one knows that the head of the family has been at work all day in a badly ventilated workshop, it will not be out of place to respectfully call the attention of employers to any simple method by which they can ventilate their workshops. Take a jeweller's workshop over a stable, for example, where a number of men are employed, and who are injuring their health by working in a badly ventilated workshop,—and workmen who work in close shops are very sensitive of cold draughts,—but, if there were self-acting ventilators fixed in the roof, those would imperceptibly ventilate the shop, the men would be better in health, and grateful to their employers.

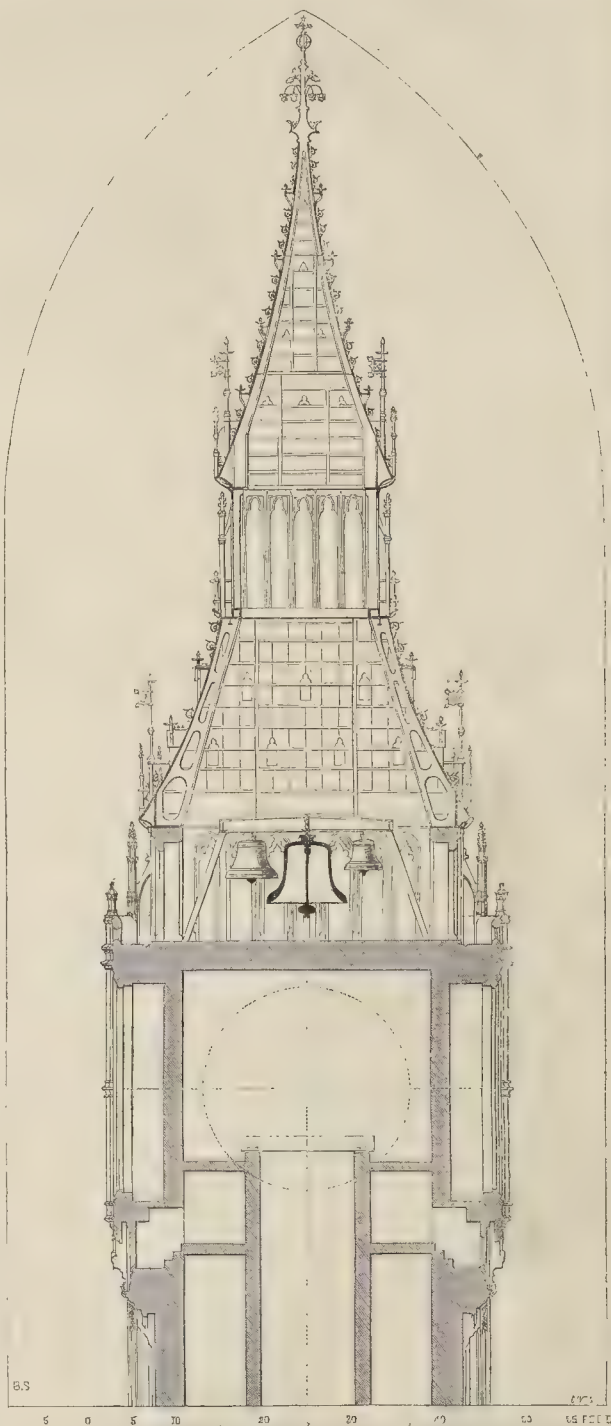
A WORKMAN.

#### FRESCO IN NEW PUBLIC OFFICES.

ALTHOUGH the remarks I am now about to make may be slightly premature, I hope it may draw your attention and that of others to this most important fact. As we all know, the new public buildings in Berlin and Munich have not a mass of bare walls, but they are all decorated with fresco. What impression did the staircase of the Museum in Berlin make upon you?—those glorious compositions of Cornelius and Kaulbach—equal in mind to Michelangelo? What think you after this of our British Museum, with its cold blank walls? What say you of the Glyptothek, in Munich, with Overbeck's perfections of loveliness, compared with the hall of the National Gallery? The want of fresco in our clubs and learned societies is a glaring defect, as also in the portico of any of our theatres. How splendid are those in Munich in a similar position!

I now most earnestly desire that, at least, the halls and staircases of the new Government Offices about to be completed for, may, at least, be decorated with fresco of grand biblical and historical subjects; and I sincerely hope this may lead our talented artists and connoisseurs to press this most necessary subject for the benefit of art, in order that we may have as grand works as Berlin and Munich, and that our buildings may not have those horrid blank walls so unclassical and unusual in the finest specimens of architecture.

CHARLES DE VERE.



THE CLOCK-TOWER, WESTMINSTER NEW PALACE.

Section of upper part.

[See p. 57, ante.]





THE CLOCK-TOWER, WESTMINSTER NEW PALACE.—SIR CHARLES BARRY, R.A. ARCHTCT.

[See p. 57, ante.



# THE USE OF IMAGINATION IN MODERN ARCHITECTURAL DESIGN.

THE ARCHITECTURAL ASSOCIATION.

THE use of imagination in modern architectural design was the theme of the paper read by Mr. Ruskin at the Conversazione of the Architectural Association, on Friday evening, the 23rd inst.—when there was a very full attendance of members and visitors, and the walls displayed a number of interesting drawings and sketches.

Mr. Ruskin commenced by observing that on reading over what he had written it seemed to have taken too much the form of advice. He was sorry for that; but he had been told that the paper he was to read was for young architects, and he must shelter himself behind the plea that a man might be qualified to give advice to others merely by having made mistakes himself. If they were asked abruptly, and required to answer shortly, what were the qualities which distinguished great artists from mean artists, he believed they might reply,—first, their imagination; second, their industry. Some of them might doubt the justice or the necessity of attaching so much importance to this latter quality, because there might be dull men who were industrious, and clever men who were indolent; but though the industrious man might be dull, and the indolent man might be clever, he had never known a great man who was not industrious. During such investigation as he had been able to give to the lives of the great artists who had influenced the world by their career, no fact ever loomed so much upon him, and no law was so universal in its application as this,—that they were all great workers. One of the unfailing characteristics of great artists was the astonishing quantity of work they accomplished during their lives. When they heard a young man spoken of as giving early promise of future excellence, the question they ought to ask was, "Does he work?" But though this quality of industry was essential to an artist, it did not make an artist; for many people were always busy whose doings are of little worth. Neither did feeling make the artist; but the gift which distinctively made the artist,—without which he would be feeble in life and forgotten in death,—was that of imagination. He would not occupy time by attempting to give any close definition of what the word imagination implied: we have all a sufficiently distinct and general idea of it, in our minds and in our hearts; and all pay an involuntary respect to that power wherever it can be recognised. Imagination was not manipulation, or calculation, or attention; it was something more, something higher than all or any of these. If an architect lays his bricks and stones well, we praise him for his manipulation; if he keeps well within his contract, we praise him for his calculation; if he arranges his beams so that nobody drops through his floors, we praise him for his caution. But, if he is to be a great architect, he must do something more than possess and exercise these qualities,—he must in the meantime be telling fairy tales out of his head. Then it remained to be considered what fairy tales in and by architecture can be told, and what can be done by the architect by the heart as well as by the hand. Perhaps the first idea of a young architect in these days was to think that it was incumbent upon him to invent a new style worthy of our times and country; but if there were any of his hearers who had been impressed with that responsibility, he would ask them whether every inventive architect amongst them was to invent a new style? or whether every inventive architect was to invent a piece of the new style, and then to put their styles together afterwards by subscription? If so, who was to be the Columbus destined to lead them to the undiscovered island which was to be the El Dorado of new styles? After all, when a new style was invented, what were they to do after that? Could they do more than build in it? or what could they secure in building in a new style that they had not in the styles already known? Their new style might be different from everything ever known before; all the orders of architecture might be entirely reversed,—but what next? He thought that if they quietly considered the subject they would see that if they were not content with a Palladio,

they would not be content with a Paxton, and he prayed them to get rid of the idea of there being any necessity for the invention of a new style. He would not address himself to those, if there were any, among his hearers who hoped to obtain celebrity by the invention of some strange way of building, but to those who would be content with that degree of celebrity which had satisfied our forefathers. The architect of Salisbury Cathedral might be well content with having erected that building, though he was not the inventor of Gothic; and one might be satisfied with such fame as Titian enjoyed at Venice, though he was not the inventor of oil painting. They must consider, then, what room was left for the exercise of the imagination under such conditions. First, it would be said that the principal exercise of the architect's fancy must be in the disposition of lines and mouldings in agreeable proportions. But he would ask what invention or imagination was necessary to this? What degree of fancy was called forth in the arrangement of the symmetrical lines and agreeable proportions of Whitehall Palace? Did the symmetry and beauty of that building ever inspire with a feeling of bravery the mounted soldiers who gazed upon it for hours together while on duty beneath the arches of the Horse Guards? or did they think that the lovers of London ever go down to the shadows of Whitehall for consolation when their mistresses are unkind? Proportion was dull, to say the least of it, and he would ask men of genius on the proportionate system upon what achievement of the past would they in their old age look back with satisfaction? Nearly every other art and profession had the pleasure of doing some good attached to it, either to the professor himself or to others, while the profession of architecture now left its professors in a position in which they could neither act nor feel nor see. He thought they might abandon the theory of architecture being in proportional lines, and find something better upon which to feast their fancy. In choosing their way of working, the young architect should endeavour to bring out all his faculties, and not be satisfied with expanding only some of them. If architectural designing led to no pleasant journeys, if it did not excite life and emotion, and passion, it sank into a condition in which those who practised it were neither numerators nor denominators, but mere common fractions. Their imagination should exhibit faculties of sympathy with living creatures, and all the varied beauties of nature around us. In order to show more clearly what he meant by imagination, and to contrast the works of our great forefathers with the commonplace and dull productions of the present day, the lecturer illustrated his remarks by exhibiting two photographs, one representing the sculptures in the south transept door of the cathedral at Amiens, the other the sculpture over one of the doors of the cathedral of Notre Dame. The sculptor, in the former of these, had represented with life-like accuracy the principal incidents in the life of St. Honoré, from the period of his being made Bishop of Amiens to his death, and the funeral ceremonies consequent thereon. That, in truth, was the work of the imagination of a great artist. In contrast to that he exhibited a drawing of a hole-in-the-wall building on the lines and proportions system, which did not require the aid of imagination in its design, and which any one might find in the "Encyclopædia Britannica," from which the drawing was copied, "according to scale." He regretted in modern times the separation between sculpture and architecture, the former, indeed, being that in which their imagination should be shadowed forth. In order to give their imagination and the other powers of their soul full scope, architects must themselves be sculptors; they must not study building without sculpture, and must themselves use the chisel. In fact, the lecturer went on to show that sculpture alone was architecture! Nicolo Pisano sculptured his panels and mouldings with his own hand; but our modern architects ordered bishops at so much a mitre, and cripples at so much a crutch. The great painters of old did not disdain to paint small pictures as well as the frescoes of the colossal gallery, and why then should the modern architect disdain to fill up the spaces of

his great building by sculptures of his own, instead of trusting such a work to others who had not, perhaps, the same imagination as himself. It might be said this would require much time and labour; doubtless it would, but nothing great, or worthy of a great man, was ever accomplished without both these. What a field was opened to the fancy by the junction of sculpture with architecture! Nearly every other art was limited in its space; but was there anything within the range of sight, or thought, or conception, which might not be of use to the architect, or in which an interest might not be awakened to the advantage of his art? The whole animal, vegetable, and mineral kingdom bent down before and was at the disposal of the architect; and as there was nothing in life, so there was nothing in lifelessness which had not its lesson for him and its gift. Now, that their art presented all these materials to them, they had already much to rejoice in; but they had more to rejoice in because all these were submitted to them not to be dissected and analyzed, but to be sympathised with, in order to bring out what might be called the moral part of their imagination. They had seen that if they kept among lines and proportions only, they should have cause to envy the naturalist, because he was conversant with facts; but they would have nothing to envy in him if they made themselves conversant with feelings arising out of his facts. Their work was always with the living creature; the one thing they had to get at in him was his way of living,—his mode of going about things; but in order to sympathise with living things, you must be familiar with them. We frequently are silent when we consider the responsibility that may attach to words, of which the chance is that few will be heard at all, or, if heard, will be forgotten; but none of our words would be unheard or forgotten if we talked well. Let him talk well in his works, and the artist would be remembered long after he was gone; let him build large enough, and carve boldly enough, and all the world would hear him. Let him see that his work was happily done, or it never would make any one else happy; let him be influenced but by one noble impulse, and let that impulse be love—love for the art he practises, and for the creatures to whom he ministers it. They might rest assured that if ever any other motive than love for the art they practised became the leading one in their mind, that moment it was all over with their art. He did not say that they were not to desire money, or fame, or position; they could not but desire all three; may, they might (if they were willing to allow him to desecrate the word love for a moment),—they might love all three,—that was, earnestly covet them; but they must not do that in the first place. The question was one of first or second. Did their art lead them?—or did their desire for gain lead them? They might like making money exceedingly, but if it came to a fair question of whether they were to make 500*l.* less upon a business, or to spoil their building, and they chose to spoil their building, it was all over with their art. They must love art for its own sake, and if they allowed the desire for money, for fame, or for position to take precedence over the love of their art, they were not in the true sense artists,—they were mechanics and drudges. In the next place, they must love the creation they work in the midst of, for wholly in proportion to the intensity of feeling with which they approached to the subject they had chosen would be the depth and justice of their perception of its character; that perception was not to be gained at the moment they wished to bring it to bear, but must be the fruit of an intimate feeling of love and sympathy. He could not caution his hearers too forcibly to keep clear of petty, mean cares; whatever they did, let them not fill their heads with little chagrins and little desires. It was possible they might get into a habit of saving money; that at a time of great trial they might yield to the temptation of speaking ill of their fellow artist; but they would shorten their powers and dim their brightness even by this. Let them keep themselves quiet and peaceful, with their eyes open. They might be anxious for the good opinion of Mr. So and So; but it did not matter what Mr. So and So thought of their



work: it mattered only what the birds were doing up there in their nests: it did not matter whether the workman would do what they wanted him to do, it did not matter what that little ragged urchin was doing at the corner of the street, or the children who were gambling in the doorway. Unless they were in the habit of long watching birds and children, they could not sympathise or feel with them. In order to have a due appreciation of nature, they must accustom themselves to see it in all its phases. The highest nobleness was commonly among the poor, the aged, and the infirm. It was not the strong arm of the soldier, or the health of the young beauty, that were the best studies for art. It was not in the church pews, where the gay dresses were, but in the church free seats, where the widow and the mourner were, that they would discover the finest feelings of nature portrayed. Lastly, they must love the creatures to whom they ministered,—their fellow-men,—for if they did not love them, they would be little interested in the passing events of life, and be apt to be struck only by the outside form, and not by the interior. If they would be great, let them be also kind. So soon as they desired to build largely, they would find that their work must be associative; one could not carve a whole cathedral himself,—either their own work must be disgraced, or they must raise their fellow-designers to some correspondence of power. They would take the lead in disposing of their building, but they must trust to the genius and invention of others in the disposal of its detail; and in doing this, too, they must rejoice in the very powers that may promise to rival them. If they endeavoured to depress or disguise the talents of their subordinates, they were lost to their art, for it was their own prosperity they were seeking, and their own skill that they were striving to perpetuate. He placed no utopian standard before them; he had said that they must surrender their own pre-eminence to their love of building, and whomsoever they found better able to do what would adorn it than they were, that person they were to give place to, and rejoice at seeing their edifice growing more beautiful under his chisel, and next rejoicing that they had done kindly. The man who sees capacity in another, and does not acknowledge it, or assist in bringing it forth, is not the refuser of a kindness, but the committer of an injury. They had the sweet consciousness that as their art embraced a wider field than all others, so it was more profound and holy than all others. The artist when his pupil is perfect, must see him leave his room that he may pursue his destiny perhaps as an opponent in toil; the man of science wrestles with the man of science; but architects alone were called by kindness to fraternity of toil. These massive piles which rise above the domestic roofs of our ancient cities have a meaning more profound and true than is commonly attached to them. Men say they are good for worship,—but so is every mountain, riglen, and rough sea shore; they have the indisputable and distinguished glory that their mighty walls were raised by men who have given aid to each other in their weakness, and the strength of their structure has its foundations on manly friendship which conduces to awaken the sweeter cadences and symmetry of the human soul.

#### CHURCH-BUILDING NEWS.

**Kingston-upon-Thames.**—The church of St. Mark (Surbiton), in the above parish, has been opened for evening service, having been fitted up for gas by Messrs. Hart and Son. The fittings include ten brass coronas in the nave, of twelve burners each, and three larger in the transept. The chancel has two rich brass pendants, containing thirty-six jets, with foliage of the passion-flower leaf. The coronas are suspended from ornamental brackets, fixed under the clerestory windows, illuminated with vermilion, ultramarine, and gold.

**Wisbech.**—The parish church of St. Peter and St. Paul, Wisbech, in Cambridgeshire, was reopened on the 20th instant, after a thorough restoration of the interior. This church is an object of interest to antiquaries and ecclesiologists. It consists of a double nave with aisles,

and a double chancel. The tower is attached to the north side of the church. The work is of various dates. The chancels are both of the Decorated period, to which also belong the exterior walls of the aisles, but the aisle windows are of very late Perpendicular work. The arcades of the nave are of three distinct dates, viz. the north arcade, Norman, with very slender shafts; the central arcade, Perpendicular; and the south arcade, Decorated. The church has for a long time been in a most unsightly and even dangerous state, crammed with hideous pews, and two tiers of galleries, and banked up outside with soil to the window-sills. In 1853, plans were obtained from Messrs. Glover and Smith, of Norwich, architects, for refitting the interior, and effecting the repairs most urgent, but it was not till 1856 that the parish was in a position to commence the work, which was then placed under the control of Mr. Slater, of London, and executed under the immediate superintendence of Mr. W. Smith, one of the architects originally employed, and Mr. J. Butler as clerk of works. The whole of the galleries have been removed, and the church has been re-seated with oak benches of simple design, with pulpit, prayer-desk, lectern, and chancel-seats of richer character. The chancel ceiling has been fresh panelled, and the ancient carvings, which had fallen into the possession of a townsman, have been restored by him, and replaced, and the requisite new supplied. The east window, a special gift, has been renewed, from a design of five lights by Mr. Smith, and filled with stained-glass by Messrs. Hardman, of Birmingham. The church is lighted with gas, the standards being from Messrs. Skidmore's, of Coventry. The organ, an old and valuable one by the celebrated Harris and Greene, has been removed to the east end of the south aisle, and refitted by Messrs. Hill, of London. The cost of the works has been about 3,000*l.* besides the east window, 400*l.* The general contractor for the works was Mr. Kingham, of Norwich. The church affords accommodation on the floor for 1,600 persons.

**Walsall.**—A special meeting of the local Burial Board was held at the Guildhall last week, for the purpose of opening and considering tenders that had been received for the erection of chapels, entrance-lobby, &c. on the grounds of the new cemetery. Of six tenders, the choice lay between those of Mr. Walter Heaps, builder, Walsall, and Mr. C. Burckett, of Wolverhampton; the former offering to do the work creditably for 1,544*l.* the latter for 1,548*l.* The Board resolved on accepting Mr. Burckett's tender.

**Sheffield.**—The parish church was lately reopened. The changes made are chiefly the removal of obstructions, and a step towards restoring the church to its original form. For many years, the centre arches under the tower have been blocked up by the organ, thus making an entire separation between the chancel and the nave of the church. The gallery of the north transept, and a number of useless pews in the transept, have now been removed, and the organ is placed near the floor of the north transept. The arches under the tower are again opened, revealing the old view of the entire church from east to west. A further obstruction to the view is removed in the old pulpit—a heavy and cumbersome structure. It has been replaced by a light pulpit, which stands at the foot of one of the piers of the tower. The western pews are carried forward, so as to fill up the old passage between the doors which have been closed, and the space it occupied is allotted to an inner porch, crossing the western end, for the convenience of the three new doors. The alterations have been carried out under the direction of Mr. T. J. Flockton, architect, under whom Messrs. Dutton and Heald have been the carpenters, and Mr. Mastin, the mason. Mr. Shaw, of Saddleworth, has furnished the new pulpit and reading-desk. The churchyard at the western end of the church has been lowered and asphalted between the grave-stones, so as to give good access to the new doors. These alterations have been carried out by subscription, and have cost between 600*l.* and 700*l.* It is the intention of the Rev. Dr. Sale, the vicar, says the local *Independent*, to present to the church a western window in coloured glass. The window is already in progress, in the hands

of Mr. R. Drury. The design is foliated in colours.

**Eston (Yorkshire).**—A Congregational Chapel is about to be erected at Eston, a rapidly increasing village in the heart of the Cleveland ironstone district, situate between Redcar and Middlesbrough. The edifice will be built of the stone of the district, in the Early English style of Gothic architecture, and have a belfry on the north gable. Mr. Oliver, jun. is the architect.

#### DISCOLOURATION OF STONEWORK.

In the last number of your journal I observe a correspondent complains of the formation of a green lichen or moss (a microscopic specimen of an alga) on some recent stonework. I should recommend that the walls be washed over with a dilute solution of bichloride of mercury (corrosive sublimate), say, half an ounce of the salt to one gallon of water. Arsenious acid, also, dissolved in a weak solution of common pearlash, would most probably effect what your correspondent wishes.

The cause of the "green" appearance would be various. It may rest with the stone itself,—the latter being perhaps, from its chemical composition or physical structure, especially adapted for the retention of organic matter, and the germs of minute cryptogamous plants.

Again, the presence of hygroscopic moisture may tend to encourage vegetable life, or the drain to which your correspondent refers, having some slight leakage or gaseous emanation, may furnish the predisposing influence.

It might be well to know more concerning the nature of the stone, and of the class of diseases most prominent in the neighbourhood.

WENTWORTH L. SCOTT.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the ordinary meeting of the Institute, on Monday, the 26th (Mr. Godwin in the chair), Mons. Didron, *aimé*, of Paris, was elected Hon. and Cor. Member; Mr. Henry Shaw, Hon. Member; and Mr. John Thomas Christopher, and Mr. Joseph Gale, Associates.

The discussion on the various methods of indurating and preserving stonework was then resumed, by the reading of a paper by Mr. de Witt, on the chemical part of the subject, in reply to Mr. C. H. Smith. Papers by Mr. Huskisson (Tonbridge Wells), Mr. Ransome, and Mr. Daines, on their several processes were read, and statements were made by Mr. Barrett and Mr. Page. To these we shall refer hereafter. Mr. Jennings, Professor Tennant, Mr. Burnell, and others took part in the discussion.

Reference being again made to the stone work of Buckingham Palace, Mr. Dines, on the part of the representatives of the late Mr. Thomas Cubitt, desired it might be understood that Mr. Cubitt had always objected to the use of the stone which was employed, and merely obeyed orders.

On the announcement of the subscriptions already received for a memorial of the late John Britton, to be placed in Salisbury Cathedral,

Mr. Perrey suggested that, as works were going on at the church of Kingston St. Michael, the place of Mr. Britton's birth, the restoration of a part of the church would be a better mode of appropriating the subscriptions.

#### GAS WARMING AND VENTILATING APPARATUS.

The great extension of the use of gas in dwellings and places of business now absolutely requires the general adoption of something like a civilized mode of gas-ventilation,—as requisite in rooms lighted or heated by gas as chimneys are in those containing grates and stoves. Nothing but the general *invisibleness* of the noxious products of gas combustion has prevented this necessity from being *seen*; whereas the more invisible the carbonaceous fumes or smoke may be, the more pernicious is the product; for in this case, mere smoke is more or less converted into the well-known means by which, in France especially, so many suicides are effectually accomplished, namely, carbonic acid gas, as from charcoal stoves. The perfect combustion of illuminative gas gives essentially the same product, combined with others, some of which are no less pernicious. In burning gas without proper gas or other chimneys to carry off these villainous products, therefore, we are acting with grosser barbarism and ignorance, and with vastly more mischievous consequences to health, than the poor Irish peasant displays in burning his peat in a small hovel without an ordinary chimney. What we have more particularly to say in the present instance, however,



relates to the warming as well as ventilating of apartments through the ordinary chimney, by means of gas apparatus. This double purpose is at present proposed to be effected in a mode which has been patented by Mr. Adolph, of St. Mary-axe, who recently exhibited his apparatus in operation at Bucklebury. The invention, as described in the *Morning Herald*, consists of a small box, on the hearth, containing the gas jets, the top covered with tals. At one end of this box there is an aperture to admit the air for supporting the combustion of the gas. Another aperture at the opposite end communicates with a tube passing in a spiral through the hot-air box, and finally out at the chimney. Through this tube the whole products of combustion pass, raising the temperature of the air surrounding it, without in the least contaminating it. The dry air as it is heated passes out into the room through two perforated plates at the top of the box, its place being supplied by cold air admitted at the lower part. There is also an aperture at the top of the apparatus which can be closed, by which the room is effectually ventilated. The whole is fitted in such a manner as to occupy the position of an ordinary stove. It is also contemplated to distribute the light from the gas-jets about the room by means of compound reflectors. An equal temperature of 60 deg. Fahrenheit may thus, it is said, be maintained in a large room at the cost of about  $\frac{1}{3}$ d. per hour.

#### ON SUBMARINE ELECTRIC TELEGRAPHS.

INSTITUTION OF CIVIL ENGINEERS.

At a meeting of the Institution, held on the 13th inst. Mr. I. K. Brunel, Vice-President, in the chair, the paper read was "On Submarine Electric Telegraphs," by Mr. F. R. Window.

In a brief relation of the early history of the Submarine Electric Telegraph, it was stated not to have been the invention of any one person, but rather the result of the combined researches and exertions of many experimenters. The first mention that the author had been able to find of any method of sufficiently insulating wires as to enable them to conduct a current when submerged in water, was, in an account of some experiments made in India by Dr. (now Sir W. B.) O'Shaughnessy, in 1839, recorded in the *Journal of the Asiatic Society*. In these experiments the wire was covered with tarred yarn, and enclosed in a split ratan, which was again enveloped in another coating of tarred yarn.

Shortly after this (in 1840), Professor Wheatstone gave it as his opinion, expressed before a committee of the House of Commons, that a submarine communication between England and France was practicable. And in October of the same year, a paragraph in the *Bulletin de l'Académie Royale des Sciences de Bruxelles* stated, that Professor Wheatstone had discovered a means of joining Belgium and England by a submarine telegraph. The nature of the discovery was not, however, mentioned. All these experiments were made previous to the suggestion of Professor Faraday to use as an insulating agent gutta percha, which, up to the present time, has been universally employed. An extract from an American newspaper was given, containing an account of a submarine telegraph stated to have been successfully constructed by Colonel Colt, from Hell Gate to Fire Island, and in which it was also said that the same gentleman had applied to the United States Government for funds, for the purpose of forming a telegraphic line from America to Europe.

In 1848 a submarine telegraph wire, insulated with gutta percha, was laid by Lieutenant Siemens, of the Royal Prussian Artillery, under the Rhine, from Deutz to Cologne, a distance of about half-mile. And in January, 1849, Mr. C. V. Walker towed a similar wire two miles in length out to sea, off Dover, and sent signals to London through it.

In August, 1850, a gutta percha covered wire was laid by Mr. Wollaston from Dover to Calais, through which signals were sent with success, but it lasted perfect only about twenty-four hours.

On the 25th of September, 1851, a cable, consisting of four insulated wires incased in a sheath of ten No. 1 iron wires, was laid down from Dover to Calais, by Mr. Crampton, assisted by Mr. Wollaston, and was stated to have remained perfect to the present time.

The author discussed the respective merits of the compound cable system, or the collection of many insulated wires into one cable, as in the Calais and Ostend telegraphs, and the simple cable containing but one wire, as in the lines of the International Telegraph Company to Holland and Ireland: the greater facility which these latter afforded for repair, and the less chance of having the business stopped by rupture, since one wire only, and not all, would be affected by the cause, was pointed out; and it was shown that the cost of the two systems did not materially differ.

The conductive power of submerged wires was

then theoretically investigated, and it was shown that a considerable difference as to time existed between the transmission of signals upon suspended wires, and upon insulated wires immersed in water, or buried in the earth;—that while with the former it appeared that the only limit of practical speed was the possibility of deciphering the signals; in the latter the electric current required an appreciable period of time to arrive at its destination, and another longer period to escape from the wire into the earth, and that this period of time increased regularly with the length of the wire; consequently, upon a line formed of submerged wires of considerable length, there would always be a limit of possibility of the number of signals that could be transmitted in a given time. These effects were stated to be caused by lateral induction, the insulated wire assuming the nature of a Leyden arrangement of vast dimensions, where the copper wire represented the inner coating, and the film of moisture surrounding the gutta percha acted as the outer coating.

The author argued, that since submarine lines were more costly than suspended lines, and nevertheless a smaller amount of business could be sent along them in an equal time, it was important that no pains should be spared, whereby this lateral induction, and consequently the evils arising from it, might be reduced; though, being in accordance with a law of nature, it could not be entirely avoided.

#### BERWICK CORN-EXCHANGE COMPETITION.

Will you kindly, by circulating this little ditty amongst your readers, give a chance to such of them as compete for the Berwick Corn-Exchange, to get rid of their superfluous indignation by singing it to the tune of the sum expended by them on their design?

A COMPETITOR.

Sing a song of Corn Exchange,  
Barley, wheat, and rye,  
Five-and-fifty architects  
Competing for "my eye."  
Now the drawings are sent back,  
Needs must that I sing,  
The Berwick Competition  
As a very noble thing.

The treasurer is at his desk,  
Grinning at the money;  
Directors sitting at the Board,  
Looking very funny;  
To think so many architects  
In greenness were agreed,  
To make out plans, and pay their freight  
To Berwick-upon-Tweed.

"I'll tell you," quoth a jolly man,  
"The only way that we  
"Can show our sense of this expense  
"And labour that we see.  
"We must choose one from this here lot,  
"I'm very much afraid:  
"That done, we'll then send back again  
"The rest, with freight unpaid."

The resolution passed *nem. con.*  
The Board were much amused,  
To think how all these architects  
Would feel themselves ill-used.  
If any of them read this song,  
I'm sure they'll wish good speed,  
To the Corn Exchange Directors  
At Berwick-upon-Tweed.

#### ST. MARY'S TOWER, TAUNTON.

The following is the report referred to in a recent number:—

"In consequence of your request that we should again take into consideration the state of this tower since our examination of it in 1855, and report to you our final opinion, after weighing the several facts brought to our notice in the reports made at various times, and more recently by the survey and statements as communicated by Mr. Carver, we have given our most careful attention, and have duly reconsidered the subject in all its important bearings, animated by the most anxious desire to avail ourselves of every practical suggestion that could afford a hope of preserving so noble a structure. The exceedingly dilapidated and ruinous state of the tower has been fully dwelt upon in the reports of all those professional gentlemen who have been called upon to survey its condition, and no difference of opinion exists in regard to the facts; there are the most startling evidences of failure in the construction and decay in the external stonework, and were they to be found in a building of less architectural interest, their existence would probably be considered quite fatal to any scheme of preservation, and no professional man would hesitate to advise rebuilding, with certain success, in preference to less substantial measures of repair. We will not, however, conceal our most earnest wish, if possible, to preserve this tower in any way consistent with safety. 1st. Because of its inherent beauty of proportion and detail. On this ground we should be content to recommend a course of repair, falling short of an entire renovation, yet preserving the main decorative features, leaving those details which may still endure

many years to be removed at a future time when they may become ruinous; nor should we desire to disguise the new portions which may be renewed by any attempt to touch the new stonework to the grey tint of the old masonry. 2nd. As regards the safety of the structure, although the settlements and fractures are of an accumulated character, they are not such, as far as we can judge, to render the tower immediately dangerous. Supposing those projecting features of the external design removed, which, from the external decay, are liable to fall, no apprehension of danger need be entertained, either from the spreading of the tower, or the subsidence of the masonry, should the weather be not permitted to penetrate the fissures. We are, therefore, of opinion that it is practicable for the tower to be shored up, and the lower stage (where the crumbling effect is most manifest) to be made strong and lasting, and that by well-inserted bond stones, cement grouting, and other means, the superstructure can be greatly strengthened, and further chance of settlements arrested. But here the certainty of remedial measures appears to us to cease; for though the re-fixing of the bells, under this measure of repair, may be permitted, it would scarcely be safe to allow them to be rung in jovious peals; they should be used only for chiming; the vibratory effect caused by a full peal might be productive of mischief to walls which, under the most successful treatment of repair, could not be said to possess the strength which belongs to walls well built; nor can we say, that when the works have been effected, there may not occur such rapid progress in the disintegration of the remaining outer stonework as to render further expense soon necessary. Under these circumstances, we do not see that it is possible for us to give a definitive opinion as to which course is a choice of us, but that there is a choice of us, and two modes of proceeding. The one a restoration, which may not produce a result quite adequate to what would be the natural wishes of the inhabitants, inasmuch as it cannot restore the tower to that full degree of strength which such a construction should possess, though it would have the advantage of retaining, in a certain degree, the identity of the structure. The other, a perfect reconstruction, which, if properly carried out, would ensure all that could be desired, but with the loss of that identity. In placing these alternatives before the parish, we should wish to guard the reader against any misapprehensions which may arise. In the first place, let it not be imagined that, because we speak of the danger to the tower not being immediate and imminent, it will be safe to go on doing and saying nothing, but at any moment increase so as to render reparation impossible; and the continued exposure to weather, and the penetration of wet and frost into the fissures, render such a change far from impossible. It is therefore useless to think of letting it remain as it is. It must either be repaired or rebuilt. On the other hand, we wish to guard against the opposite extreme: your delusion is not what has been said may lead you to take down the tower without having provided means for ensuring its reconstruction. It is far too valuable an inheritance to be risked. If you feel that a reparation would not ensure it to you, that substantial and permanent form which you think desirable, is only the more necessary that in determining on its reconstruction, you make it certain before you take any step that you are taking down the tower, that its reconstruction in all its integrity shall be absolutely guaranteed, as the present structure repaired and partially restored would be infinitely preferable to a new one stopped short of completion.

(Signed) "G. G. SCOTT.  
HENR. FERRET."

#### WOLVERHAMPTON WORKHOUSE COMPETITION.

As it was announced in your *Journal* of the 17th inst. that the design of Messrs. Bidlake and Lovatt, of Wolverhampton, was selected from amongst several submitted for the inspection of the Guardians, we wish it to be understood by the profession at large that none of us submitted designs for the competition in question.

The Guardians having determined upon allowing to the successful competitor a commission of *four per cent. only*, we declined according to their terms, and, at a meeting which we held upon the subject decided upon, and addressed, the following letter to the Board.

[The letter urged that the time allowed for sending in plans for the enlargement of the workhouse should be extended, and also that the architects' commission should be at the usual rate of five per cent. upon the outlay, instead of four, as stated in the advertisement. It said,—

"In the second place, we view with considerable anxiety, the proposal for reducing the commission from the usual five per cent. to four per cent. as a remuneration to the successful competitor, and this not only in a pecuniary point of view, but from the conviction that, if the introduction of such a system is allowed, it will be all too injurious to the profession and the public at large. Five per cent. is now universally acknowledged to be the fair and legitimate remuneration of an architect for designing and superintending a building, and which, while it is in no case more than a sufficient payment, is in many cases obviously insufficient to cover the necessarily great expense and labour which the architect has to incur in preparing his plans, and discharging his onerous and responsible duties; besides, it has been found that the tendency of this reduction of the commission, in the few places where it has been tried, has been to lower the standard of honour and morality among the architects, and to induce them, in order to elude their insufficient remuneration to an extent at least commensurate with the loss per cent., to accept from builders and other persons employed, gratuities and fees in some other way.

We have always most steadfastly opposed this system, and intend to do so as long as we earnestly hope that the guardians will, now that their attention is called to the subject, at once alter their proposals, and thus discountenance a system which would assuredly be the means of bringing to the aid of the architect, and thus to the detriment of the public, the most pernicious and non-professional manner we have named, and this, of course, at the expense of their employers."



You will perceive that Messrs. Bidlake and Lovatt attached their signature to the letter; and yet, with a gross violation of good faith towards us, they ultimately decided upon accepting the terms of the Board by ending in designs.

It is useless for architects to complain of the unfair treatment they receive as competitors, if there be not little unanimity of action amongst themselves. That our letter addressed to the Board of Guardians met with responsive feelings from the majority of professional men in this neighbourhood, is made manifest by the fact of there being but four designs at it, not one of which met with the full approval of the Board, or was considered as adapted to their purposes; in fact, on this account several of the members declined voting for any of the plans submitted. (Signed)

ROBERT EBBELS,  
EDWARD BANKS,  
GRIFFIN and WELLER, } Architects.  
J. R. VEALE,  
Wolverhampton, Jan. 27, 1857.

STAINED GLASS.

*South Wales*.—Mr. Clutterbuck has just completed the eastern triplet for the new church of Llandugwydd, near Cardigan, rebuilt in the First Pointed style. The three lights contain nine medallions, illustrative of our Saviour's life; intermixed with geometric patterns. The subjects are arranged as follows:—1. "The Annunciation;" 2. "The Birth;" 3. "The Baptism;" 4. "The Last Supper;" 5. "The Agony in the Garden;" 6. "The Crucifixion;" 7. "The Descent;" 8. "The Resurrection;" and, 9. "The Ascension." The same building is also being enriched with eight pointed windows, from Mr. Lavers's studio. The four side lancets of chancel and south window of tower are filled with geometric glass, allusions to the church. The two west lancets and large sixfold over same are memorial windows to a free parishioner, and exhibit in the two lancets four works of charity; viz. "Hungry, and ye fed me;" "Thirsty, and ye gave me drink;" "Naked, and ye clothed me;" "Sick, and ye visited me;"—well drawn, richly coloured, within geometric patterns, of which the sixfold is also composed. For the neighbouring church of Llaunfair-Nantgwyn, restored in the Middle Pointed style, Mr. Lavers has also executed five windows, all being the gift of the lay-impropriator. The east window, of three lights, contains the subject of the Crucifixion in the centre, and on either side the three Marys, and SS. John and Joseph of Arimathea, and the good centurion, under rich canopies and gables. The south window of chancel contains arched bearings; and the two west windows of quarry glass, with the emblems of the four Evangelists. The third church in the same locality, which was being filled with Mr. Lavers's glass, is the new church of Aberporth, rebuilt in the Middle Pointed style, and containing three pointed windows: the two north windows, south of chancel and west of nave, tracery, are filled with geometric glass, both tracery; and the east of chancel, a three-light window, with three quatrefoils in the head, is also filled with geometric glass; the centre light containing a large window of the Ascension of our Lord, with the emblems of the Trinity, Holy Lamb, and the Pelican, rising up the tracery. The whole of the foregoing windows have been executed under the superintendence of Mr. Withers, architect.

LAYING OUT NEW STREETS.

BOARD OF WORKS.

At a meeting of the Board, on the 23rd inst. Mr. Wright moved the adoption of a report from the Committee of Works and Improvements, recommending—"That the designs which may be sent in to the Board by the several competitors, showing the best mode of laying out the surface and subsoil of the new streets, and other particulars described in the resolution of the Board of the 16th of January, be referred to a committee of seven persons, consisting of four professional men, and the chairman and two other members of this Board. That the Committee of Works be authorised to select four professional men for that purpose, and that the Board do nominate the two members to be associated with the chairman." The proposition led to an animated conversation, in which it was urged that if this proposition was adopted it would be a public declaration that the Board was in a state of common sense, and could not decide which was the best plan that might be submitted to them. Mr. Mayor moved, as an amendment, that two professional men be selected, instead of four, to assist the committee.

Mr. Alderman Cubitt, M.P., seconded the amendment, and said from what he had seen of subways in Rue de Rivoli and in the Boulevard de Sebastopol,

in Paris, he felt impressed with the fact that the subject of sub-ways was by no means devoided.

Ultimately the original motion was carried by a majority of 18 to 10.

BUILDERS' BILLS.

HANNAFORD C. HILL.

This was an action at the Sheriff's Court, Middlesex, before Mr. Undersheriff Burchell, brought by a slater, to recover the sum of 18*l.* from the defendant, who was a builder, for a large slate cistern capable of holding about three tons of water. The defendant resisted the claim on the ground that the cistern was inefficient for the purposes for which it was intended.

It appeared that the defendant contracted to do certain work for the General Apothecaries' Company, 49, Berners-street, Oxford-street, amongst which was the fitting up of two slate cisterns, one a small one, and the other large enough to hold 900 gallons of water. The plaintiff undertook to make and fix them up for the sum of 18*l.* 18*s.* He put them up; but when the large one was finished, objection was taken to it as too weak to hold the water. Some strengthening bolts and fillets were then added to it; but when it was fully charged, it leaked at the side and at the bottom. The plaintiff was applied to, and he had something further done to it to strengthen it, but the defendant ultimately rejected it, had it taken down, and another put up by another tradesman. The plaintiff accounted for the leakage by the settling of a new wall upon which it rested, which opened one of the joints of the tank; while the defendant's witnesses said it was because the sides and ends did not fit into the grooves, but, on the contrary, they were filled up with putty. A large amount of evidence was given on both sides, when the jury returned a verdict for the plaintiff for the amount claimed, 18*l.*

THE BLASTING OPERATION AT HOLYHEAD HARBOUR.

This operation, mentioned in our last but one, took place on Friday, the 16th inst. under the personal direction of Mr. Charles Rigby, assisted by Mr. Reithemer, the resident engineer of the firm. It is computed that above 120,000 tons were brought down and broken into masses ready for loading by this explosion. The aggregate charge in the four chambers, acting upon a face of 210 feet in length, 115 feet in height, with a line of least resistance of about 25 feet, was 16,000 lbs. of gunpowder. The voltaic battery was placed a short distance from the quarries, and the spectators were within a protected battery or observatory in front of the mountain, at a distance of only 600 yards from which they were enabled to witness the explosion without danger, not a stone having been propelled 100 yards from the face of the quarry. We may here mention that nearly 6,000,000 tons of stone have been already dislodged by this means for the construction of the harbour, without failure and without accident. In the mining operations which take place for this purpose, the quantity of gunpowder used annually exceeds 500,000 lbs. or more than 250 tons, and the stone deposited in the sea, for the formation of the rubble foundations and embankment, exceeds yearly 1,000,000 tons. In addition to the agency which gunpowder affords for the rapid construction of this breakwater, there are employed upwards of 1,200 men, a large number of locomotive engines, stationary engines, travelling cranes with steam power, and every modern appliance which mechanical skill can bring to bear to accelerate the completion of this important harbour of refuge.

The northern (or great) breakwater is at present about 7,000 feet in length, or nearly one mile and a half, and will enclose an area of upwards of 800 acres of Holyhead Bay. The breakwater extends about a mile and a half from the Holyhead shore, a small portion of which is walled in and finished, the rest being a rough embankment covered with piles and scaffolding. The present cost to the country is about 700,000*l.* The water shelter now provided by the new harbour is about 370 acres, in which upwards of 200 vessels have at one time anchored. About 280 earth waggons and trucks, and eight locomotive engines are in regular use; and employment is given to about 1,000 persons, at a cost of about 1,000*l.* per week in wages. The consumption of powder is about 200 tons per annum: the quantity of rock thrown into the sea is about 4,000 tons per working day, or over 1,000,000 tons per annum. The length of embankment already made is about 7,000 feet, and it takes about 1,000 tons of rock to extend it 1 foot into the sea.

ELECTRO-TELEGRAPHIC.—The directors of the Electric Telegraph Company have resolved to recommend a dividend at the rate of 7 per cent. per annum at their half-yearly meeting on the 5th of February.

THE SHEFFIELD NEW SCHOOL OF ART.

The new building for the Sheffield School of Art was occupied by the annual meeting of subscribers held on Thursday in last week. The entire cost of the new premises, including site and fittings, is 7,100*l.* of which 1,600*l.* are still to be realized. The ground is of irregular form. Fronting to Arundel-street it has a width of 47 feet, and at this width it extends backwards for 55 feet. Then the ground widens to the extent of 72 feet, and at this width it extends backwards 78 feet to Arundel-lane. The principal frontage, therefore, is 47 feet, the back frontage 72 feet, and the depth from front to back 133 feet. The natural position of the ground is a very steep descent from front to back, and this has afforded the facility for a basement story behind, on the level of Arundel-lane. The front of the building is in the Byzantine and Romanesque style. It is built of coloured brick, relieved by stonework. The front door opens into a hall 25 feet 3 inches, by 18 feet 3 inches, and 16 feet high, lighted by two windows on the right side of the door. From the front door a corridor runs through the front and centre portions of the building into the elementary room, which occupies the full breadth of the site in the Arundel-lane front. To the left of the door is the council-room, 34 feet by 19 feet, with windows to Arundel-street. Behind the entrance-hall, and to the right of the corridor, is the geometrical room, 26 feet 10 inches, by 19 feet. Behind the council-room, to the left of the corridor, is the principal staircase. From the foot of the staircase the corridor crosses the centre portion, which contains the lecture theatre and life school, which contains the building is contracted for the sake of leaving on each flank a court for the benefit of side lights. On the left is the lecture theatre and life school, 35 feet by 33 feet. This theatre, and also the corridor, open into the elementary room, which, according to the local *Independent*, from whose columns we here quote, presents the greatest flat floor in the town. Its dimensions are 69 feet 4 inches, by 39 feet, and its height is 21 feet. It is lighted by seven large and lofty windows looking into Arundel-lane. Returning to the foot of the staircase, which is lighted from the roof, we ascend by wooden stairs, 6 feet wide, enriched by newells and oak moulded hand-rails, to the first floor. The staircase terminates in a corridor, corresponding with that on the ground floor. Opening out of the corridor at the head of the stairs is the principal master's room, 19 feet by 18 feet. The Arundel-street front is occupied by the female school, 45 feet by 25 feet, with nine windows to Arundel-street. Adjoining this school are bonnet and cloak rooms, lavatory, and other conveniences. Over the theatre and life school is the painting room, 35 feet by 27 feet. The sculpture gallery is situated over the elementary room, and of the same dimensions. This room, 69 feet long, 39 feet wide, and 21 feet high to the flat ceiling, is lighted by a counter light from the roof. An attic over the front part of the building is divided into a number of studios for the principal and more advanced students. There are various other accommodations. The principal means of warming are two Gill stoves, manufactured by Messrs. Jobson Smith, and Co. of Sheffield. Two ventilating shafts, into which there are communications from the ceilings of the various rooms, traverse the building from bottom to top, and with the aid of the Gill stoves in winter, and of a small fire in summer, maintain a current which carries off the foul atmosphere, and allows its place to be supplied by pure air. Messrs. Manning and Mew were the architects, Mr. Mycock, the contractor, and Mr. French clerk of the works. Mr. Mycock's contract was 4,400*l.*; extra charges about 182*l.*

The annual meeting was held in the council room, and the report was read by Mr. Young Mitchell. It stated that during the past year the school had fully upheld its high character. The council hoped the national schools of the town would avail themselves of the advantages held out by the Government for introducing art-education. The income for the past year had been 984*l.* of which 510*l.* was a grant from Government, 255*l.* were from students' fees, and 203*l.* from subscriptions. The report was approved of and adopted.

Miscellaneous.

PROPOSED STATUE TO THE LATE MR. BROTHERTON, M.P.—A large and influential meeting was held in the Town-hall, Manchester, on Monday in last week, presided over by the mayor of Salford, when it was agreed that a marble or bronze statue in honour of Mr. Brotherton (who died so suddenly in an omnibus a few weeks ago) should be erected in Peel Park, Salford. Between 900*l.* and 1,000*l.* were subscribed towards the object at the meeting, the mayor of Manchester and several other gentlemen contributing 50*l.* each.



**NEW COTTON-MILLS AT BOLTON.**—In 1856, five new cotton-mills were commenced in Bolton and the neighbourhood, says the *Manchester Courier*, namely, a large and handsome mill at Gilnow, for 65,000 spindles; another large mill in Lostock, for 60,000 spindles; one in Westkington, for 30,000 spindles (all by Mr. Woodhouse, architect); one in Great Bolton; and one in Little Bolton. There are about to be erected at least four other new mills, one in Halliwell, for 40,000 spindles; one for 30,000 spindles, near Tanner's Hole; one at Farnworth, for 30,000 spindles (all by Mr. Woodhouse, architect); a large one in Halliwell (by Mr. Holt, architect); and the Mount Pleasant Mills, which have been standing a considerable time, are undergoing alterations, under the superintendence of Mr. James Lomax, surveyor. These will make an addition of ten mills, and others are spoken of.

**LABOURERS' DWELLINGS IN LIVERPOOL.**—The block of buildings in Northumberland-street and George-street, Toxteth-park, erected by the local association for the improvement of such dwellings, has now been completed. This is the first block of forty model dwellings to which the project extends. The company was formed in 1854. It was originally under the metropolitan charter, but was subsequently registered as a limited liability company. The Albert cottages, a similar undertaking, in Frederick-street, had conferred a great social benefit, and proved satisfactory as a pecuniary investment. For the Northumberland-street scheme, nearly 800 shares, of 25s. each, were taken. The plans were submitted to the Health Committee of the Town Council, who approved of them, and made some suggestions as to the arrangements. The buildings have cost upwards of 6,000*l*. Detailed plans and a sketch of the elevation, have been lithographed. The dwellings are various in accommodation: they contain, besides the living room, one, two, or three bedrooms. Gas is introduced into the living rooms throughout, and each dwelling is supplied with a scullery, sink, water-tap, shelves, plate-rack, larder, coal-place, and water-closet; and there is a common dust-shaft. The access is by a fire-proof staircase. Ventilation and drainage have been specially attended to. There are general washing-rooms in the basement, and drying-rooms in the roof. Near the washhouse there is a bath-room, and a large room is appropriated to an infant-school.

**FALLING IN OF THE PORTWOOD NEW BRIDGE, STOCKPORT.**—On Monday in last week considerable alarm was created by the giving way of the new stone bridge now in the course of erection over the river Goyt. The bridge was in a very forward state, having been turned on each side nearly to the centre, ready for the key-stone. Five of the workmen were engaged on the arch, when Peter Wilson, the foreman, hearing something crack under him on the Portwood side, communicated his fears to the person next to him; and, on looking, observed that one of the bolted beams had split, and the dependent framework was giving way in consequence. The next moment he felt the stone work sink: he gave a sudden spring into the water, and instantly the bridge fell, leaving nothing but the buttresses standing. Two of the men escaped, and the other three were but slightly injured. The upper portion of the arch, having fallen inwards, struck the corbels of the buttresses, and broke them off. The damage, it is expected, will not exceed 200*l*. and the contractor is not limited as to time.

**SCOTTISH AGRICULTURAL DWELLINGS IMPROVEMENT ASSOCIATION.**—The annual meeting of this Association was held in Edinburgh last week; the Duke of Buccleuch presiding. Sir John Forbes read the third annual Report, which stated that the Directors had, in different parts of Scotland, been urging the necessity of increased accommodation for agricultural labourers, and had sent plans for cottage accommodation. He congratulated the meeting on the beneficial results which had followed the operations of the Society during the three years of its existence, and the warm interest which was now beginning to be felt in its proceedings by noblemen and gentlemen in every part of Scotland. The Report was approved of, and the progress declared to be highly satisfactory.

**BENDING SHEET IRON FOR BEAMS.**—Mr. John Le Cappelain, of New Bridge-street, has invented some alleged improvements in machinery for bending sheet iron into corrugated forms for constructing beams. On the main shaft or axis of the power there are three wheels with rounded rims. The main axis or shaft is carried by parallel bars, capable of being moved to or from each other. Above the three wheels there are two other similar wheels capable of adjustment. The sheet iron to be bent is placed on ledges or supports attached to the two side bars, and as the iron is progressively bent, the two upper wheels come more and more between the lower wheels.

**VITAL STATISTICS.**—An interesting return of the vital statistics of the metropolis during the past year has just been published by the Registrar-General. In the fifty-two weeks terminating on the 27th of December, 44,169 boys and 42,674 girls were born, and 28,894 males and 27,892 females died. Assuming the population in the middle of 1856 to have been 2,616,248, the mortality during the past year was twenty-two in 1,000, which is lower than in any year except 1850, when it was a little under twenty-one in 1,000. It is computed that, with the addition of soldiers and seamen who have returned from the seat of war, the population of London at the close of 1856 was 60,000 more than it was at the close of 1855.

**EXPERIMENTS BY THE PATENT TIMBER BENDING COMPANY.**—Some experiments in bending timber for various useful purposes, lately took place in the premises of Messrs. Collinge and Co. Bridge-road, Lambeth. The experiments are said to have been carried out principally to convince the Government that an immense saving might be obtained to the country by the adoption of the new mode of bending into a permanently set form every kind of wood into any shape. Amongst those present were, Admiral Best, Admiral Sharpe, Captain Carnac, R.N.; Captain Edmunds, R.M.; Captain Mackinnon, and several others. One experiment consisted of a small specimen of oak, which is said to have been quickly bent into the form of a hoop, which was afterwards straightened, and eventually turned inside out. Another experiment consisted of a large oak ship's floor timber, 12 inches by 8 inches, which was in a quarter of an hour bent into a right angle. The cost of curved wood consumed in the British islands under the present method of supply in its natural condition amounts, it appears, to at least 5,000,000*l*. sterling per annum, partially occasioned by the waste of that method. The new process of bending timber will it is said, reduce the cost of ships of all sizes 25 per cent. and greatly increase their strength and durability, by avoiding the necessity for using cross-grained wood.

**RAILWAY MATTERS.**—A Railway from Durham direct to London, is talked of; capital, 4,000,000*l*.: it is designed exclusively for the carriage of coals and other minerals, bulky goods, cattle, and agricultural produce, and to be named the "Northern Coal Railway."—The traffic returns of the railways in the United Kingdom, for week ending January 10, amounted to 387,951*l*. and for the corresponding period of last year, to 364,251*l*. showing an increase of 23,700*l*. The gross receipts of the eight railways having their termini in the metropolis, amounted to 161,401*l*.; and last year to 154,637*l*. showing an increase of 6,764*l*.—The increase on the Eastern Counties amounted to 1,245*l*., on the Great Northern to 789*l*., on the Great Western to 992*l*., on the London and North-Western to 3,842*l*., on the London, Brighton, and South Coast to 256*l*.; total, 7,104*l*.; but from this must be deducted 91*l*. the decrease on the London and Blackwall, 34*l*. on the London and South-Western, and 215*l*. on the South-Eastern. The receipts on the other lines in the United Kingdom amounted to 226,550*l*. and last year to 209,614*l*.; showing an increase of 16,936*l*.

—Mr. E. Talbot, of Spring Vale, Staffordshire, has invented a peculiar construction of split or compound rails, "enabling him to manufacture half or split bars with perfect bearings or flanges, and which, when combined, have the required strength and structure of ordinary rails."—Mr. W. Rye, of Manchester, has invented certain improvements in fixing or fastening rails of railways in their chairs.

**ST. MARY'S, MOORFIELDS.**—The chapel of the "Sacred Heart," in this church, was opened on the 18th, having been decorated by Mr. Shaw, of Upper Thames-street. The principal cornice is finished in crimson, blue, green, lavender, and dead white, with the dentils and capitals etched with gilding. The pilasters are of Siena marble, and the lower portion of the walls in imitation of panelled blocks of jasper, Irish green, and Italian antique, with bases of Verd antique and Egyptian green. The altar is painted dead white, and has gold relieved with colours on the several mouldings. The panels are filled with arabesque ornaments, and the door of the tabernacle has a painting of "The Sacred Heart," and instruments of the Passion. There is a painting on the wall above the cornice, of a "Pelican in her Piety," on a gold background. The works have been in progress for three months, under the direction of Mr. John Young, jun. architect.

**A HINT ON LIGHTING THE PROPOSED NEW NATIONAL GALLERY.**—While lately travelling in Italy, I noticed a most excellent plan of lighting picture-galleries from above and below; but I am sorry I cannot remember for certain what town it was in, but I think Bologna; and I hope this will call the attention of architects to it, that they may visit and study it. It is decidedly a great "dodge," if I may use the vulgarism.—C. DE V.

**BRISTOL ATHENÆUM SOCIETY.**—A *soirée* was held in the Victoria-rooms, on Wednesday in last week. The whole suite of rooms was engaged, and pictures, drawings, photographs, stereoscopes, and other works of art and amusement diversified the proceedings. There were also music and dancing; and the president of the Athenæum, and the Mayor of Bristol, and other gentlemen briefly addressed the assembly. On the following day the rooms were thrown open to visitors at a nominal charge, and large numbers of the inhabitants availed themselves of the opportunity to inspect the numerous objects of interest collected within the building.

**ART MANUFACTURE EXHIBITION AT EDINBURGH.**—After a brief season, the first annual exhibition of the Art Manufacture Association of Scotland, in the National Gallery at Edinburgh, has closed. From its opening, on the 18th of December last, it is estimated that it has been visited by considerably upwards of 60,000 persons. In the course of the exhibition several evenings have been devoted to *conversations* and lectures. Among the speakers and subjects have been,—Professor G. Wilson, "On the Application of Ornamental to Industrial Art;" Mr. M. Wellwood, of Pitliver, "On the History of European Porcelain;" and Mr. C. H. Wilson, Glasgow, "On the Improvement of Ornamental Art;" and the concluding lecture was to be given by the hon. secretary, Mr. A. Christie, "On the Objects of the Association in forming the Exhibition."

**THE SOCIETY OF ANTIQUARIES OF SCOTLAND.**—At the last meeting of this society, a paper was read, entitled "Poetical Maxims from a Painted Room in the Old House at Colross, called 'The Palace,' with Notices of the History of the Building and its probable Founder," by Mr. A. Jervise. In this paper Mr. Jervise described the old house at Colross in which the painted room in question occurs, and adduced some reasons for supposing that it was erected by Sir George Bruce, third son of Sir Alexander Bruce, of Blairhall, in the end of the sixteenth century. One of the rooms, which has a carved roof, is lined with wood, divided into eighteen panels or compartments, all of which are filled with curiously painted pictures illustrative of morality and virtue, with appropriate and quaint maxims in verse. Of these Mr. Jervise deciphered thirteen. Mr. Cosmo Innes suggested the propriety of opening communications with all the schoolmasters in Scotland, with the view of obtaining information and reports from time to time of any objects of historical interest found in their several districts; and a committee was named for the purpose of carrying out the proposal.

**FALL OF A RAILWAY BRIDGE.**—The traffic of the line of railway between Coventry and Nuneaton (a branch of the London and North-Western), was stopped on Monday by the falling in of a viaduct at Cowden, a short distance from Coventry. The line from the latter city communicates direct from Leamington with Tamworth, Derby, and the north. The bridge, which is of several arches, is of stone, and carries over the rails a very important old turnpike-road of the district; but, fortunately, at the time the accident occurred, owing to the absence of traffic, not the slightest injury befell either the road or railway travellers.

**NEW IRON WORKS AT WORKINGTON AND HARRINGTON.**—The Harrington Iron Company are constructing two blast furnaces which, when in full operation, are expected to give employment to about 700 hands, to whom on an average 750*l*. a week wages will be paid. About 1,000 tons of ore will be weekly smelted by this company, and should they commence as ironfounders, the importance of these works to the district will be greatly increased. At Workington a company for the smelting of iron ore has been formed on the principle of limited liability, under the title of the Workington Hematite Iron Company, with a capital of 30,000*l*. The works are to be forthwith commenced.

**THE CHURCH OF ST. VINCENT OF PAUL, COKE.**—We are asked to say, with reference to our mention of the church of St. Vincent of Paul, that the internal completion of the building, and all the fittings, including benches, stained glass, and a very richly-sculptured reredos and altar, in Caen stone and Irish marbles, has been carried out under the direction of Messrs. Weightman, Hadfield, and Goldie, architects.

**IRRIGATION OF LONDON.**—I perceive a manifest spirit for general improvement in every department which is advocated by your publication, which I, in a great measure, attribute to its powerful and legitimate influence. Might I suggest to you the propriety of the general irrigation of London streets and pavements by three o'clock in the morning? So many persons being now out of employ, and the object being a legitimate one, I hope you will urge this point, being so salutary and so becoming the dignity of one of the greatest cities in the world.

W. SHARPE, M.A.



# The Builder.

VOL. XV.—No. 731.



THE competition designs in the ARCHITECTURAL EXHIBITION comprise but a small portion of the number which were originally sent in competition for the several projected buildings. But they form, perhaps, the most interesting and useful feature in the collection of works in Suffolk-street. We had less reason to draw attention to them than we had to other portions of the Exhibition: for, we had long previously been urging upon our professional readers—so pertinaciously almost as to be offensive to some of them—that there was a store of materials in such works, deserving of far more careful study than appeared to be given generally by architects when the opportunity offered. The justice of the selection in any of the present cases, we do not propose to inquire into; indeed, that object is not the one for which means are afforded to us in the Exhibition. In the collection of drawings for the Lille Cathedral—the subject of one of the competitions referred to—there are only seven designs out of the forty-one that were submitted by English and foreign architects. The design which received the first premium is not exhibited; and of the designs which gained medals, or honourable mention, several are equally wanting,—whilst the foreign architects do not present themselves at all. [Also we may observe that some of the exhibitors show only a portion of their drawings, and those selected are not always correspondent as to other sets. As regards the Liverpool Free Library and Museum competition, the case is much the same, with the additional inconvenience of the differences of scale between sketches made in the preliminary competition and drawings at large. The Rotherham Grammar School and the Middlesex Industrial Schools competitions, and one or two others may be said to be barely represented.]

For any considerable proportion of the competition drawings of the year, however, as we have also remarked, the space in the galleries would be insufficient. Arrangements will, doubtless, be made for the ultimate display of a larger collection, as well as with reference to facility of comparison. This last is of far more importance, as regards the purposes of study, when for the means of checking the decision of a committee. Such a decision is of course often glaringly unjust; but it is fair to committees to say—and there will be no loss in admitting it—that there are often cases where it is most difficult for any architect to name the design which, on the whole, includes the greatest number of points of merit. Therefore, demanding, as an adjudication of premiums does, both technical knowledge and rare judicial ability, we might believe that it is to such advantage as may be got out of an exhibition, that a competitor should mainly look. That seems to be, indeed, the state of the case as to more than one of the competitions from which drawings are exhibited now in Suffolk-street.—It is curious to note how the several essentials of a good building are often found distributed about (the competitors' drawings,—one design providing the requisite accommodation,—another what would at first appear to be the best elevations,—whilst, going to the component parts of architectural effect, frequently we hesitate between condemning what in a partial sense would be so masterly,

and sanctioning what is not attained without an associated quality obviously unsuited to the object. The design (172 to 177) for the Liverpool building, with the motto "Con Amore," already described in our pages, we may observe, without entering into the question of general merits, itself has a portico characterised by the special defect of that of the National Gallery, in the absence of a visible base of steps. The provision of these, it is true, was attended with difficulty in consequence of the slope of the ground,—but the main object seems to be attained in a design (213 to 222), by Mr. S. Hewitt, one of the sixteen selected for final decision, where the steps appear above a dwarf wall of rusticated masonry, on which there are lamps—and behind which there are side flights—thus in front of the portico and its proper steps, instead of as in the arrangement at the National Gallery. Mr. Hewitt's design is a bold one. It has the motto "Cupola," which indicates the main part of the scheme. There is a great rotunda, with an inner circle of columns. The latter carry a second circle of columns,—but in this case with arches—and these carry the dome, which has a span of over 70 feet, and with no abutment that we can discover, at the springing at least. Otherwise, such a rotunda with the coffered vault could be made to realize a grand effect; and there are many decorative details in this design internally, which display taste. The dome, as seen externally, is weak in treatment; and windows at the back of a portico, at least if they are at all numerous, we have frequently observed can but suggest that the portico should not be there.—The matter of the slope of the ground has been the grand difficulty with the designers in most cases. Some of the designs have a defect common in such cases, where one end of the building appears as though plunged in the earth; whilst in other designs, by providing a plain *soubassement*, and keeping the main apertures and the chief ornamental character to the stories above, and by some artifice of enclosing wall or balustraded flights of steps at the entrance, the objection is overcome.

Mr. Truefitt's large drawing (178) is one which, both from its clever execution and the character of its design, claims notice. A long chapter might be written of the points of discussion which it would suggest. Thus,—How far can the purpose of a building, be it museum, prison, mausoleum, or whatever else, be made to speak from the face of it? Were we to assent to all that has sometimes been said on this subject, every one of the thousand uses of structures, and in places of worship every sectarian difference, should be so made manifest that there could be no need of an inscription. But these shades of distinction never have been attained, and they are doubtless beyond the capabilities of art. The mind of the designer indeed is far more likely to imprint the prevailing likeness on all his buildings, whatever their object. At the same time it is too obvious to need showing, that certain characteristics are popularly conceived as belonging to particular buildings; therefore, where the design is for a different object, although that object may not be expressed, anything that would convey the expression of the opposite, should be avoided. *Common sense*, in the person of one of "the public," pauses before this design by Mr. Truefitt, and takes it to be a "prison," or a "mausoleum," or anything rather than a museum, and will pay no regard to the consideration that the lighting of museums, libraries, and picture-galleries, from the top, necessarily entails blank wall-surface. It is upon the happy balance of many different requirements and qualities of effect, that the whole success of architectural art depends, and we do not know that there is any subject for design more difficult than that of decoration of mere wall-surface. Soane, at the Bank of England,

got the desired ornamentation and relief, only by offending against utilitarian and structural principles. But in regard to the grouping of masses and parts, and the manner in which the coloured materials are moulded with the architecture without the colour predominating over the form—points just now so little observed—the design we have been noticing lays claim to praise.

In No. 179, by Mr. J. Nicholls, the plan has a rotunda, with semicircular recesses, opening out from it,—but, externally at least, could the design have justified the selection of it as one of the sixteen? Mr. F. T. Gompertz's design (180) for the same building, has considerable merit in the internal arrangements generally, and in the lighting and decoration, and the author deserves credit for the manner in which he has presented his design in plans and sections to a small scale. In the design of Mr. E. W. Tarn, M.A. there is a long colonnade on a podium: a semicircular portico and two salient columns at each end project from it; and the latter are surmounted by turrets,—so that the support of columns appears insufficient. Mr. F. Wallen's design (182) deserves close inspection, at least as regards the main elevation, which has the stories well grouped, the principal feature being an arcade of windows on the upper floor, of Byzantine character, which manner also pertains to the details, in which colour is introduced. The centre is formed by three of the arched openings, grouped under a pediment, but is injured by the interference of the hood of the door with the window over it. There are some good features in the section,—but the dome in the centre of the ground would not show as apparently intended. This is a mistake which is more serious in some other designs, and is one which, as of the utmost importance, and as liable to escape the notice of non-professional judges, we have often referred to, to show the erroneous principle in the constitution of such tribunals.

Mr. T. E. Knightley's two designs (183 and 184) display considerable taste. In the first, the difficulty of the ground is well met, by the arrangement of the *soubassement*, and the steps ascending two ways, with a dwarf wall, on which is a group of sculpture and candelabra. In the basement proper, the rustication is pleasingly varied. The other design (184) is somewhat too close in its intercolumniation, but has great merit. Mr. G. O. Lane's design (189 to 195), also of the sixteen, has a ten-columned portico, and lacks novelty in the exterior,—though its author has shown in the elevation a variation from his design, as though hesitatingly, but which variation is really the best of the alternatives he offers. The plan, however, would be suitable, and highly effective; a central hall, with columns and staircases, forming a main feature. Mr. H. P. Horner's design (196), though a modestly drawn elevation, evinces great taste, and might have been expected to be amongst the sixteen. It takes the arrangement of a low building, arched along the front, with square piers, five of the arches opening to a loggia in the centre; and the front terminates with an Italian cornice, with an inscription worked into the frieze. In Mr. Lewis Stide's sketch (200) a Romanesque character is adopted. There is not sufficient unity in the design. An arched loggia of two stories, forms the best portion. Mr. John W. Papworth exhibits (223) sketches of plans only. Mr. T. A. Britton's design (224) is one of those which well illustrate the mistake referred to as to the design of a dome in intended combination with a façade, and which could not possibly have the effect shown in elevation. Mr. S. Huggins's design, mentioned in a former number by a reference to certain peculiarities of detail, is not on that account to be regarded as unworthy of its author's well-earned reputation. It presents an



economic distribution of the ground, and capability of extension without alteration of the design. The portico, projecting tetrastyle between square angle piers, without pediment, but with a statue on the top, and carefully designed details, has both novelty and merit, which may also be said of other parts of the building. The whole is surmounted by an octagonal dome, which groups with the portico. Mr. G. E. Grayson, in his design (233 to 235), places his library in the centre of a circular reading-room, the former being terminated by a lofty dome, from the tambour of which there projects a square block of building, which appears to be a portion of the staircase. Messrs. J. W. and J. Hay's design (236—237) is not favourably represented by the drawings. It consists mainly of one story of windows, with Florentine arches, and a deep cantilever cornice. Mr. R. Kerr gets over the difficulty of the site by introducing a grass slope, on which the ground line is level. There are two wings, each with four columns in *antis*, and a recessed centre, with hexastyle portico, and a dome. Some colour is introduced.

The principal designs for the Lille Cathedral, now exhibited, were noticed briefly in our last volume, p. 169; and the result of the competition was stated subsequently, pp. 218 and 233. Referring to that and other records in our volume, we cannot but again express regret that even those designs which are in the catalogue, could be displayed in Suffolk-street, in so small a number of drawings compared with what were first sent in at Lille. Our correspondent there, spoke of twenty-four drawings under the motto, "Quam Dilecta Tabernacula," that of Mr. G. E. Street, who gained the second premium; and we cannot make up any such number as now exhibited in London (343 to 351). Under the motto, "In Domino Confido," there were twelve drawings; but three only are exhibited (352 to 354) by Mr. T. E. Thrup, to whom the catalogue awards a "silver medal," erroneously, it would seem, though the drawings have high merit. The design with the motto, "Ad Æthera Tendens," which gained a silver medal,—though it is not so stated in the catalogue,—was shown in no less than thirty-one drawings; but Messrs. G. Evans and R. P. Pullan, have but five in Suffolk-street (355 to 359), besides an "Interior of a Cathedral; a Study in Decoration" (360). And Mr. C. Brodric's design, with the motto, "Spes," which gained a silver medal, is shown in five of the six drawings (336 to 340). Of the other drawings, Mr. John Robinson's (330 to 332)—the design bearing the motto, "Excelsior,"—may be named as having received "honourable mention,"—though it is not so stated in the catalogue. The only other designs for the same building in the Exhibition, are one by Messrs. F. G. Lee and R. J. Jones (324 to 329), a work having some of its features too obviously suggested by the west end of Peterborough, and the spire of All Saints, Margaret-street, and otherwise inferior in character and detail; and a design by Mr. C. F. Kelly (334 and 335), which also is spoken of as having received "honourable mention;" but we think in this case also, by one of these numerous errors—which surely are without excuse. Looking at what we have, we now feel no surprise that the Exhibition at Lille excited so much interest. The drawings of Messrs. Street, Thrup, Brodric, and Evans and Pullan, are most honourable to the English school; and as designs, the several works display considerably more of inventive talent than we have been in the habit of seeing of late. And it is deserving of notice, that this skill is shown alike in the architecture of the fabric and in the fittings and furniture. The question arises,—What is there that should bind the exercise of this skill in any British architect, within the range of a certain style or of a single class of buildings, or should as too often is the case, prevent the exercise of anything more than clever imitation or adaptation. If really it is only prejudice that interferes with the development of *art*, no matter what be the style,—let us hope that the architectural skill, here so abundantly manifest as in some state existing, will be able to transport itself to any other field of operation, or embody itself in any other language that may happen to

be in common use and familiar to the public. To the architect it should matter little what be the style of the day—that which is of household use; but to art—and to the public, if they are ever to become lovers of art—it matters much, that no sudden violence to popular perception of *art*, should be done by mere change or contradiction of style,—which in such case exerts an influence of its own,—such as, perhaps, it may be thought ought not to be within the capability of mere style,—but which operates, and appears to be distinct from, and to usurp the place of, the *art*.

The best of the designs we have mentioned are well contrived for execution in brick and stone, without elaborate external decoration, but with all the regard for the beauty of outline and grouping which should be found in a cathedral. The apsidal east ends with pinnacles are in the chief cases treated with great ability. We may especially refer to Mr. Brodric's design in this point; though whether in the west front with its three doorways, its noble tower and spire, and the open screen work which aids in the pyramidal outline, or in the general details (which are very elaborate), this design will repay long examination. Perhaps, however, it may not have been thought calculated for the local materials. Two western towers are adopted in all the other designs,—though Messrs. Evans and Pullan terminate theirs at no great height, by open canopy work,—but they have a lofty tower and spire at the intersection of the cross. The western towers in Mr. Street's design would, we think, be capable of improvement, the spire portion being insufficiently developed. The whole of Mr. Street's drawings are elaborately shaded in pen and ink, and there is no lack of pains and taste in his numerous drawings of fittings.—Mr. Thrup's drawings also deserve praise for design and execution. The western towers terminating in octagons and capped by spires are amongst the best features of the design. The interior is highly effective; though the choir arch is somewhat cramped in appearance of width.

We do not profess to notice all the drawings in the Exhibition, and many which would well deserve examination we may have altogether omitted. Some of the few designs for the Middlesex Industrial School have the plan on the concentrating principle,—Messrs. Reeves and Butcher (299 and 303), placing the kitchen in the centre of a general octagonal distribution of the parts of the plan, and Messrs. Morgan and Phipson (300 to 302) having a large swimming-bath in the centre, with the dining-rooms around it. Had we space, also we might mention many meritorious designs for accessories of buildings, and for objects of ornamental and decorative art, and many drawings of old examples. Mr. T. E. Knightley, in the decorations of the Parish Church, Shoreditch (464), Mr. Aspitell, Mr. Digby Wyatt, Mr. Prignot, Mr. L. W. Collman, Mr. H. B. Garling, Mr. J. T. Irvine, and Mr. W. P. Griffith, contribute works of merit, and of various kinds.

The practical decorators exhibit as in former years, and manifest considerable taste and knowledge of resources, with, as before, not unfrequently the lack of structural principle. Also we would say, that we are obliged to pass over, as their merits would not deserve, many drawings of buildings,—such as those which are contributed by Mr. P. Anson, Mr. Hesketh, Mr. J. T. Christopher, the Rev. J. L. Petit, and others. The several drawings by Mr. R. N. Shaw, the Academy travelling student, are some of the best that we have ever seen; though in recognising their merit, we regret to see evidence of exclusive attention to one particular school of architecture. We should, perhaps, have mentioned a plan by Mr. Bruce Allen, for building the National Galleries of Art and Science, partly on the Kensington Gore Estate, and partly in Kensington Gardens, with a junction across the road; but to this we may have another opportunity to refer.

We cannot conclude without again pressing upon the attention of the committee, that it is indispensable for the attainment of their objects, that the Exhibition should be located in larger, amply lighted, and more comfortable rooms,—if not also in such as can be had at a better period of the year. We do not profess to have

given the attention to the collection, which in the manner of study, it would deserve from architects; but we happen to have felt obliged, even for present purposes, to spend much time in the rooms. We would merely observe that such is the cold and discomfort of the place, that it is now painful to spend an hour there in looking at drawings; and that of many of the drawings placed in corners or on the top line, not a detail can be discerned without the greatest difficulty; and the result is, we are well assured, that visitors go away ignorant of the interest which there really is in the collection, or unwilling to suffer the inconvenience which has to be endured in discovering it. The only opportunities just now of properly seeing the drawings, are the lecture evenings; and even then, the lighting in the small rooms is not sufficient. We know we may be held excused for laying so much stress upon these matters; for they have their influence in rendering less speedy the general popular recognition of the real character and value of our art.

#### ATHENS.\*

LET us now carry to an end our account of this world-famed city.

The Return of the Heracleids, in the eleventh century, B.C. and conquest of Peloponnesus by the Dorians, forms an event in Grecian history, to which the ultimate eminence of the whole race may be clearly ascribed; an event that formed the conclusion of the mythical age, and the introduction to the period of authentic history, which commences with the first Olympiad, nearly three centuries after that most important revolution.

One of the great characteristics of mythical history is, that the events that it records are wrapped in an uncertainty as to date and circumstance, to attempt to penetrate which would be to destroy the beautiful but tottering fabric upon which it rests; and by exposing the frail nature of the materials of which it is composed, destroy the faith that for ages has leant on it for support. To maintain, then, a belief in events having no parallel in existing times, it was necessary to affix periods of indefinite distance, in order to preserve unbroken that halo of obscurity which alone could prevent the eye of incredulity from detecting those fallacies in construction that might expose to the world the worthlessness of the whole. To pry too closely into the early ages of Grecian history—to rob the realms of mythicism of the bright and glowing imagery that constitutes its sole beauty and value—to analyse too minutely those national myths, that entwine their beautiful and flowery fictions round each legendary page of a history, handed down from generation to generation, through the medium of memory alone, and communicated in the figurative language of poetry only, would be to strip the tree of knowledge of its verdure, and reduce it to a sapless, lifeless trunk.

"Historia quoquo modo scripta delectat."

The aphorism, doubtless, applies to *authentic* history only; but where authenticity is unavailable for want of a written medium of conveyance, we must be careful, lest in despising too much the shadow we lose the substance also.

"As one who has been journeying through the dark," says Bulwer, by a fine figure, "begins at length to perceive the night breaking away in mist and shadow, so that the forms of things, yet uncertain and undefined, assume an exaggerated and gigantic outline, half lost amidst the clouds, so now, through the obscurity of fable, we descry the dim and mighty outline of the Heroic Age." Alike removed from the darkness of early fable and the broad daylight of written narrative—the period of demi-gods and heroes, superhuman prowess, daring adventure and lofty crime—like the superhuman beings whose deeds invest it with the romance that makes its charm, it forms the connecting link between mythology and mankind. According to mythical chronology, it constitutes a period of about two centuries from the first appearance of the Hellenes in Thessaly to the conclusion of the Trojan War, and amongst the chief incidents that adorn it are the story of Danaus and his descendants, the labours of



Hercules, the exploits of Theseus, the institution of the Laws of Minos, the expedition of Jason and the Argonauts in search of the Golden Fleece, the story of Œdipus and Jocasta, and the "Seven against Thebes," and the Siege of Troy,—the last and crowning achievement of all. The hero, however, whose history was inseparably connected with that of Athens, was Theseus. In his history, by Plutarch, we seem to recognise the type of the romances of our own days of chivalry; but laying aside the events in it that are purely fabulous, his untiring in one body the twelve independent states of Attica, and making Athens their capital;—his institution of the Panathœnaia and Synœkia in honour of Athena; his division of the citizens into the three classes of *Eupatride*, or nobles, *Geomori*, or husbandmen, and *Demiturgi*, or artisans;—his extension of the Attic territory to the confines of Peloponnesus, and establishment of the Isthmian games in honour of Poseidon or Neptune, and his increase of the capital to the south of the citadel, are deeds worthy of record.

The Theseum (*Θησειον*), or temple built in his honour, is the best preserved of all the monuments of ancient Athens. It was commenced B.C. 469, as a receptacle for the bones of Theseus, brought from Scyros by Cimon, and is consequently about thirty years older than the Parthenon. It is a Doric hexastyle peripteral, having thirteen columns in the flanks; the cella is undivided, the pronaos and posticum are distyle in *antis*; the columns of the former alone are wanted of the total number forty-eight. It stands upon a stylobate of two steps, the total length of the upper one being 104 feet; the breadth, 45 feet. It was only the metopes of the east portico of this temple, with four additional ones on each return, that were sculptured, all the rest being plain. The friezes of the pronaos and posticum, continued right across the ambulatories, were also sculptured; the sculptures of the pediments have entirely disappeared. The subjects of these sculptures were the exploits of Theseus and Hercules, and, though much mutilated, evince a high style of art. The development of Greek sculpture is divided into two periods. Not taking account of the fathers of the art, as Dædalus of Athens, too deeply allied to the fabulous by his connection with the waxen wings of Icarus; or his pupil Endæus; or later, Dipænus and Scyllis, of Crete; or after still, Bupalus and Anthemus; the first period of Greek sculpture, in its ultimate development, is that of Phidias, the *Æschylus* of the plastic art, and his contemporaries Myron and Polyctetus. His chief works were the statue of Nemesis, after the battle of Marathon; that of Minerva, in the Parthenon; and that of Olympian Jove, at Elis; the latter 60 feet high, and so calculated to awe the spectator by its impressive majesty, that the Roman historian says,—"Ejus pulchritudo adiecisse aliquid etiam exceptæ religioni videtur, adeo majestas operis æquavit." The fame of Ageladas rests chiefly upon his having instructed the able masters in their art. Many others, as Alcæmenes, who executed portions of the sculpture at Elis, and probably aided Phidias in that of the Parthenon, held high position in this period. Prior to Phidias flourished Onatus, Hegius, Callimachus, Calamis, and others, included in the same school.

In the second period of Attic sculpture, which succeeded to the Peloponnesian war, the sufferings and privations attending that trying period produced a proportionate change in public feeling; and the calm majesty of Jove, Hera, and Athena, gave place to the more violent passions of Dionysus, Aphrodite, and Eros. At the head of the school stand Scopas, of Paros, and Praxiteles. The former was one of the artists employed by Artemisia, queen of Caria, to decorate the tomb of her husband, Mausolus, at Halicarnassus; the latter was a citizen of Athens, and claimed as his masterpiece the statue of Aphrodite; but the works of each were numerous, and of a high order. Later still was a school called Sicynic, of which Euphranor and Lysippus may be considered the type. Numerous works of the above sculptors formed the choicest ornaments of Rome in the time of Augustus. But to return to architecture. A space of three centuries elapsed after the Dorian con-

quest to the time of Lyeurgus and date of the first Olympiad, during which history presents isolated facts, with but little connection with each other. It was at Corinth, during the period of the Despots, that art reappears upon the scene, but changed and transformed in its features. "It is no longer," says Fergusson, "the elegant and ornate forms of Mycænæ and the cognate Asiatic art, but the rude, bold proportions of Egyptian art, and with almost more than Egyptian massiveness." It is the Doric order of architecture, which, drawing its origin from the rock-cut tomb of Beni-Hassan, followed the bold race that first adopted its massive proportions, and left the imperishable records of their presence wherever that enterprising people had pushed their extended rule. The temple at Corinth, of which only a few columns, with their architrave, exist, is supposed to be one of the oldest temples of the kind, and may probably date from 650 B.C. The pillars are less than four diameters in height, and the architrave is proportionally massive.

Next in age to this is the Temple of Egina, dedicated to Jupiter Panhellenius, to which, from the character of its sculpture now at Munich, we may assign the middle of the sixth century before Christ for its date.

It is probable that in the progress of the Persian war most of the temples of Greece, which, like the earliest Parthenon (some of whose remains we have already described as existing in the walls of the Acropolis) must have existed prior to that invasion, were swept away; and that even those that remained were either pulled down or rebuilt to suit the augmented greatness of the state. It is for this reason that all the great temples now found in Greece were built subsequently to the victories of Salamis and Platea. Then was raised the Theseum, succeeded by the Parthenon (the only octastyle Doric temple in Greece), where the style attained its culminating point. To it succeeded the great hexastyle temple of Jupiter at Olympia, that of Minerva at Sunium, the larger temple at Rhammus, the Propylæa at Athens, the Temple of Ceres at Eleusis, and the Temple of Apollo at Bassæ.

Closely connected with the Dorian invasion was the colonisation of the western coasts of Asia Minor, from the Propontis on the north to Lycia on the south. The cities thus founded by them were divided amongst the three great races of the Æolians, Ionians, and Dorians, who at the same time colonised the neighbouring islands. The later Greek colonies were those planted in Italy, Sicily, Gaul, and Spain; Africa, Epirus, Macedonia, and Thracæ. The race that maintained the dominant superiority in Asia was the Ionian; and of its numerous cities Miletus, and afterwards Ephesus, were the most powerful.

The origin of the above colonies is legendary, and it is not until after the first Olympiad that the history of Greek colonization becomes authentic; and first in importance as in period were those established in Sicily and the south of Italy. The earliest Greek settlement in Sicily was founded B.C. 735; and from that period arose a succession of flourishing cities, of which Syracuse and Agrigentum, both Dorian colonies, became the most powerful. The connection of Athens with Sicily, commencing with their espousal of the part of the Ægeans against the Selinuntines, and ending in the total destruction by the Syracusans of two of the most powerful armaments that ever left the shores of Attica, was a blow from which the Athenians never recovered.

Sicily was peculiarly rich in Doric temples. At Agrigentum there were three—two small hexastyles and one of colossal size, being 360 feet long by 174 feet broad, the columns being 61 feet in height. It was commenced B.C. 480, and never finished. Selinus possessed six; the largest of which, an octastyle pseudo-dipteral, almost equalled in size that at Agrigentum. Syracuse and Ægesta each contains a fine example.

The Greek colonies in Italy are of a parallel date with those of Sicily. One, indeed, Cumæ, claims a Eubæan origin so far back as 1050 B.C. These colonies eventually lined the whole southern coast, from Cumæ, on the Tyrrhenian, to Tarentum, on the Ionian Sea, and from their number and importance, procured for the land of their adoption the title of Magna Græcia.

The war between their two most powerful cities, Sybaris and Croton, and the total destruction of the former city, is one of the chief events in the history of Magna Græcia, which rapidly declined in power after the fifth century B.C. owing to the destruction of Sybaris and spread of the warlike Samnites and Lucanians, who, in course of time, deprived the Greek cities of the whole of their inland territory. Among the other Greek cities of eminence, Locri, Rhegium, and Tarentum held a foremost rank. The group of temples at Paestum has for ages delighted the beholder. The oldest of them is a beautiful hexastyle, probably of the fifth century B.C. and of a bold and pure style of architecture; the other two are more modern and less pure, one of them having nine columns in the fronts, the central pillar being meant to correspond with an internal range of pillars supporting the ridge of the roof.

The instances of the Ionic order that we have left to us are scant. The oldest example, probably, was the temple on the Ilissus, found by Stuart in the last stage of ruin, and since entirely swept away. Fortunately its proportions are preserved to serve as the type of Ionic beauty for all ages. This beautiful temple was but 42 feet long by 20 feet broad. In arrangement it was amphiprostyle, tetrastyle;—the shaft of the column 1 foot 9 inches in diameter above the base. Leake supposes it to have been the temple of the statue of Triptolemus; Forchhammer, that of Eucleia. If the latter conjecture be correct, we have in this temple a building erected immediately after the battle of Marathon. Next in date was the little temple of Nike Apteros, which we have before mentioned as recently restored; and last and largest was the Erechtheum, deriving its existence from the great epoch of Athenian art. The temple at Tegea, in Arcadia, built about a century afterwards, according to the description of Pausanias, must have been one of the largest of the style.

It was in Asia Minor, or rather in Ionia, whence it derived its name, that the greatest number of temples of this style were to be found, but what buildings of the kind existed before the Persian invasion, were probably swept away by that disastrous event. The most ancient example of it is that of the temple of Juno, at Samos, which, according to Herodotus, was one of the most stupendous edifices on record, and an account of whose ruins is to be found in the "Ionian Antiquities." The temple of Bacchus, at Teos, which Vitruvius describes as having been originally intended for Doric, but afterwards changed to Ionic, was probably raised after the Persian invasion. Of the temple of Diana, at Ephesus, 425 feet long by 220 feet wide, even the site is matter of dispute. The temples of Apollo Didymæus, near Miletus, built about 376 B.C. and of Minerva Polias, near Priene, dedicated by Alexander of Macedonia, may complete the list of the chief temples of this order in the colonies.

Of the Greek Corinthian order, the works extant in Greece are still more meagre than those of the Ionic, being comprised, at Athens, in the little Choric monument of Lysicrates, and, perhaps, by a still further straining of the point, that of the Horologium of Andronicus Cyrrestes; the magnificent temple of Jupiter Olympus being, in fact, a Roman building. The connection of the term "Corinthian" with this order, seems to rest upon no better foundation than the well-known story of the basket of the Corinthian virgin, converted by the taste of the sculptor, Callimachus, into the beautiful capital that graces the style; but modern knowledge is able to offer a far more natural solution of the difficulty in its unmistakable derivation from the Egyptian capital, in its multiplied variety. Asia originated and Greece improved; for it was the province of the latter gifted people to mould everything they touched into beauty and grace; and in the combination of the Asiatic element with the refinement of the European, we obtain that perfection of symmetry that is not likely to be surpassed.

Sixteen gigantic columns of white marble, standing to the south-east of the Acropolis, mark the site of the temple of Zeus Olympus, at Athens. Between the commencement by Peisistratus, and the termination by Hadrian, a



period of nearly 700 years elapsed. From the terms of admiration used by Dicaearchus, Aristotle, and Livy, we may presume that a considerable progress must have been made by the Peisistratide, before the work was abandoned, and as the Doric order was that in use at the period, the whole of the marble must have been reworked to mould it in the Corinthian form chosen by the architect, Cossutius, upon the resumption of the undertaking. Upon the death of Augustus, B.C. 164, the work was interrupted, and eighty years afterwards some of its columns were transported to Rome, by Sulla, for the use of the Capoline temple. Augustus resumed the building, but it was reserved for Hadrian to complete it, dedicate it, and erect the statue of the God within the cella. This temple was 351 feet in length by 171 feet in breadth; its columns, 120 in number, 6½ feet in diameter and above 60 feet high, and was, doubtless, the most magnificent Corinthian temple of the ancient world. It was decastyle dipteral, having a triple range at either end, and three columns in *nais* at each end of the cella, and its huge masses of masonry must have furnished building materials for the Athenians for centuries afterwards.

From fragments found amongst the Ionian remains of Asia Minor, it is probable that the Corinthian order was used there prior to its introduction into Greece Proper.

In the Ionic temple of Athena Alea, at Tegea, in Arcadia, built by the architect and sculptor Scopos, the hypæthral cella was surrounded by two ranks of Doric columns, surmounted by others of the Corinthian order.

Before quitting the subject of the columnar architecture of Greece, we may just allude to that beautiful substitution of the human figure for the column known as Caryatides, which attains its perfection in the southern portico or enclosure of the Erechtheum. The well-known tale of the treachery of Caria in aiding the Persians after the battle of Thermopylae, and the consequent employment of the figures of Carian women by Proxicles and other Athenian sculptors in columnar decoration, may have had its foundation in fact; but even there again Egypt had rudely foreshadowed the same idea in some of its internal colonnades. Another and a beautiful variety of the same decoration were the Caryatide (*καρυατίδες*), or basket-bearers, which in after times became so universally adopted. These had their origin in the Athenian practice of employing virgins to carry to the altar (generally upon their heads), the *κάρτος*, or carystrum, being the basket containing the cake, chaplet of flowers, knife, and frankincense, when a sacrifice was to be made. In the Panathenæa, the Dionysia, and other public festivals, two virgins of the first Athenian families were appointed for the purpose,—

"Ille forte die castæ de more puellæ,  
Vertice supposit, festus in faculis aras,  
Pura corollis portabant sacra carystris."

With the examples we have enumerated, we may conclude our remarks upon the Greek orders. Of the Choric monument of Thrasylus, whose well-known form has been applied to modern fronts, *esque ad nunciam*, we need say nothing.

The Panathenæic Stadium (*τὸ στάδιον τῶν παναθηναίων*), was situate on the south side of the Ilissus, and as Leake observes, is at once recognised by its existing remains, consisting of two parallel walls, partly natural, partly composed of rough substruction, connected at the further end by a thick wall more indebted to art for its composition, and which formed the semi-circular extremity essential to a stadium. It is usually ascribed to Lycurgus, but it is probable he only completed it by constructing a podium, and levelling the bed of the arena. The spectators sat, however, upon the bare turf for five centuries afterwards, till the seats were covered, by Herodes Atticus, with Pentelic marble, as eulogised by Pausanias. These seats have disappeared, and a grass-grown hollow now marks the spot. Leake conjectures it could accommodate 40,000 persons, and as many more on the slopes above. The Stadium was originally intended for the foot-race, but other contests were carried on in it as well. Horse-races were confined to the Hippodrome (*ἵπποδρόμος*), a

building of similar form, only longer. In form the Stadium was an oblong area, terminated at one end by a straight line, at the other, by a semicircle; and often formed part of the buildings of the gymnasium; but sometimes stood by itself, as at Athens. Difference in size in these buildings applied only to the relative amount of accommodation for the public, the length of the course, 680 Greek feet, being fixed.

The establishment by Perichhammer, of the fact of there being only one Agora instead of two, as used to be supposed, has cleared away a difficulty in Athenian topography. After weighing the testimony of numerous Greek authors, the conclusion arrived at is that it stood in the valley between the Acropolis, the Areopagus, the Pnyx, and the Museum. With regard to the Doric portico described by Strabo as the entrance of the new Agora, a clearer understanding of the matter assigns it to the temple of Athena Archegetis, as shown in the dedication on the architrave, and refers its erection to the late date of Augustus, as indeed its debased proportions sufficiently indicate.

An important feature in the cities of Greece was the stoa, or portico. Its definition may be given as a covered walk, the roof being supported by columns on one or both sides, and it was either attached to a temple or other public building, or built independent of any other edifice. Those attached to temples were either constructed only in front of them, or surrounded the building, and such were intended for the converse and meeting of the worshippers at such particular temple. Independent of these, however, most of the Greek cities had large detached porticos, some of which public places of resort were not only built in a magnificent style, but were adorned with paintings and sculpture of the highest class of art that the period produced. Of this kind were the *Pœcile* (*στοὰ πœκίλη*) and *στοὰ δædalios*, at Athens, and the *στοὰ nepesich*, at Sparta.

The Stoa Pœcile was the one that gave the name to the Stoic philosophers. It had three walls covered with paintings; the middle wall had two representing scenes from the mythic age, and one at each end containing paintings from Athenian history. The subjects of these paintings, were the battle of Ocnor, between the Athenians and Lacedæmonians; the Athenians, under Theseus, fighting against the Amazons; an assembly of Greek chiefs, after the capture of Troy, deliberating respecting the violation of Cassandra by Ajax; and the battle of Marathon, painted by Polygnotus, Micon, and Panæmus. Painting in Greece was developed later than sculpture. The materials used were water-colours or wax. Oil-colour appears to have been unknown. For a long period the art was confined to colouring statues and architecture, of which traces are found in the ruins mentioned. About the time of Peisistratus, Cimon, or Cleonæ, introduced great improvements in the art, and prepared the way for its ultimate development.

In the era of Cimon and Pericles, the art attained its full development. One of the first of this period was Polygnotus of Thasos, whose improvements upon his predecessors formed an epoch in the art, the old stiffness of countenance and rigidity of drapery giving way to beauty and flowing outline. In Athens he assisted in adorning the temple of Theseus and Pœcile Stoa, and at Delphi the Lesche of the Ciliarians. Panæmus decorated the wall round the statue of Jupiter, at Elis, with allegorical paintings. Apollodorus, of Athens, was the first who brought light and shade, and *chiaroscuro*, to any degree of perfection. Pliny said of him, "Neque ante omnia tabula ullius ostenditur quæ teneat oculos." Zeuxis was equally famed for his talent and his vanity: the story of his appearance at the Olympic Games in a mantle embroidered with his name in gold is cited in proof of it. Of his numerous works, he considered the painting of Helen the finest, and his perpetual exhibition of his masterpiece for money, procured for it the title of "Helen the Courtesan." He was a great master of colour, and excelled in the art of illusion as instanced in his trial of skill with his rival Parrhasius, although defeated in the contest. Parrhasius was a native of Ephesus, but exercised his art at Athens, and, according to Pliny, was the first to observe rules of accu-

rate symmetry in portraying the figure. Of a later period were Timanthes, Pamphilus, and Eupompus: the latter so exalted the art in his native Sicyon, that the old term *Heladan* became divided into the Sicyonian and Attic schools, whilst the Asiatic school was termed the Ionian.

The above were the precursors of Apelles and Protogenes, contemporaries in the art in the time of Alexander, of the first of whom we need only say, that by the general consent of the ancients, he ranked as the first of painters; his name being by the later Latin poets used as a synonyme for the art itself.

Thus have we roughly traced the history and progress in Art, of that portion of the Hellenic roof, that most preserved in its descendants the ancient germ of the Pelasgi.

"Not less in Italy than in Greece," says Bulwer, "the parents of an imperishable tongue, and, in part, the progenitors of a glorious race, we may still find the dim track of their existence wherever the classic civilisation flourished—the classic genius breathed. If in the Latin, if in the Grecian tongue, are yet the indelible traces of the language of the Pelasgi; the literature of the ancient, almost of the modern world is their true descendant."

The world is still taught from Athens.

#### ON THE USE OF ANCIENT ARCHITECTURAL EXAMPLES.\*

HOWEVER freely I may adopt, in my present paper, the remarks and observations of others, my intention is to restrict myself, in their illustration, to the examples with which I am personally acquainted; and therefore I have little to say on Greek architecture. Not having travelled in Greece, I have never seen its best specimens; and although when I saw the Temple of Neptune at Paestum I thought it the noblest structure I had ever beheld, yet I can well conceive the Parthenon, even in its present state, and despoiled of all its beauties of sculpture, to be still grander. I do not suppose it possible to convey by a drawing, model, or imitation, the effect produced on the mind of the spectator by the severe simplicity of a Greek temple; nor would it be easy to note all the subtle and delicate refinements which contribute to this effect. I remember that at Paestum I was struck with the massiveness and extreme plainness of the architrave, and the manner in which it was set upon the pillar; also the boldness of the cornice, and the deep shadow it cast over the whole of the frieze, even at a rather early hour of the day. Then the line of shadow over the upper part of the fluted column appeared to me extremely beautiful. The shape of the column, or part of the capital immediately below the square abacus, is doubtless a necessary element in the composition. The triforium range of smaller pillars gave me rather a picturesque bit for sketching, but must, I think, be faulty in principle. It involves a construction too slight in appearance for an edifice in other respects of so great solidity and massiveness, as well as openings of an unpleasant shape. It may, however, have been the only way of meeting a difficulty.

We do not want to revive Greek temples, nor, in all probability, could we revive them. If they were necessary to us, the power, no doubt, would sooner or later be developed; but there is much to render their form inappropriate for a church or public building.

To attempt anything like a pure reproduction of the Greek in domestic architecture would, I fear, give rise to a tame and formal style, without much meaning or interest; one no doubt very different, in this respect, from that of the ancients. As far as we are acquainted with the Greek style, we can safely rely on its rules and principles as grounded on a true feeling of beauty in form; but in our present state of knowledge we could not adopt it without sacrificing much that we can ill spare.

I do not know what attempts have been made, or with what success, to combine the genuine Greek orders with the arch. It has sometimes struck me that even the pure Doric column might, by a modification of the enta-

\* Continuation of paper read at the Architectural Exhibition, by the Rev J. L. Pett. See p. 47, ante.



blature, be adapted to the semicylindrical vault.

The introduction of the arch, from whatever quarter it may have been borrowed, is what gives it life and energy to Roman architecture. I believe it is not only in a mechanical sense that "the arch never sleeps;" for it certainly infuses spirit into a building that, but for its use, would have been tame and lifeless. A square-headed door or window, in an architectural composition of any importance, mostly requires some ornament: an arched one may be left comparatively plain. The simplest and most natural arrangement of architectural lines will be vertical and horizontal; and in all good architecture these must predominate. But if they exclude every other, it is easy to conceive that the effect will be most formal and monotonous; hence straight oblique lines have their value. A Greek temple requires its pediment as a contrast to its predominant lines; and the curved lines which present themselves in its composition, few and subordinate as they are, and in some cases scarcely noticed, may for this purpose be found to be indispensable.

It is not merely that a curved line is more suggestive of life than a straight line. The contrast is the object. Look at a sky covered with clouds of the most varied and indeterminate forms: the straight line of a sunbeam gives it at once a life and force it might not otherwise display. A range of the boldest mountains is animated by the introduction of a flat valley, or small expanse of water. It is by such combinations and contrasts that the imagination is kept awake; and many a scene, the elements of which are of the grandest character, fails to interest us from the want of contrast.

The fault which is most justly chargeable on the Roman style, is the incongruity between its constructive and decorative features. The construction is arcuated, and the decoration exhibits the colonnade borrowed from the Greeks; and yet we cannot say that the colonnade altogether misrepresents the construction. The greater part of most buildings intended for use is on a system of vertical pressure and support; and, therefore, a columnar decoration is quite incongruous, even although the principal openings are arches. The mediæval arcade, so profusely used as a mere ornament, is in fact, liable to the same charge of incongruity, when it adorns, as it most frequently does, a purely vertical piece of construction; though we never think of condemning its use, because it repeats the usual forms of the opening. Now I take it that the highest order of architectural ornament is that which harmonises with the construction, without repeating or producing it. It may suggest construction, it does not constantly obtrude it on the eye. The frieze of a Doric entablature is not filled up with a miniature repetition of the range of columns below, but with a certain kind of ornament perfectly harmonising with them, and suggesting at the same time the real construction. The horizontal strings and cornices of Roman work always deserve attention, whether they be complicated and elaborate, or plain and simple: these which mark the spring of the arch are often extremely bold and effective.

Last year I expressed an opinion that many our railway-sheds might be found to contain the elements of a very grand style of architecture. I did not know at the time that there existed an ancient building which exhibits the same elements, disposed nearly in the same manner. The basilica at Trèves, which is given by Mr. Fergusson in his Hand-book, has essentially the same features with the sheds to which I then alluded. It is a large brick building; and, both from its size and position, it is one of the most conspicuous objects in the town. I hesitated to say I could not see the interior, as, under a course of restoration, and entrance of strangers is strictly prohibited till such time as the works are complete, when it will be opened as a church. The interior is, however, given by Mr. Fergusson, and seems to be perfectly plain, and altogether in unison with the exterior: the decoration, as far as I could perceive from the glimpses through the windows, chiefly consist of painting. All marks of antiquity seem to be as carefully obliterated as possible; and a very meagre cornice gives the

building, as seen from a distance, as commonplace a look as can easily be conceived, and makes it anything but an attractive object to the sketcher. Had this part been judiciously designed, the effect would have been extremely grand. The form is very simple; an oblong rectangular parallelogram, with an apse at one end. The sides have a range of lofty round-headed arches of one order, each arch containing two round-headed windows placed one above the other. The same arrangement is continued round the apse. According to Mr. Fergusson, the building is 90 feet in width internally, and double that length; the height of the walls about 100 feet. You will see at once what an excellent model it is for a church, and I suppose we ought not to regret that it is turned into one; still I confess I am enough of an antiquary to wish it had merely been preserved as a model to work from, instead of being actually put into a condition itself for the purpose. However, the main features seem to be still untouched, and we cannot fail to be struck with the simplicity and grandeur of the original design. It was probably finished with some kind of cornice: if this was deep, rich, and bold in its projection, such as we mostly find in Roman work, the effect must have been very fine. Some ideas might have been taken even from the neighbouring monument of Igél, which, among other merits, has some strings and cornices of excellent character.

The great width of this edifice, and its double tier of windows, naturally suggest the use of galleries, which might either be made an important architectural feature, or treated as fittings, and made subordinate to the original design. In either case they ought to add to the beauty of the whole rather than to detract from it; indeed, we can hardly conceive such a building to be perfect without them. If we intend our new churches to accommodate a large congregation, we ought surely to look with favour upon plans and modes of building which would admit the addition of the gallery as a positive improvement, instead of rejecting it as a deformity.

The ancient work that is left of this basilica positively presents no ornament at all,—nothing but mere construction: perhaps some persons would deny it the title of an architectural work at all. Yet it is evident from its composition and proportions that beauty, as well as use, was consulted; and if there is no ornament, the design by no means excludes all ornament. Supposing the present face of brickwork to remain, it is easy to see how it might have been diversified either by string courses, mouldings at the edges of the orders, architraves, discs of coloured marble, or slabs of white marble, or stone sculptured,—and all this, without any admixture of the Greek columnar style. I shall always protest against the confounding of architecture with sculpture. The two arts are totally different, and have an independent existence. If I had ever doubted this, I should have been convinced by another example in the same city, the Porta Nigra, a noble architectural work, but so far from having any sculpture, it is devoid even of the commonest mouldings, all the capitals and cornices being simply blocked out: you will neither notice nor suspect this till you examine it pretty closely. But at the same time I will always admit that the character of a building may be ennobled, and its interest increased, by fine sculpture; and if we are able, without detriment to the building, to turn the labour and cost that would have been expended on mere mouldings or conventional ornament, to the production of a higher style of work, occupying, indeed, a smaller space in the fabric, yet equally contributing to its adornment, and equally subservient to the effect we wish to obtain; we may be sure we have got a style, or plan, worth some consideration, and the development of which is likely to lead to great excellence. So that the very plainness and absence of architectural ornament (not of architectural beauty), in the edifice we have been noticing, may prove to be one of the great recommendations of the style to which it belongs. I cannot help thinking that Gothic exacts too much in the way of architectural and conventional decoration, to leave room for the free expansion of sculptural

art. You may, indeed, sacrifice the former to the latter, but as you do so, you weaken the genuine characteristics of the Gothic, and partially adopt those of the classic.

The Italian Gothic does this, and is an extremely beautiful style. From its refinement it would harmonise better with the present age than the more decided northern Gothic. It is content with a less generally diffused system of ornament, and more favourable to the introduction of works of the highest art. And it presents us with specimens that might be studied to great advantage by the architect who consults usefulness in his designs. Such churches as St. Dominico, in Sienna, and the Eremitani, in Padua, which, like the basilica of Trèves, contain a wide area under a single roof, may be regarded as valuable models. But the style appears to offer us little or nothing that cannot be obtained in the Roman, or some style immediately derived from it, with more unity of design.

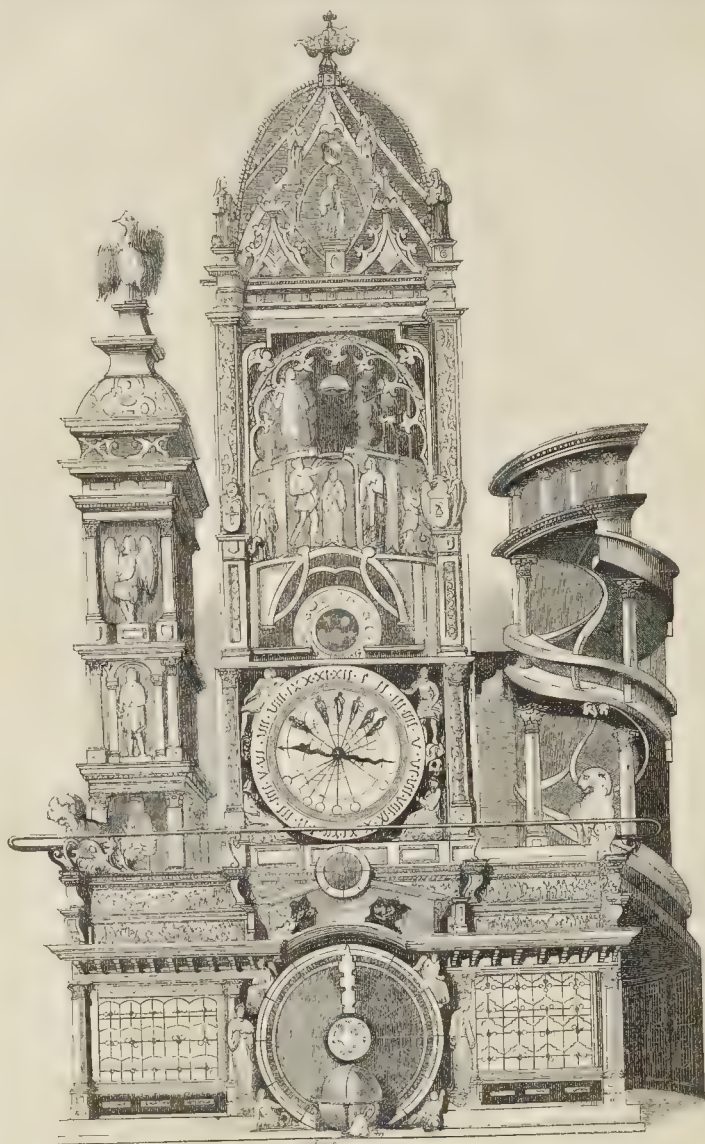
We will now take another ancient example of great simplicity (at least in its present state), and consider whether it may not be turned to account as a model,—the hall or chamber of Roman architecture which is entered from the Hotel de Cluny, in Paris: this contains a nearly square area, of about 38 feet by 36 feet, to three sides of which are attached oblong rectangular spaces, the longer side being that of the central area, and the shorter one about 15 feet.\* The whole is covered by two cylindrical vaults crossing each other; consequently the roof of the central part is a cross vaulting of nearly equal cells, such as we see in large German Romanesque churches. The interior arrangement, it is clear, affords good abutment to the vault in three directions. I am unable to say whether there are any corresponding abutments attached to the fourth side, which has not the oblong recess which the other ones have, but consists of a wall, in which are three small arched recesses, the central one apsidal, probably not affecting the external outline. But the weight and thickness of the wall, aided by the tenacity of Roman mortar, may be sufficient. The walls, up to the spring of the vaulting, seem about 30 feet high. Here again there is little or no ornament remaining, the construction fully making up for the want of any. The effect of the interior may be somewhat heightened by the roughness of its present condition; still, even if it were thoroughly repaired and brought to a smooth surface, its aspect could not fail of striking the spectator. It actually requires no more ornament than it now has, but still it would give free scope for artistic decoration of the highest order. Now here is at once an excellent design for a church, in which no room would be lost, and every member of the congregation could both see and hear the minister. Galleries might be introduced without causing any disfigurement, and every ritual arrangement observed that could possibly be required. From the way in which this specimen is surrounded and built up against with houses, it is impossible to judge of the exterior: in fact, the room was only part of a large range, such as is exhibited by the baths of Diocletian, and those of Caracalla, in Rome. But if we adopted the model, it could hardly be found very difficult to devise suitable elevations.†

#### ASTROLOGICAL CLOCK IN STRASBURG CATHEDRAL.

In connection with the notes of early clocks, given last week, our readers may like to see the shape which is presented by a celebrated clock made in 1573, and set up in Strasburg Cathedral, where many of them have doubtless seen it, in its present form. Lacroix, in his admirable book on the "Arts of the Middle Ages," gives some particulars of it. He calls it the tower of wonders. Angelo Rocca, he continues, who wrote at the commencement of the seventeenth century, eulogizes it highly. It was placed on the summit of a tower inside the cathedral. A moveable sphere, on which were marked the planets, the constellations, &c. was the principal piece. It accomplished a rotation in

\* It forms, in fact, the centre and three limbs of a Greek cross.  
† To be continued.





THE MECHANICAL CLOCK IN STRASBURG CATHEDRAL.

365 days. On each side and above the dial of the clock were represented, in the shape of personages and allegorical figures, the principal *fetes* of the year, and the solemnities of the church. Other dials, distributed symmetrically over the face of the tower, marked the days of the week, the period of the month, the signs of the zodiac, the age of the moon, the rising and setting of the sun. Each hour two angels sounded a trumpet, and when their concert was over, the clock struck the hour, and then a cock clapped his wings with noise, and crowed twice. There were various automata, too, executed with much art.

Rocca says the construction of this wonderful machine was attributed to Nicholas Copernicus, and adds, that when this distinguished mathematician had finished his clock, the city autho-

rities caused his eyes to be put out, in order that he might not make one similar for another place. It is surprising that an exact and judicious writer like Rocca should have propagated such an absurd tradition. In the first place, Copernicus was not the maker of the Strasburg clock: it is known that it was executed by Conrad Dasypodius, in 1573, who himself published a complete description of it, wherein he showed all the difficulties he had surmounted. In reading his book, one cannot but admire the genius of the man, who did not fear to undertake, and had the good fortune to carry out, successfully, so great a work, the glory of Strasburg, as Lacroix calls it, and the ornament of the magnificent cathedral of that city;—in a scientific point of view we suppose he means.

#### ON THE RUINS OF HEIDELBERG. THE RENAISSANCE IN GERMANY.\*

LAST session I had the honour of reading a paper describing some of the principal Chateaux of the Renaissance period in France,† and have now to bring under your notice the well-known Chateau of Heidelberg, a work of the same period in Germany. Besides the Belvedere on the Hradschin, at Prague, built in the latter half of the sixteenth century; the portion of the Townhall at Cologne, 1569-1571; and the Townhalls of Augsburg and Nuremberg, both of the beginning of the seventeenth cen-

\* The following is a portion of the paper read by Mr. F. Anson at the Royal Institute of British Architects, on the 12th ultimo, as already mentioned. The more minute descriptions of the ruins would be uninteresting without views.

† See the *Builder*, vol. xiv. page 14.



tury.—I am not aware whether that country contains many palatial monuments of that time and character; but if, as I believe, it is not so rich as France in this respect, this one monument is so fine and so well preserved, as to afford an excellent opportunity of comparing it with buildings of similar character and the same age in that or other countries. As a picturesque ruin Heidelberg is highly appreciated by the many tourists on the Rhine. Its beautiful situation, its perfect condition as a ruin, its rich deep tone of colour, its aspect embowered in thick woods, the towering background of wooded hills, its craggy bold base of rock, the quaint forms of the town of Heidelberg stretched out below, and the rich landscape which extends beyond westward to the valley of the Rhine, traversed by the noble river Neckar, all unite to excite in the mind those sentiments of romance which we experience in looking back to what has been, in contemplating the ruined monuments of our forefathers.

The landscape over which the eye wanders is classic ground, for the distance beyond the Rhine includes the rich flat alluvial plain in which the formerly important towns of Spire and Worms are situated. It is a district immortalised in the Niebelungen Lied, and the Minnesinger called it Wonnegau, or the Land of Delight; another instance of the very different manner in which beauty of scenery was understood in medieval times. As to the ruin of Heidelberg itself, there can, however, be no question; for certainly I never in any place saw so many artists expressing their appreciation of the romantic interest of a locality, as might be fairly inferred from the numbers who were seeking to record on their tablets the beautiful effects of this noble ruin.

The building is still in its general features very perfect, and although quite a ruin, is in some parts so well preserved that there is enough to indicate its former well-studied magnificence. It is yet so much of a ruin, and so indicates the rude agencies of war or time by which it has been partially destroyed, as to furnish abundant scope to the imagination; and, in its mingled groups of ruined strength and graceful beauty, to afford the most picturesque combination of form, light, and colour.

The carriage approach is by a winding road on the south side of the building. There were formerly outposts, and two fortified outer courts to pass before reaching the gate. The entrance is over a narrow bridge through a gateway, in which the portcullis still remains suspended, into the inner court. But the more interesting approach is by a steep and picturesque path through the hanging wood, and thence through a subterranean part of the building to the north terrace, from which a partial view of the buildings and a first impression of their characteristic architecture are obtained.

The Castle of Heidelberg was built by the ancestors of the present reigning family in Bavaria. The first foundation of a castle at or near the locality dates back earlier than the fourteenth century, and down to 1801 it was still held by the descendants of the family by whom it was built; but at the peace of Lunéville it, together with the Palatinate of the Neckar, was incorporated with the Grand Duchy of Baden. It is recorded that a certain Conrad von Hohenstauffen, brother-in-law of the Emperor Barbarossa, had his domicile near the site of the present castle in 1149: of this, however, all material trace has ceased to exist, it having been entirely destroyed, as its more modern successor has been ruined, by lightning firing a powder magazine, which it contained in 1537. The foundation of the present building is attributed to Rudolph I. Count Palatine, who commenced it in 1319, and whose son continued the works. In 1329, at the treaty of Pavia, the building is first conspicuously mentioned. In 1346 its then owner added a chapel, since destroyed: he also formed the fine platform called the Galerie du Château, cut out of the hillside towards the town. Robert Count Palatine, who became emperor of Germany in 1400, enlarged the building; but the addition necessary to accommodate the court of the emperor did not notably increase the castle palace of a Count palatine. In 1415 it became the prison of the Pope John XXII. It was further

enlarged by Count Louis III. some time before his decease in 1436. Louis V. between 1508 and 1533, made the important addition of the great round tower, and the still more important one of the great terrace, which rises to a very great height on the precipitous side of the mountain. Frederick II. his brother, who succeeded him in 1544, built more than any of his predecessors, and completed the works still left imperfect. The walls which united the square tower with the tower of Frederick the Victorious, were raised and thickened in 1545; and, following his brother's example, but with much more magnificence, both within and without the old palace, he continued the stone facings to the older parts. The round tower which Louis V. had erected near the chapel of Jetta was improved by him, and several upper stories added. In 1554 a large bell was placed in the tower, after which it was called the Tower of the Bell until its ruin took place. It then continued to receive additions from its successive owners until the seventeenth century, after which it was several times devastated during the thirty years' war, 1620—1648, and nearly ruined in the war of Louis XIV. 1689—1697; but it was restored after each of these periods, and fell ultimately into its present state of ruin, not from the effects of war, but from one of those visitations of Providence over which man has no control. On the 23rd of June, 1760, it was struck by lightning, and for the most part destroyed, and since that time it has never been restored.

The west façade, that next the court, is a very remarkable work, and I know of no piece of Palatial architecture which surpasses it, or even equals it in richness of decoration, notwithstanding the ruin to which it has been exposed. So much as remains is still in a very fine state. The masonry is well and solidly executed, and the stone remarkably perfect, the delicately sculptured decorations being even now in a good state of preservation.

The general proportions of this façade are very satisfactory, as well as the grouping of the windows, and the horizontal divisions of the string courses and cornices: it is placed on an elevated basement, and the whole is on a scale sufficiently large to make it a noble and imposing front.

The details of the pilasters, cornices, and dressings to the windows, show a wide departure from classic proportions, and are not happy, but there is an exuberant richness of decoration conceived and executed in the very best manner, which more than redeems these defects, and is worthy to rank with the best work of the same time in Italy. As a very near approximation in Italian work, I may refer to a chimney-piece forming part of the Souloges collection now in this country, of about the same date. I do not, however, claim for it all the grace and delicacy of some of the highest class work of that country, but it is very masterly, not only in the arabesque, but in the supporters and other figure decorations of the armorial bearings, both animal and human, nude and draped. The central doorway, once approached by a fine flight of steps, with caryatides supporting well-proportioned entablatures, and remarkably rich, effective, and skilfully treated armorial bearings above the door, is a very remarkable and artistic work.

The new buildings of Frederick II. were built on the foundations of a much earlier building, and intended at first for the library: they were burnt in the war of 1689, restored by Charles Philip in 1716, and destroyed in 1764; but since then they have been in great part refitted, and are now used partly as a habitation and partly as a museum, containing some relics connected with the castle and its founders. That part of the building which has not been restored is altogether in a state of ruin: the exterior fronts are plain, like all the rest of the building, but there is one fine projecting bay window on the east, which gives much character to this part of the building. The inferior façade is, I consider, remarkably elegant: it contains an open arcade, the lower part composed of two very elegant arches, formed of portions of parabolas, with a double story of arcades above, of four arches on each story. The spandrels between the lower arches are decorated with very finely-carved

emblazoned shields surrounded with wreaths of foliage. The centre shield is dated 1549, and on the riband which surrounds it are the letters D. C. V. said to be the initials of the sculptor. On the left hand side are the armorial bearings and initials of the Count Palatine Frederick; and on the other the arms and initials of the electress, Dorothea, Princess of Denmark. Above this there formerly existed another arcade, no trace of which remains.

The Tun Room, part of the palace of Frederick V. was commenced by Frederick IV. between the years 1601 and 1608, and finished by his son and successor, Frederick V. from 1610 to 1619, and burnt in the Orleans war in 1689. Of the celebrated Tun it is not necessary here to speak: its wooden framework is handsomely constructed, but its dimensions are, I believe, much surpassed by some of the wooden vats used in the London breweries.

The gallery of the chateau was originally built in 1346, and re-modelled in 1601-1607, when the palace of Frederick IV. was built, but the balustrade and corner turrets are of later date. This terrace, which is the first part of the building reached in ascending from the town by the footway, already mentioned, is in itself a very noble work: the imposing north front of the castle bounds it on one side, and on the other there is a most charming view, extending over the valley of the Neckar, and the town of Heidelberg almost immediately below.

I feel it right to observe that I have availed myself of the description published by Monsieur de Gramberg for all the details I have been enabled to offer, and that the prints on the walls form part of a work published by him. This gentleman, many years ago, seeing how totally the building was neglected, constituted himself the guardian of the place: he has collected a very respectable museum; and his unwearied attention has done much to arrest the further progress of decay.\*

In this building there is certainly much to remind us of the style commonly called Elizabethan, which prevailed in this country from the time when Longleat was built, until that in which the works of Inigo Jones, and especially his façade of the banquetting-house at Whitehall, in 1619, opened the way to a new era in architecture. There is not an unfrequent application of the strap ornament and the flat jointed band, which are applied as decorations to the pilasters, particularly in late buildings of the beginning of the seventeenth century. There is also the same somewhat exaggerated entasis of the pilaster, but all the features are much more boldly marked than with us: the strap ornament, for example, is made to project in bold masses at its extremities, so as to produce great variety of light and shade: the flat-jointed bands are not so small or complicated, nor so much like panel-work, as in our specimens at Holland House or Dorton House, 1596.

The entasis of the pilaster assumes a remarkable boldness, and gives great vigour to the Doric order used in the lower story of the north front in the building of Frederick IV. The same feature I have observed in one of the buildings at Strasburg, but nowhere else so effectively carried out. The use of the reversed column or pilaster is comparatively rare in the German work, and only used in very subordinate features. The niche with the peculiar shell form of the head, which is also not uncommon in French buildings of same style, takes the place of the flat arched panel with which chiefly the interior of our Elizabethan is frequently decorated.

The departure from the previous national type in France is less decided in outline and general form than with us—for the French retained the lofty roofs of the late Gothic, and the castle of Heidelberg has its stepped and decorated gables, as all the old houses had from Vienna to Antwerp, while the English adopted a substitute for the Italian balustrade and cornice, for which it must, however, be admitted that the flat roofs and embattled parapets of our later Gothic had prepared the way.

\* This enthusiastic artist is mentioned by Bulwer, in his 'Pilgrims of the Rhine.' Some years ago, rambling with M. Gramberg over the chateau, he described graphically the gradual increase of interest which the ruins had inspired. He lived amongst them for some years during which a visit from a stranger was an event.—Ed.



There is throughout these buildings no want of evidence of a very rude departure from the proportions and rules of classical architecture, or it might, perhaps, be more properly said, that classical models were crudely and ill-applied. The facade of Otto Henry, next the Inner Court, although full of beautiful work, is especially full of such defects: the attenuated proportions of the Ionic pilaster—the disproportionate height of the window pediments, and the setting back of the moulded head behind the horizontal cornice below, are all crudities which show but a very imperfect acquaintance with the Italian types of the age, or at least an imperfect power of applying them; but, apart from these defects, the general balance of parts is very happy, and the decoration generally a very good taste.

The ornament, indeed, of this period appears to me the most perfect which has ever been used for architectural purposes; being sufficiently conventional to be used as architectural decoration, and yet sufficiently approaching to natural forms to suggest the vigour and movement of life, the flow even of sap in the veins of the plants, and more developed life in the lizards and birds which fill up the blank spaces in the leafage.

The finest specimens of this kind of decoration are certainly to be found in Italian work, of which there are many beautiful specimens in the Renaissance Court of the Crystal Palace, the most perfect in my judgment, in matter of ornament, being in the two doors in the screen next the central nave: the case of one is copied from a doorway presented to the Doge Andrea Doria by the Senate of Genoa, and supposed to be the work of Pierino del Vaga, who was engaged with Raffaello on the Loggie of the Vatican, which work he left in 1527.

The decoration which, however, I would more particularly mention, is that of a small ornament inserted next the pilaster of the door from the church of Santa Maria dei Miracoli, at Venice it is perfect of its kind, and entirely free from the less happy compositions of the same time, in which, as in the decoration in the Vatican, satyrs, cupids, and monsters, supported on impossible bases, balance each other on opposite sides by a stiff central stem. In the frame of one of these doors is a fine frieze from the tomb of the Cardinal d'Amboise, at Rouen, of the date of 1520-26: it is not a work of the same delicacy as the Italian one just referred to, but it displays great beauty and masterly workmanship.

The works I have been referring to at Heidelberg are, as a whole, worthy to be classed with any of the Renaissance school. They have well-marked individuality of character, fine taste in ornamentation, and are univalued in the adoption of heraldic decorations. So far as I know, they are superior to any we have in England, fit to stand in equal rank with the best works of France, and not unworthy examples of the style which grew up in that great cradle of the arts in modern times—Italy.

At the close of the paper,

Mr. Digby Wyatt observed, that considering the early period at which German artists went to Italy to study, and carried the Tuscan style into that country, it was remarkable that, after their return home, Germany should have been the last to adopt the features of the Renaissance style in architecture, and then even to a much less extent structurally than any other country in Europe. The principal artists in the Renaissance style in Germany were the family of Fischer, both Peter Fischer and his sons having studied in Italy; and it was through the examples at Nuremberg and in its neighbourhood that the Renaissance style was introduced into Germany. These, however, were only examples of the details of the style. Mr. L'Amson had enumerated all the principal examples in Germany, and not in one of these were the revived antique orders carried out in a very vitiated style, the columns throughout resembling a row of very thin gentlemen placed close together. In Heidelberg, Castle there was very little attempt at a regular order. It was further some what curious that at the very time Peter Fischer was executing his best Renaissance work, some of his contemporaries and imitators continued to work in the Gothic style, and the wood engravings of the period showed the disinclination of the Germans to adopt a pure Renaissance character. The arts of engraving on copper plates and armour, as

well as of damascening, were transferred from Florence, Milan, Venice, Ferrara, and other cities of the north of Italy, to Augsburg and Nuremberg. A picturesque style was subsequently adopted which had not inaptly been designated "the Rubens;" for in it wood, stone, brick, and plaster were alike made to assume that roundness of form allied to a general heaviness of proportion frequently to be observed in the paintings of the great Sir Peter Paul. Under these circumstances it was peculiarly interesting to dwell upon one of the very few monuments of Germany presenting the characteristics of Renaissance art.

Mr. Scoles said he quite concurred in the opinion that the Renaissance style was never acclimated in Germany, the detail being much inferior in delicacy to that of France. Heikburg, however, must always be admired for the beauty of its situation, its palatial grandeur, and its picturesque effects.

The chairman, Mr. Scott, said that he had not studied much the interesting question of the different ways in which the revival of classical architecture showed itself in different forms and outlines of buildings had never departed much from the classical model. At a very early period, buildings assumed an absolutely classical form, but the details remained until long afterwards of a Gothic character. North of the Alps the contrary was the case. There, the details were meant to be classical, whilst the general form was farther removed than ever from the classical type, as if the country was resisting with all its might the adoption of the new style. He differed somewhat from the opinion of Mr. Wyatt, that the Renaissance style had not been common in Germany. In the street architecture of that country, the style prevailed to an enormous extent. A profusion of gables and other forms, of every shape that imagination could devise, and as far from the classical outline as could be conceived, distinguished these German houses. The Town-hall of Bremen was especially remarkable for its immense towering gables, and the intricate forms of the detail. Every imaginable fantasy of ornament was introduced, and there was not a foot of plain surface throughout. At Hamburg and other towns the same features were found, proving, as he thought, that the style has pervaded the country to a great extent, and that, instead of being poor in Renaissance art, Germany was full of the most gorgeous specimens of it, although the detail was not equal to that of France and Italy.

Mr. Wyatt said, that he ought to have made the distinction between the kind of art produced by the struggle with Gothic architecture for the admission of the Renaissance, and that of the period when the antique was imitated with exactitude. The majority of the buildings referred to by Mr. Scott were based as to their main structure upon ordinary Medieval practice, and as to their details, which were of a debased cinque-cento character, upon the precedents for the design of ornaments of every kind known as the "Petits Maitres," such as the Italians, the Hoppers, Theodor de Brix, Virgil Solis, Altdorfer, Aldegrever, and others. These were the class of men who multiplied patterns of application for the Renaissance forms to every branch of art and industry throughout Europe, during the end of the sixteenth century, and the whole of the seventeenth. He believed, therefore, he was correct in saying that there was exceedingly little pure Renaissance architecture in Germany. The gables and other features referred to by Mr. Scott belonged to what he (Mr. Wyatt) had termed the Rubens' style, the houses themselves being mostly of lath and plaster, and the designs founded upon the school of facile drawing which arose from the engravings already mentioned.

#### THE APPLICATION OF GOTHIC ARCHITECTURE TO CIVIL AND DOMESTIC PURPOSES.

##### ARCHITECTURAL EXHIBITION.

On Tuesday evening, the 20th January, the Rev. Thomas Hugo, M.A. F.S.A. delivered a lecture "On the Application of Gothic Architecture to Civil and Domestic Purposes," at the Society's rooms in Suffolk-street.

After some words of apology that a more amateur should address a professional audience on the peculiar subject of their study, the lecturer proceeded to state the question which he intended to discuss:—

"First, let me explain what I understand by the terms of the subject itself,—indeed, the only meaning which, to such an audience as this, could be at all interesting. I take it to mean, not that Gothic architecture is applicable to civil and domestic purposes, but whether, and how far, it is applicable,—and not so much the mode as the question of its applicability. I do not understand it as requiring me to speak of the

production of artistic details, or to endeavour to teach any of my audience the way to construct the parts either of a Gothic town-hall or of a Gothic dwelling-house. The practical application of the art is a professional subject not only entirely beyond my powers, but, I presume, unnecessary and out of place amid the present auditory. Rather would I apply myself to that *quæstio vexata*, practically put, and practically decided about, day by day,—a question which an architect asks an employer, and an employer asks his architect,—a question on the issue of which, especially in communities like our own, the most important results are depending,—how far, and in what way, may Gothic architecture be applied to modern requirements? Shall the edifice, whatever it may be, be Gothic or not? Shall we have a Gothic city,—a Gothic street,—a Gothic building? or is there some other style which is preferable, and more worthy of acceptance? The answer to these queries, I repeat, is influencing, day by day, the face of our country. And, as there is a wondrous similitude between the man and the house in which he resides, the influence may, probably, be exhibited in ways of which, at present, we may have but little conception,—ways which shall affect the moral and material nature of generations yet unborn.

If I am not trespassing too much on my auditory's good temper, I would say a few words, in the first place, on Gothic architecture in general. This will go some considerable way in answering the queries as to how, and how far, it is applicable to modern works.

Gothic architecture owed its existence to the deep longing of the human mind for the permanent expression of its choicest feelings. The hardy intellects of simple, true, and brave men, giving free range to their fancy and individual taste, were its parents and inventors. Instead of the stereotyped forms, therefore, to which the earlier architectural schools were devoted, the Gothic builders roamed freely, and built as their minds dictated, untrammelled by any influence save their own lordly will. The natural element came in afterwards, when the architects felt that they could afford to relax a little from their dignity, and to add the luxury of natural embellishments to the stern forms of which they had at first been enamoured. But natural forms, exquisitely as they increased the charm, were engravings upon the original design. The plain, unadorned wall, the round arch and circular-headed window, the square capital, and other evidences of early work, take no loveliness from the addition of natural forms, but are the language of minds looking even higher than nature, and of men thinking of eternity while they built for time. By-and-by, Nature lent the grace of her forms to the severity of the earlier fancies. Gothic builders pressed into their service the multitudinous shapes which the animal and vegetable worlds afford; and the ponderous and unornamented structures of earlier times were succeeded by edifices in which, although the rendering was conventional, were placed ornaments, suggested by the interlacing branches and the delicate flowers from the fields, and gardens, and woods around. A character was thus given to the works of man more than ever really savoring of the works of God, and structures erected by human ingenuity breathed the same language of adoration as the fowls of the air and the lilies of the field, and united with them in a *Benedicite omnia opera Domini Domino*, "O, all ye works of the Lord, bless ye the Lord; praise Him and magnify Him for ever."

He continued:—

"All this corroborates the truth that Gothic architecture was the petrified expression of the builders' thoughts, seeking rest and finding none, fanciful, almost capricious,—the production of free minds exulting in their freedom. With marvellous adroitness it accommodated itself to all requirements, and constructed matchless objects of every class. It could throw arches of exquisite taste over the portal of a building, or ornament the walls with arcades, or diversify the windows with forms by which the light was admitted through a thousand varying, yet ever beautiful traceries, or rise into the noble roof, with its assemblage of graceful timbers or moulded vault; or, leaving the interior, could mount into the tower and shoot into the spire, ever equal to the need then present, and ever giving evidence of minds conscious alike of the requirement, and of an ability to satisfy the same. Hence it is, that all the finest Gothic buildings, although so like, are yet so diversified, and present such conspicuous evidences of the action of individual minds. All sprang of hopeful appreciation of a free gift. All were the offspring of love without fear.

The forms, then, of Gothic architecture, are those in which men of old expressed their holiest, deepest, sublimest thoughts. These men were not heathens, as some of the moderns take delight in hinting. They had absorbing thoughts of God, His power, greatness,



holiness, and truth; and they obliged the very stones to cry out the same. They built religiously, looking through what they saw to what they saw not, like those old painters, as I have said elsewhere, who worked upon their knees, each line hallowed by an aspiration, and every stroke sanctified with a prayer. They possessed and venerated the Faith, and they wrote it in every detail of the buildings which they reared as that Faith's material abodes. They had exquisite taste to appreciate and seize upon beauty, and to shrink from deformity, whether near or remote. And they had, besides all this, that priceless gift, the noble heart to lavish all the results of their varied powers upon the visible abiding-place and worship of that great and glorious Being, who had so richly ennobled them and made them what they were. They gave Him back in love the spirit which they had caught from Him in knowledge."

The lecturer then contended, that the use of Gothic forms should be limited to churches, colleges, hospitals, town-halls, &c. He allowed that the churches of Sir Christopher Wren were entitled to very high praise as exquisite works of art, but considered that they were deficient as churches from the absence of the religious principle in their construction.

Mr. Hugo spoke strongly, however, in favour of the selection of the style of the Renaissance for domestic edifices:—

"With regard to domestic edifices, I am willing to admit that where practicable, a Gothic house is a very charming thing both to look upon and to possess. Nothing lovelier, in many a village of England, than some late Gothic mansion of the Elizabethan or Jacobean age, full of comfort, breathing of hospitality and goodness, and redolent of home. Who of us is there who has not more than once such in our mind's eye? Who of us knows not of some hamlet which looks almost the same as it might have done two centuries and a half ago, basking in the sunlight of a summer's morning, or illuminated through every dusky window on some tempestuous winter's night? Yet, must I needs say, addressing myself to a London audience, that we have, in my humble opinion again, too few opportunities for the introduction of such edifices into the crowded streets of our enormous town. Nor, as I think, do we need them, beautiful though they are. The taste of our forefathers, or rather, I ought to say, the taste of the all-accomplished architect of London rising from the ashes of the great fire, has given us some glorious houses, which, as dwellings for intelligent men, I can never hope to surpass. At this moment I have one in my mind's eye still standing in Mark-lane, the very model of a city house, every detail containing some evidence of the mind of the workman, stamped with the impress of a certain creative energy, which could form nothing trivial or mean; but which, possessed of noble ideas, pursued it into execution, and made it visible to the delighted eyes of others. I have elsewhere shown that I am not blind to the attractions of Crosby Hall, and other edifices of a similar class; but it is impossible to reproduce such structures among us, and the mere longing for them is little better than a weakness. The application of Gothic architecture in this case need take up no part of our time, for the subject itself admits not of discussion. We cannot apply a thing which does not allow of application. And that is the case with us here, and under our present circumstances."

And the lecturer concluded with the enunciation of two technical axioms in cases where the Gothic is selected as the style of modern edifices:

1. Buildings are to be constructed according to fixed and rigid rules. He said:—

"Any kind of application of Gothic architecture to any purpose whatsoever, which is intended to be brought about by the mixture of Gothic and non-Gothic details, is perfectly suicidal in its nature, and entirely subversive of the true principles of art. If you have Gothic edifices at all you must have them of strictly Gothic construction, or you have nothing else but a deformity and a monster. To give, therefore, to be supposed to give any rules for the production of such things, would be an act for which I should never forgive myself. I repeat—and it cannot be overpressed upon men too much—that any attempted application of Gothic forms to meet our present requirements, which shall proceed on the allowance to admit what are essentially Gothic details, deserves not our praise, but our most determined opposition."

2. All their details are to be essentially real. This is an example of unreality, he instanced the following:—

"Some months ago I walked into a field near London, where I saw men lying in the foundations of fine buildings. The walls were just level with

the ground, and reminded me of some of those extraordinary little Roman baths sometimes discovered. There were several little square compartments about two and a half feet in breadth, little corners here and there,—in fact, a labyrinth. I had the curiosity to make inquiries about the intention of the work of what seemed the presiding genius of the place, and was answered, with a stare of the most edifying compassion, that the tangled ground-plan before me was, in fact, the foundation of a row of Gothic villas. Gothic! It was a base prostitution both of the term and of the thing! The building was (to use the word which solicits me) a sham! And I think I should not very far err in asserting that the generality of modern Gothic houses are unrealities and shams. Now, if there be an enemy against which I would more vigorously set myself, and desire more vigorously to set you—it is an unreality. Unrealities of all kinds are at this very moment our curse and bane. Shams abound in literature and in art, as well as in things still higher and still more precious. And I verily believe—though some, perhaps, would deride the assertion, and more would wonder at it—that such edifices as those to which I have just alluded exercise an immoral influence on them who have the misfortune to be connected with them. An atmosphere of falsehood is around them, and pretence is their characteristic. They affect to be that which they are not, and affect to be not what they are. They are hypocrites in plaster, as despicable in their way as hypocrites in flesh and blood."

#### PUBLIC PLAY-PLACES.

A QUESTION was raised the other day by Alderman Rose, as to what should be done with the street boys, with a suggestion that the site of Smithfield Market should be made a public playground. Some suggestions on this subject, made by Professor Hosking, in the Supplement to his article on Architecture, in the "Encyclopædia Britannica," are worth quoting:—

"In laying out a town," says the writer, "there need be no mere lounging-places provided, such as the paved area of Trafalgar-square, in London, or as the place so common in the towns and cities of the Continent. Markets should be provided for in sheltered and inclosed buildings, and not held in a place; and a more than equivalent for the place, or even the village-green, ought to be provided for out-door recreation, and it may be, rest; but wholly irrespective of business. To this effect plots of from five to ten acres each, making in all not less than one-tenth of the whole area, should be reserved in laying out a town, or in adding to a town; such plots being so disposed as not to be more than a short half-mile apart, or so that there shall be one such plot within less than a quarter of a mile (a sufficiently long walk at once for a child, or for a woman, or a girl, carrying a baby) of every domicile; and every such plot inclosed, but accessible on every side, and laid out in the best manner to make it a pleasant resort at all times for men and women seeking rest or healthful recreation, and as a playground for children. With such a provision in a town, idle men and boys may be reasonably required by the police to "move on;" and, with almost equal advantage to children and to the community at large, the trundling of hoops in the streets may be prohibited; whilst river or sea-side quays for business, or terraces for pleasure, need not be the permitted haunts of thieves and beggars. Out of a ten-acre plot (the size of the whole area of Russell-square, in London, and about that of Lincoln's-inn-fields, up to the inclosures before the houses), one acre disposed in four distinct quarters of an acre may be assigned to the four essential requisites of every hundred-acre area in a town,—a church, a school, a library with reading-rooms, and a building to contain baths and wash-houses,—one at each of the four corners of the town-garden, in its own quarter-acre plot, and each communicating directly with the garden as well as with the streets by which, if houses or other buildings front towards it, the garden should be belted, without taking them out of the ten-acre area. The town-garden need not supersede the square and its garden, which may be formed and the garden maintained in all its exclusiveness with great public benefit, wherever the prospective demands of a future population may seem to require squares in connection with the streets, by which, and by the buildings fronting to them, the greater part of the whole area will certainly be covered. No need the town-garden vie with the square-garden in the relative extent of its plantations, or in the picturesque disposition of its paths. It should be laid out with broad walks, and hardly turfied lawns; it should have a fountain, and trees should not be wanting;—upon the whole, more like Hyde-park, the Green-park, and the public grounds of the Regent's-

park, than like the too elaborately beautiful ground of St. James's-park. The town-garden should not be too delicate for cricket and quoits; nor should it be supposed to render the suburban park a superfluity;—the town-garden for children in the day, and for work-day-evenings for men and women, and the park for holidays."

#### THE PROVISION OF DWELLINGS FOR THE LONDON POOR.

So great is the size of London, that it is not an easy task even to glance once a year at its various districts; and yet it is important that those who wish anxiously for beneficial progress should make themselves acquainted with the sanitary and educational movements which are going on amongst its vast population.

From time to time we have revisited various localities, and would now look once more to the neighbourhood at the bottom of Gray's-inn-lane, a spot which has been more than once referred to in the *Builder*.

While viewing the miserable rooms in Charlotte's-buildings and some of the courts adjoining, it is impossible not to feel anxiety about those who are here and in other parts of the metropolis so thickly crowded together.

In these neglected spots a new generation is springing up, without care for education, decency, and in some instances we fear honesty; and nothing can be more disheartening than the aspect of the large groups of lads, from seven to eighteen years of age, visible in obscure corners, with sentinels posted to give notice of the approach of the police, busily engaged in gambling, and using language shocking to the ears. They have never had the chance of useful employment; are learned in all mischief, but wanting in such knowledge as would fit them to be useful members of the community; and unfortunately it cannot be doubted that these dangerous weeds are increasing in an undue ratio, not only in London, but in other large towns.

No thinking person can glance without feelings of pity at the several thousands who are thus thrown upon the world without a chance; and many good men are endeavouring to find some remedy for the evil. Various plans have been suggested; and great as may be the disputes on this subject, all will agree as to the impossibility of rearing useful men and women in such dens, and under such conditions as it has been our painful duty to describe. Charlotte's-buildings, Fox-court, and some of the alleys adjoining, have been greatly improved by the efforts of the sanitary police; and yet these are still sad places.

In providing dwellings for the industrious classes in large towns, one of the chief efforts necessary is to get rid of the prejudices which exist, and make it difficult to persuade those who have been accustomed to certain dwellings to change them for others which are evidently better; and in consequence, persons who own the inferior description of house property can point with a sort of triumph to the appreciation, by their tenants, and the profits of their dwellings, in comparison with some of the model buildings which have been put up in London. We cannot, therefore, look without great interest at the working of these institutions, and feel that those who have their management hold a great responsibility; for capitalists are watching the experiment, and money will not be wanting to rear any description of dwellings which will return a fair profit upon the outlay.

From time to time, and in so many various quarters, the £. s. d. consideration has been submitted to us, that we are induced, with the best feelings, to allude to one or two circumstances in connection with the new buildings which are worthy of notice.

In the St. Pancras-road the sets of apartments consist of two and three rooms, and other accommodation; for these a rent is charged of 4s. 6d. 5s. 6d. 6s. 6d. and we believe some are charged as high as 7s. a week (the latter amounting to 13l. 4s. per annum), a large sum when we consider that smart and comfortable cottages can in many places be had for a trifle more; and although the internal arrangements of these apartments are excellent, still it is evident that the rent here charged is more than can be afforded by the great body of mechanics,



for whom this place was intended, and the style, approaches, and staircases, are not sufficiently attractive for those who can afford so much. Three or four years ago it was rare in this building to find any apartments to let. As we have before stated, the rents have been from time to time raised; and since the last increase twenty and more sets of rooms have been empty at one time, and some of the more expensive have been empty for upwards of a year.

Before leaving this part of the subject it is necessary to allude to Tyndall's-buildings, in Gray's-inn, referred to in this Journal; and here, unluckily, things have not so far worked well. There are, however, causes that have produced this effect, which, when explained, should not dishearten those who take an interest in this movement. At the time we heard of the purchase of this block of houses, we knew that there was a most difficult population to deal with; in fact, we do not remember seeing together such a dangerous company as has been gathered here on some evenings when we have ventured to look in. They were not the starved and miserably poor, but strong and healthy men and youths, warmly dressed in velvet coats and showy neck-ties, who get a living, as a police-officer said, "goodness knows how; though you and I can guess, sir." The majority of the dwellers in this place did not care about changing, neither did they like to have much inquiry made; and it must be borne in mind that a large number of persons in London who have an interest in the property let to the poorer classes, and who have much influence with them, are opposed to all changes, as entailing upon them expenses which they must, as a matter of necessity incur, when improvements are made near them.

It unfortunately happened that the Association did not succeed in purchasing the whole of the houses in the court, and this, in various ways, led to much annoyance and difficulty. Notwithstanding, the necessary repairs and alterations were proceeded with,—the cisterns and closets were arranged; the cellars cleaned; ventilation cared for; washing places made in each house; rooms which might be let to families were judiciously fitted with partitions; in fact, the change made in the appearance and wholesomeness of the place was wonderful: and yet a number of the inhabitants seem to have opposed this beneficial arrangement. Although the collector had formerly felt little difficulty in collecting the rents when the place was a scene of dilapidation and ruin, it has become, strange to say, not easy now to collect the rent; and many doors are fastened with a padlock, the tenants having left. This sort of wilful and ignorant contempt for the means of health and comfort, causes mingled feelings of vexation and pity. We must not, however, be disheartened, for although amongst the old the chance of a change for the better is not great, still we have hope that if proper exertions are used we shall be able before long to act to some profitable extent upon the young.

It can only be want of knowledge, or the most dreadful poverty, that will cause men and women with families of little children to prefer rooms poisonous from stagnant drains, dirt, and want of air and water, to those which are healthfully arranged, and not more expensive.

Ill-arranged dwellings, want of proper education, and of honest employment for the children of the poor in our great cities, are the chief causes of crime and shortened life, and it is difficult to know which of the above-named items is the means of producing the greatest amount of evil. Every one will, however, be doing good work who will endeavour to get rid of any of these bad conditions. It is clear that a certain amount of education will create a wish for better dwellings, and the improved homes will lead to an increased desire for advanced education. We were, therefore, glad to notice in the long passage which leads from Gray's-inn-lane to Leather-lane, on the front of a house which in former days had been a residence of some importance, the words "National School." A considerable part of these premises seems to be let out in tenements, and it would be well if the proper authorities were to look at the overflowing dust and the

rapid progress which is being made in filling the cellars with offensive refuse. Some other things should be attended to, for when a number of children are gathered together for several hours in the day, it is impossible to take too much care to ensure health.

This school is here in a most useful position. A part of the ordinary dwelling has been, at very moderate cost, converted into a place where 300 or 400 scholars, boys and girls, can be accommodated; and it was pleasant, after leaving the scenes which have been alluded to, to see such a large number of children cleanly dressed, and being trained to be orderly.

The school seems to be well managed, and it affords a contrast to compare the boys and girls and teachers with those playing not far off. It was satisfactory to find that drawing had not been neglected, and specimens were shown of the work of boys who, in an incredibly short time, have acquired a degree of skill which would surprise many who have either neglected this useful branch of education, or been taught on old-fashioned plans.

In this and other National schools in London, the charge is from 2d. to 3d. a week for each pupil, and an extra penny or so a week is charged for drawing. Constituted as these schools are, and intended for the use of the children of our mechanics and persons of small means, whose boys one day are expected to take part in the production of some of our manufactures, it seems to be question for the serious consideration of the managers whether it would not be advisable to abolish the extra charge for drawing,—a branch of education nearly as important as writing and arithmetic. On inquiring the places from which the boys had come, we learnt that from Tyndall's-buildings there were none; from Charlotte's-buildings, none; and from Baldwin's-gardens, eight. Thus showing that the nature of the dwellings has a great deal to do with the inclination for instruction. There are 148 boys on the school-books.

In the Thanksgiving building in Portpool-lane, several of the apartments for single women were empty; and we were surprised to find complaints made by some of the tenants of a very insufficient water-supply, caused by some leakage of the pipes, left unattended to.

If the improved dwellings which have been erected are not remunerative to the builders, or appreciated by those for whom they are intended, it is time to think of some other plan which may supply shelter to a large class which must be cared for.

#### PROPOSED MEMORIAL OF THE LATE JOHN BRITTON.

I OBSERVE in your paper of the 10th January, an interesting account of *John Britton*, whose death took place on New Year's Day. That account was evidently written by one who was intimately acquainted with him, who knew his worth and talents in all matters of archaeology and literature. I observe that there is a proposal made of placing some suitable memorial of him in the cathedral of Sarum, but would it not be peculiarly appropriate in the church of his native village, Kingston St. Michael? That church I hope will be restored shortly to somewhat of its former beauty; and might not the many architectural and archaeological friends of Mr. Britton take the opportunity of restoring some part of the edifice, most of which is at present in a sadly dilapidated condition, yet exhibiting specimens of that architecture, Norman, Early English, and Decorated, which John Britton's works so well illustrate? A "Britton Aisle," or a "Britton Window," after some examples given in his own works on church architecture, would well perpetuate the name of the departed in his own native village, and in a neighbourhood of Wiltshire to which he was naturally so much attached. I should feel much obliged, if, by means of your valuable publication, you would bring this subject before his friends, and especially "*The Britton Club*."

A WILTSHIRE FRIEND.

\* \* \* The suggestion has already been made, and if not adopted by the Institute, who seem to desire that the memorial in Salisbury cathedral should be put up wholly by themselves, will be, we have no doubt, by others. The Wiltshire Society have already discussed it, we are told. Mr. Markland suggests that the memorial in the cathedral should take the shape of an altar-screen, much needed there he thinks.

#### THE "CONSERVATOIRE DES ARTS ET METIERS," PARIS.

IT WAS the 19th Vendemiaire, in the third year of the Republic (October 10th, 1794), that a decree ordered the creation of the "Conservatoire" of Arts and Sciences, on the suggestion of Gregory, Bishop of Blois, but it was not till four years after (1798), that the council decreed that the buildings of the ancient Abbey of St. Martin-des-Champs, in Paris, should be appropriated for its purposes.

This structure, as it formerly stood, was composed of a principal building, between the court and the garden, with two wings projecting from either side, the one enclosing the garden, the other the fore court, which was shut in from the Rue St. Martin by a wall. Of the two wings on the fore court side, both built by Pierre de Montreuil, the architect of the Sainte Chapelle, in the first half of the thirteenth century, the one to the south was consecrated as the chapel; the other, the northern, being used as the refectory.

The interior of the chapel, which is appropriated to the machinery, was a beautiful specimen of Gothic architecture, and we can still admire it amid the works that are now being executed there. The refectory is at this time used as the library. Externally it is a fine Gothic edifice, adorned with rose and pointed-headed windows, but which to the south they have had the bad taste to wall up for the purpose of constructing an amphitheatre: to the north the walls have strong buttresses. The interior, a magnificent nave, 42 metres by 7 metres, is divided into two by seven columns, of marvellous lightness and elegance, the shafts being banded midway.

From each angle of the capital spring groinings which, meeting similar ribs springing from each side above the engaged columns, form pointed vaultings. The engaged columns on each side are supported on brackets, placed at the same height as the band on the columns in the centre. Seven paintings, by M. Gerome, decorate the walls, the subjects being Ari, Drawing, Painting, Science, Natural Philosophy, Chemistry, and the patron of the Abbey of St. Martin.

At the end of the north side is the reading-desk (as at Chester and elsewhere), the staircase to which is formed in the wall. The building was fitted for its modern use by the architect, Vaudoyer.

#### THE WOLVERHAMPTON WORKHOUSE COMPETITION.

AS A communication respecting the Wolverhampton Workhouse Competition, in your last publication, is so worded as to lead your readers to draw unfair conclusions, we in reply would state:—That on the advertisement for plans appearing, finding the time to be very limited, we at once commenced our drawings, at the same time individually by letter to the Board, protested against the remuneration offered; some few days after, and when by much personal exertion we had matured our plans, we were asked to join other architects in a combined protest, to which we assented, and shared in drawing up the letter which was then presented, and which is that referred to in their remarks to you. But on their requiring us to forego all our labour, and to wait for the guardians' reply, thus allowing the time to ebb, and so shut us out altogether (which we believe was their aim); we said that we should, as our scheme was in a forward state of completion, much prefer sending in, promising, if they would adopt the same course, to adhere with them in maintaining the usual per centage, even to the abandonment of the work, should our plans be selected. But in reply, with great apathy they remarked, they would rather not compete.

On this we finished our plans and sent them in, with a result of success; but we have not as yet met the guardians, to bring the matter of remuneration before them, therefore the "Architects'" remarks are gratuitous and premature.

But we rather discover a reason for their addressing you just at this time being from interested motives; a competition being open for another public building in the town.

The worth, also, of their remarks you may judge when we acquaint you, that for the public buildings erected during several years past in this town, gratuitous offers of services have generally been made; and for other works, in any per centage, even as low as 2½, has been accepted.

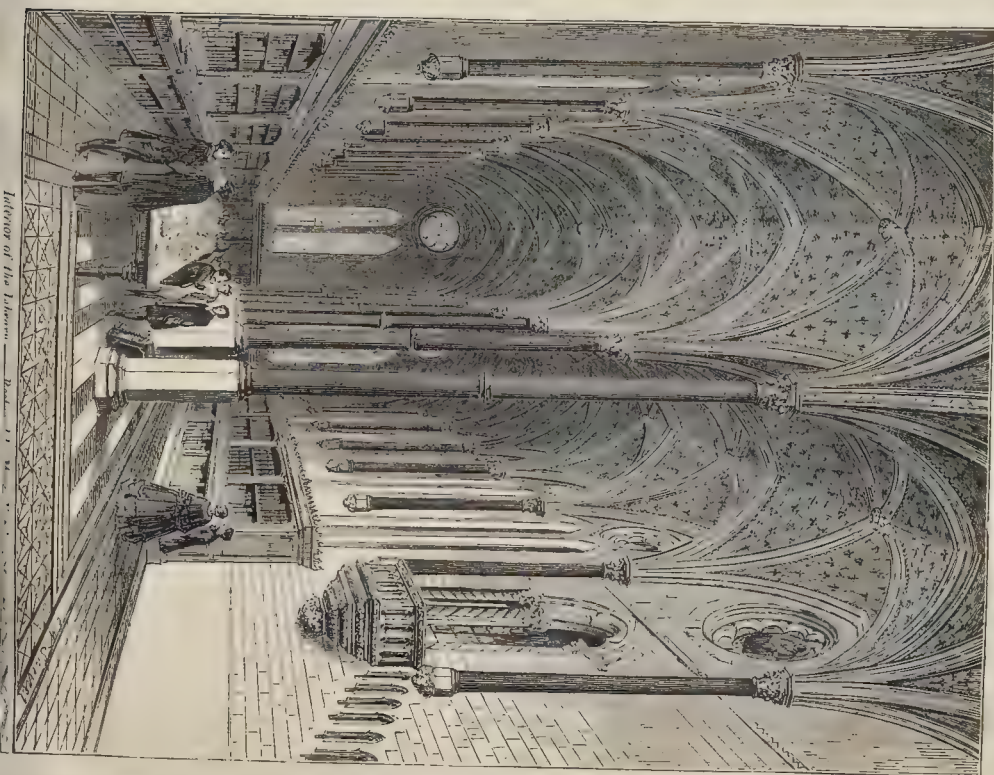
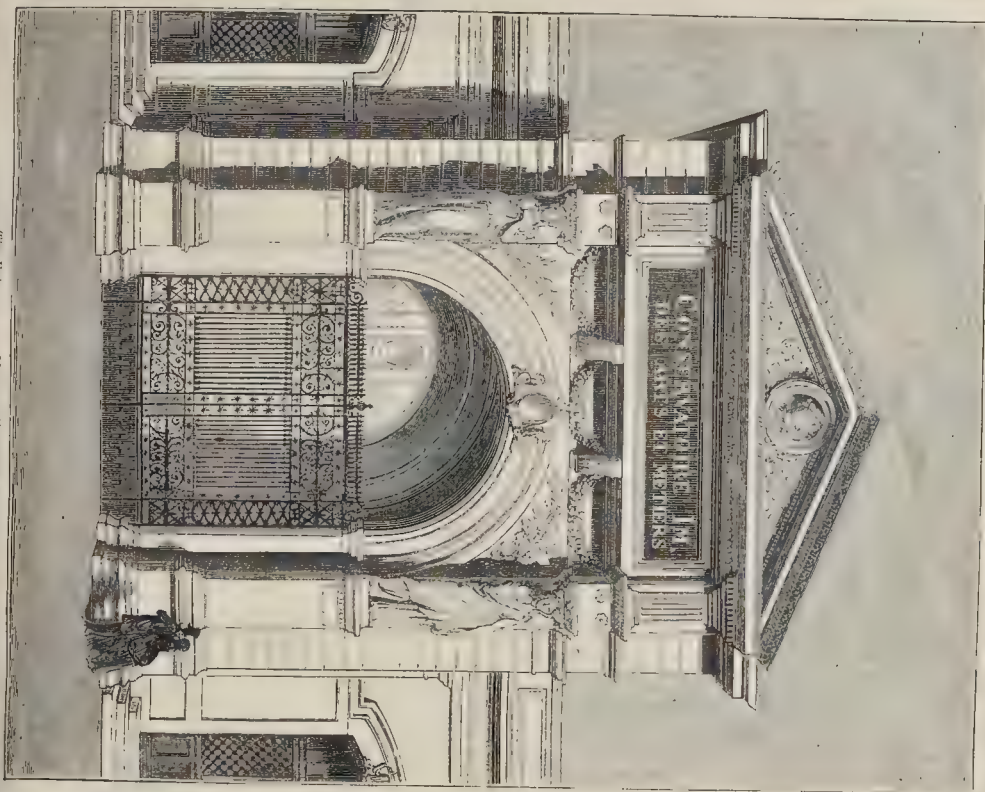
That not more plans were sent in, is attributable to the limited time, and the difficulties attendant upon this competition.

BIPKINS and LOWRY.

SOMERSET COUNTY SURVEYORSHIP.—Mr. Charles Knowles, of Bridgewater, Mr. J. Leversedge, Mr. C. Corfield, of Taunton, Mr. Arthur Whitehead, C.E. of Exeter, and Mr. S. Pollard, of Taunton, are candidates for the office of county surveyor, which will be vacant at Lady-day next by the resignation of Mr. Carver.



THE "CONSERVATOIRE DES ARTS ET METIERS" PARIS.



Interior of the Museum.

The Engraver.—Messrs. L. Foulques, Architects.



## PROVINCIAL NEWS.

**Norwich.**—A special meeting of the local court of guardians was held on Wednesday before last to consider the subject of a new workhouse. A report by the committee was read, in which it was stated that in compliance with the order of the last general court, the committee had further considered the plans of Messrs. Medland and Maberley, sent in by them under the motto of "Humanitas," and to which the court awarded the first premium of 100*l.*; and they considered the arrangement of the building by such plans well suited to the postponement agreed to at the last court, of the erection of the boys' and girls' wards, and the addition of such wards at some future period, if thought necessary; and had such parts of the building as are proposed to be deferred denoted on such plans.

**Shoreham.**—It is in contemplation to supply Shoreham, by means of waterworks of an inexpensive character, with pure spring water, taken from a spring rising at the foot of a range of chalk hills about half a mile distant. A survey has been made, and plans and estimates drawn. It is proposed to establish a company, and to raise about 1,500*l.* in shares of 10*l.* each.

**Llanelli.**—The Nevill Memorial Committee offered a premium of 10*l.* for the best design and specification for a building to be erected in the town of Llanelli, in commemoration of the deceased Mr. R. J. Nevill. The particulars were as follows:—*Ground*.—Frontage, 50 feet to 100 feet, and not less than 100 feet in depth. *Building*.—To consist of one room of an area of 1,250 feet, for the use of benefit societies, a room for savings-bank, room for committees, and three rooms for housekeeper, with conveniences for the whole. *Front*.—Ornamented, with a tablet for inscription. The subscription list amounted to 1,165*l.* The 31st of January was the period limited for the designs for the building being sent in by the different competitors, and on the 6th of February the committee were to meet to consider them.

**Ware.**—In speaking of local improvements, the Herts paper states that the flagging of the footpaths which has for some time occupied the attention of the Board of Health, has been determined on, and will commence in March. Mr. Ekins's tender was accepted on the 6th January. The estimated cost for the contemplated works is 1,300*l.* and the sum proposed to be borrowed is 1,500*l.* The expenditure will include the outlay for sewerage where most required, and improvements in Star-lane. The repayment will extend over a period of twenty years.

**Sherborne.**—The new parochial school buildings in Westbury were opened a fortnight ago, by the bishop of the diocese. The total cost of the buildings will be 2,450*l.* exclusive of the site, which was given by the late Earl Digby, and which is valued at 215*l.* In subscriptions 930*l.* 17*s.* have been raised. The Committee of Council give 1,193*l.* 0*s.* 6*d.*: the National Society, 120*l.*; and Lord Digby allowed for the old school-room in the abbey 100*l.* About 75*l.* more are required to complete the undertaking. The architect is Mr. Henry Hall, of Islington. The buildings comprise three large school-rooms, one each for infants, boys and girls; several class-rooms; and houses at either end for the master and mistress. The school-rooms are calculated to hold each 200 children, with an allowance of 8 square feet per child. The field in front of the buildings will be laid out in gardens, which the boys will cultivate.

**Worcester.**—Messrs. Hunt and Fletcher, of Birmingham, have contracted for the execution of the sewerage in this city. The total amount of the contract, according to the local *Herald*, is 15,497*l.* which has been accepted. The total of the previous contract (which was repudiated on a technical disagreement) was 14,684*l.*; and it remains with the Local Board to decide whether the first contractors shall be proceeded against for the balance of 813*l.* The new sewerage will be commenced, as soon as possible, on the west bank of the river, *i. e.* the St. John's and St. Clement's sewerage is to be commenced before the rest of the city.

**Stockton.**—It is in contemplation to widen Stockton bridge by removing the footpath, and

placing it on that part now occupied by the abutments. The magistrates in session, at Northallerton, have given instructions to the Surveyor of Bridges for the North Riding, to examine and report thereon.

**Halifax.**—Mr. John Crossley has commenced preparations for erecting an Independent College, which, when completed, is to vie with the schools at Harrow, Rugby, &c. The site is on the westerly side of Skircoat Moor. The college, it is said, will be a massive building with a large spire and four small towers. When completed, there will be accommodation for 130 pupils and nine resident masters, with the principal. The college is to cost 20,000*l.* The works are to be pushed forward with rapidity, and it is anticipated that the college will be opened in about two years from the present time.

**Edinburgh.**—Mr. John Steel, the sculptor, has suggested the centre of Melville-crescent, Melville-street, as a site for the monument to the late Viscount Melville. He recommends that the present garden should be changed into a place, in which the statue should be the central object. This has not yet, however, been decided upon by the proprietors. The statue, which is a bronze figure, 11 feet 6 inches high, will be ready to put up as soon as the pedestal can be erected.

**Probley.**—Lord Elcho has resolved on the rebuilding of the ancient castle of Neidpath, and on fitting it up as a place of residence for his family. Great repairs and additions will require to be made, as a century and a quarter have elapsed since Neidpath formed a residence for its proprietor, and ever since the grass has grown within its courtyard and the ivy round its ruined walls. The works are to be proceeded with during the ensuing spring.

**Wick and Lossiemouth.**—The directors of the Lossiemouth Harbour Trust have almost unanimously carried a resolution to extend their harbour accommodation by an erection which will involve an outlay of 25,000*l.* The contemplated improvements embrace a breakwater, a steamboat quay, and a basin for fishing-boats. By this extension they contemplate the establishment of steam conveyance with Sutherland, Caithness, &c.

## CHURCH-BUILDING NEWS.

**Great Salting (Essex).**—A new parsonage is to be built here, the church entirely restored and remodelled, and new schools erected, from the designs of Mr. R. J. Withers, architect.

**Ware (Herts).**—A small church is to be built at Ware, Herts, for the Rev. F. Layton: Mr. George Truett, architect. The following tenders, exclusive of chancel and fittings, have been received:—

W. Hitch .....	£440	0	0
G. Hitch .....	425	0	0
Evans, Brothers accepted ..	392	10	0

**Lyonsham (Oxon).**—Considerable repairs have lately been carried out to the church, the service during the time being held in the chancel. The nave and south aisle have had new roofs put to them: the clerestory walls, parapets, and east end walls have been taken down and rebuilt, and the freestone work to the piers and arches on one side of the nave restored. Two of the galleries which were in the church previous to the restorations have been removed, and it is intended to take away the one remaining there, and to make up for the loss of sittings, by enlarging the north aisle. The whole of the interior fittings of the church require to be removed and re-arranged with new work, and there is but little doubt it will soon be done, and the church put in a perfect state of repair. The works were contracted for by Mr. J. Long, of Witney. Mr. W. Wilkinson, of Oxford, was the architect.

**Witney (Oxon).**—A portion of the burial-ground which has lately been provided for the parish was consecrated by the Bishop of Oxford on the 26th ult. The site appropriated for the cemetery contains about three acres of ground, and is situated a short distance out of the town. Two chapels, in the Early English style, and a lodge have been built upon it, and it has been enclosed by a good stone wall fence, about 6 feet high, with the exception of a short distance on each side of the general entrance in front of the lodge, where it is a low wall, having iron palisading on the top. There is a separate gateway entrance provided to each of the consecrated and unconsecrated portions. The contracts for the chapels, lodge, entrances, and boundary walls, amounted to 1,169*l.* which sum has been exceeded but a few pounds. The contracts were taken, and the buildings have been carried out by Mr. James Long and Mr. Bartlett, both of Witney, under the direction of Mr. W. Wilkinson, architect.

**Witney.**—Some improvements have just been effected in Ifley church under the direction of Messrs. Buckler, particularly the restoration of the Norman front, which was deformed towards the end of the fifteenth century, by the obliteration of the circular window in the centre. A considerable portion of the circle in the interior was spared, corresponding with the frame of the side windows. The clear diameter of the circle is 4 feet 8 inches: it has been filled with painted glass by Messrs. Hardman and Co. In the centre is the Dove, with two angels on each side, the whole surmounted by a border. This window is a memorial placed by the incumbent to the memory of the late Mr. Eliot Warburton, who was lost in the *Amazon* steam-vessel, in January, 1852. The gallery at the west end has been removed, and the organ is placed on the floor. The oak seats have been reduced in height, and to a simpler form than before. The base of the eastern arch of the tower, previously hidden, has been strengthened and restored. The oak doors at the west end, with the ornamental ironwork, are to be replaced according to the originals which existed till 1843. The various operations have been executed by Messrs. I. and W. Fisher, of Oxford.

**Warminster.**—The re-opening of the chapel of St. Lawrence, Warminster, took place on Thursday before last. The chapel has been restored, the style of architecture being the Early Decorated. The interior is fitted up with open seats, and the roof is of open work. Several of the windows are filled with stained glass.

**Salisbury.**—The new cemetery for the parishes of St. Thomas, St. Edmund, and St. Martin, Salisbury, was consecrated by the Bishop of the diocese on Thursday week. Mr. J. Curtis, of Salisbury, contracted for the entire works at 2,737*l.* and they were executed under the personal superintendence of Mr. John Harding, also of this city, from designs prepared by Mr. Henry E. Coe, of London, architect.

**Spetchley.**—The parish church of Spetchley is likely, it is said, to be restored.

**Leek.**—A few gentlemen assembled in the Town-hall of Leek last week to consider of the erection of a new church and schools at Compton. The plans of the proposed new church, with parsonage house, schools, and master's residence, were laid before the meeting. The estimated expense of the whole is 5,289*l.* odds. Co-operation was invited.

**Walsall.**—At a meeting of the Walsall Burial Board, held on Tuesday in week before last, the tender of Mr. Burkett, of Wolverhampton, to erect the chapel, lodge, and entrance of the new cemetery had been accepted; but that gentleman wrote to say that he had since found that he had by mistake omitted 100*l.* from his estimate, and therefore declined to accept the contract. The estimate of the town surveyor was 1,704*l.* odds: Mr. Walter Heap, of Walsall, had tendered for 1,544*l.*; and Messrs. Taylor, of the same place, for 1,705*l.* 5*s.* At a subsequent meeting it was proposed that Mr. Heap's tender be accepted. The Board, however, seemed generally to be of opinion that "if Mr. Burkett, who was so well acquainted with such work, could not perform it for the sum of 1,548*l.* his first tender, it was not likely that Mr. Heap could complete the works for a less amount," and Messrs. Taylor's tender was accepted.

**Tewkesbury.**—The new cemetery for Tewkesbury has been consecrated. The ground is on the eastern side of the Cheltenham-road, a short distance from the town, on rising ground, and the chapels are on nearly the highest portion of it. The chapels are side by side, but separated by an archway, 15 feet wide: their dimensions are precisely similar, being 34 feet in length and 17 feet in breadth. The *Tewkesbury Weekly Record* gives an engraved view of them. The entrance is by a porch on the north side of the



Episcopal chapel, and on the south side of that of the Dissenters. Externally, the western elevation presents three gables, the centre one being the archway, which is crowned with an ornamental bell turret with a carved and crocketed spire. The gables of the chapels are pierced with three-light windows filled with decorated tracery of flowing character, and above each window is a small trefoil opening. The roofs are of open timber-work stained and varnished. The seats are open, and also stained and varnished. The floors are laid with red and black tiles disposed in patterns. The entrance-gates have been executed by Mr. J. Rogers, of Tewkesbury. About two-thirds of the cemetery is appropriated to Episcopalians, and the remaining third to the Dissenters. Messrs. Collins and Knight were the contractors. The carving was executed by Mr. H. Erith, of Gloucester. Mr. Thompson was the contractor for the roads and drains. The architects were Messrs. Medland and Maberley, who have been engaged on similar works at Birmingham, Leicester, and Plymouth, and are now employed in carrying out the cemetery for the city of Gloucester. The cemetery stands upon ground rich in the storied memories of the past.

*Manchester.*—In our notice of the New Barns cemetery chapels (p. 52, ante), Messrs. Pritchett and Sons, by a slip of the pen, are called the "contractors," instead of the architects.

#### THE MEMORIAL CHURCH AT CONSTANTINOPLE COMPETITION.

The committee have selected thirteen designs out of the forty-six submitted, as possessing claims for distinction, and have thus placed them:—

*Prizemen.*—1st, W. Burges; 2nd, G. E. Street; 3rd, G. S. Bodley.

*Provincially Accessible, recommended for extra Prize.*—W. Slater.

*Especially Mentioned (alphabetically).*—C. Gray, In te Domine Speravi, R. P. Pullan, G. Truett, Veightman, Hadfield, and Goldie.

*Honorably Mentioned (alphabetically).*—A. Bell, Francke (Meinigen), Howell and Budd, Pritchard and Seddon.

The report offers several points for comment, but we prefer to see the designs before making any observations beyond this,—that both the first and the third of the selected designs are founded on the church of St. Andrea, at Verocelli!

#### GOTHIC AND CLASSIC.

In my letter, published in your impression of the 10th ultimo, it was not intended to convey an entire condemnation of Gothic, but rather to protest against its universal application to all purposes for which "architecture" is employed, like for buildings for religious, secular, domestic, and other purposes; for surely one should be able to tell, at a cursory view, pretty nearly what use such and such a building is appropriated, whether as a college, mansion, theatre, &c. There should be certain outward and visible signs to guide our judgment in these matters, besides cramping as it does genius into a set form, and ignoring the use of materials, which not a little of the advancement of the present age is attributable; for Gothic is a role of stone and wood moulded into various attitudes, the absence of which in certain acknowledged proportions renders it impure and false: it is, moreover, the generally accepted rule for our churches, although it is to be wished that it will be modified to suit the requirements of the present day,—but not in a form it has taken in some few instances, viz.—those harlequin-esque structures of red, yellow, black, and blue, with gaunt towers, like keenly-drawn gigantic carpenters' pencils. These appear as if Gothic were very much strained to produce "something new": beauty of general outline is overlooked in what seems to be an anxious desire to cut up the surface into party-coloured rays, bands, &c. This, I think, is a wrong step. The sight of a church should rather rise to heavenly thoughts; but this appeals to the senses. The grandeur and exalting dignity are sacrificed, the beautiful simplicity (at least of a Protestant church is nullified, and it is more suitable for the fopperies of

image worship than for an enlightened nation adorning the Great One. No. If Gothic is to be modified and perpetuated at all, it must be rather in better adapting it to our mode of worship, making the form of our churches more suitable for seeing and hearing. These important points have yet to be satisfactorily established. These will be found an attainment worthy of cultivation and study; and these, combined with suitable adjuncts, so as not to exhibit a puritanical meagreness, will, when accomplished, form a type for them for some time to come.

Now, the "train of thought" (mentioned by your correspondent, E. W. G.) which produced the nave of Westminster, the north porch of Redcliff, and others, was brought to bear upon the only materials which were available for the required purposes at the date of their erection, coupled with ingenious designing powers, which altered, improved, and progressed, century by century, and so distinctly that we are enabled to tell the date of particular buildings by mere inspection of certain features and characteristics; but when Mr. Macaulay's New Zealand explores the land, being "well up" in "ancient architecture" from Brandon and other sources, he will be sorely puzzled to tell—"how it is that while one building, of (say) the fourteenth century, leaves only a few vestiges to mark its date; other specimens, with exactly similar features and details, are found—in as tolerable a state of preservation, as the selection of stone in the present century allows them to be." And as he will in all probability search the columns of the *Builder* for information, we will tell him that the twelfth, thirteenth, and fourteenth century architects originated, and the nineteenth century architects drew rather largely from the repertoire thus created for them.

With reference to the "obsolete" items, I only judge from what I see erected, whether architects are anxious or not to revive them; and if we do away with buttress, and pinnacle, and gable, traierced window, and pointed arch, we shall not have much of "Gothic" left. That it was, is, and always will be, "medieval," there can be no doubt; that it can be thoroughly adapted to all our wants in the nineteenth century, there is very great doubt; and that it will be superseded by a style that will do honour to our time, and admit of the free use of nineteenth century materials there is little or no doubt. THOS. GOODCHILD.

#### THE PADDINGTON VESTRY AND THE ROADS.

With reference to the letter on the subject of the new roads in Paddington (p. 54), one of the correspondents, whose letters on the subject are now before us say:—

"The new Metropolitan Act, in clause 105, gives vestries not only power to make or complete roads for the public use, but renders it incumbent upon them to do so, on receiving a requisition signed by the majority of the owners in any new street. As the vestry appears to disregard such requisitions on the part of owners whose property is immensely damaged thereby, and will permit the ratepayers of the parish to be subjected to the annoyance of not having their roads cleaned, lighted, watered, or repaired, the aggrieved parties have a remedy in the vestry's liability to a writ of *mandamus*; but as legal expenses of this kind for any single individual to bear would be oppressive, let one and all of the aggrieved parties unite and try the question."

A second, who writes in reply to Mr. Maynard, and signs himself "A Vestry-man of the South-east Ward," says,—

"The facts of the case are pretty fairly stated, so far as they go, by Mr. Maynard; therefore it is unnecessary to repeat them now: he should, however, have stated that no hope of the road being taken by the parish was ever held out unless it could be arranged that a bar should be kept up. The surveyor of the roads proposed it in the first instance, and the Highway Board recommended it; but the parties interested at the last moment declined the condition, and, as a natural consequence, the vestry simply refused to take to the road because that condition was not complied with, and not because the land beyond would be built upon at some future time. I may further state for the information of your readers, that the road in question leads to nowhere. It is an isolated bit, the roads adjoining not even being parish roads, and it will be no recommendation to the public until the road is made which is the beginning of, which may be next year or some twenty years hence."

We must content ourselves with having stated the grievance, and leave the sense of the parish to dispose of it.

#### THE HONDURAS MAHOGANY TRADE.

In an interesting discourse on British Honduras, its history, trade, and natural resources, delivered at the Society of Arts, on the 14th ult. by Mr. Chief Justice Temple, the history and practice of the mahogany trade was referred to at some length.

The trade of British Honduras, said Mr. Temple, has hitherto been confined to logwood and mahogany. When, and under what circumstances, mahogany was first introduced into Europe it is not easy to say. Some have supposed that it was first discovered in the island of Trinidad by the carpenter of one of Sir Walter Raleigh's vessels. When he came to work it up he was surprised at its hardness and beauty; and drawing attention to it, it was soon very greatly in demand for articles of furniture. This account is scarcely to be believed. There are many articles of furniture now in existence which were manufactured in the days of Elizabeth and the Stuarts, but I do not think one can be found which is made of mahogany. Some say it was not introduced into England until about 1803-3. It is said that a Mr. Gibbons, of London, had a brother who was master of a vessel trading to the West Indies. This worthy skipper, hearing that the doctor was building a new house in King-street, Covent-garden, very fraternally sent him a quantity of wood, which he had brought in his ship as ballast. This wood was so hard that the carpenters could not work it up, and it was thrown aside as useless. But one day Mrs. Gibbons resolved to have a candle-box made, and selected a piece of this rejected wood for the purpose. When made and polished, it was so beautiful, that the doctor determined to have a bureau made of the same material. The bureau, when finished, was shown to the Duchess of Buckingham, who was equally charmed with the wood, and determined to have a jewel-case made of it. By these quick gradations—from the candle-box of a citizen's wife to the jewel-case of a peeress—mahogany became known in England.

It is hardly likely, however, that the captain of a West-India trader, laden with sugar and rum, and also much spice, would take a quantity of wood into his ship for ballast. Besides, we are informed that many years previous to the treaty of 1766, the settlers had taken the liberty of cutting mahogany, without the permission of the King of Spain. There must, then, have been a good market for that article in England long before 1803 or 1804. The time allowed to me will not admit of my giving a particular account of the mode of finding, cutting, and preparing the mahogany. I will merely state that the cutting commences in the month of August. In April and May, in which months the ground has become perfectly hard, from the continued dry weather, the wood is carried upon trucks, drawn by bullocks, to the water's side; and about the middle of June, when the rivers are swollen by the floods, the logs are floated down to about ten miles from the mouths of the different rivers, where they are confined by a heavy boom drawn across the stream. Here the owners select their respective logs, form them into rafts, and so float them down to the sea. The mahogany is always trucked in the middle of the night, the cattle not being able to perform such laborious work during the heat of the day. It is a picturesque and striking scene—this midnight trucking.

An impression has latterly existed that almost all the mahogany in British Honduras has been cut. This, however, is a mistake. There is sufficient wood in the country, both on granted and ungranted lands, to supply the European as well as the American markets for many years to come. A considerable quantity of mahogany has been, within the last few years, cut in the state of Honduras on the Mosquito shore; but the mahogany works in the former country have been almost entirely abandoned, partly on account of the wood which is accessible being nearly all cut, and partly on account of the extra freight and insurance which are required when vessels are loaded on that coast. From the Mosquito shore very few cargoes have been lately sent; for the wood which grows there, although it is very large, is of an inferior quality. The mahogany tree requires a rich, dry soil. The best mahogany is found to the north of the river Belize. In consequence of the nature of the soil in that district, in which there is a great quantity of limestone, the mahogany is longer in coming to maturity; but, when fully grown, it is of a harder and firmer texture than that which is found in the southern portion of the settlement. There is no wood more durable than mahogany, and none which is so generally useful. It is stated in a little book called "The Mahogany Tree," that furniture is being made in the royal decayards out of the beautiful mahogany found in breaking up the old line-of-battle ship the *Gibraltar*, which was built in Havana 100 years ago. The English and French Governments purchase yearly a large amount of mahogany for their



dockyards. During the last year the British Government required 12,000 tons, paying 10*l.* 17*s.* 6*d.* per ton. The French Government took 3,000 tons at the same price. The Royal yacht is built principally of Honduras mahogany. Private shipbuilders are, however, reluctant to make use of mahogany for their vessels, as Lloyd's Committee exclude all ships of twelve years' standing in which certain parts are made of mahogany. Mahogany vessels of ten years' standing they admit, but even these, I am informed, it is their intention very shortly to exclude. The reason which they assign is, that mahogany differs very much in quality, and it is impossible to know when a ship is built of good or bad wood. But this difference in quality depends entirely upon the district in which it has grown. If they restricted the shipbuilders to the northern wood they might admit vessels of twelve years' standing without any risk. The qualities of mahogany which render it peculiarly fitted for ship-building, are its lightness and buoyancy, its freedom from dry-rot, and its non-liability to shrink or warp. The price of mahogany varies according to the size, figure, and quality of the wood. One tree from the northern district, which was cut into three logs, sold for 1,800*l.* or 10*s.* per superficial foot of one inch. Southern wood, of a small size and inferior quality, has been sold at 3*d.* a foot. The present prices in London for small-sized plain mahogany are from 5*d.* to 6*d.* per foot; for large-sized plain from 7*d.* to 10*d.*; and for large of good quality and figured from 9*d.* to 1*s.* 6*d.*

The yearly average quantity of mahogany exported from Honduras during the last ten years was about 8,000,000 feet, equal to 20,000 tons, or 200,000 tons in the whole ten years, requiring 160,000 trees.

#### ADAPTABILITY OF STYLE FOR MODERN WORKS.

THE Classic v. Medieval question being again raised, I would offer a few remarks.

I do not believe that the style of a building, whether Classic or Medieval, in the slightest degree affects its convenience or propriety; and I am equally convinced that Gothic architecture is as applicable to all purposes as Classic.

When I speak of Gothic, I do not at all mean that if we are about building a house, we are, for fireplace and chimney, door and window, buttress and gable, to produce copies of these features of some ancient Gothic building; but I mean, taken as a basis, the Gothic style, chiefly for the reasons that it is the most advanced of any time in the science of architecture,—of construction (though falling short enough of perfection for us to do better); and as a guide, taking the principle of the Gothic architects, and indeed the same, as Mr. Bartholomew proved, that guided the designers of the best architecture of all ages,—that true taste in architecture is purely structural.

For example, if in a window we imitate the glazing of the Gothic architects, with justice we may imitate the system of mullions and tracery; but this construction is infinitely behind our modern appliances, and no less behind our modern requirements. In a dwelling-house, with our system of wood-sash and plate-glass, no mullions in one of its windows need be nearer together than some three to five feet; and it is in direct violation of Gothic principle to crowd such a window with inconvenient and useless mullions, obstructing the light—to admit which is the purpose of the window itself—merely for external beauty, which there are plenty of Classic and even Gothic examples to show is to be obtained without them. Again, lofty pointed arches in a small building, as a modern street house, are surely inappropriate, both from the extra expense of window-frames to suit their form, and the greater proportional width required from the size of the spandrels, to admit an equal amount of light with a square-headed aperture of the same height: but this applies to a semi-circular-headed opening also; this greater width seldom increasing the elegance of the window. I should, therefore, prefer a flat-headed window in such a case; a segmental arch, with a rise of 3 inches or so; a splay round the window, or with jambs and head formed of moulded bricks, which are said to be of no more expense than plain ones, the difficulty only being, the few weeks' notice required before they can be supplied. In many cases the high arch might be used as a relieving arch, and the flat one (which

might be constructed with a point) used as the support to a thin shell of brickwork, to form the tympanum of the Pointed arch.

And in fact mullions are as suitable to classic architecture as to Gothic. In country towns, houses, upwards of a hundred years of age, which have classic cornices, and windows of ordinary size, divided by a wood mullion (often with a transom as well), have casements, after the fashion of little squares, and that mullions and tracery apply as well to classic erections of more ornate character, the dome at the British Museum will show; but these mullions are reasonably spaced: had the dome been Gothic, there is no reason the mullions should have been more numerous.

If not to others' satisfaction,—to my own, I have proved that there is no reason for a Gothic window to be more inconvenient than a classic one, in any case; and I do not doubt that it may be shown that every other feature in architecture is applicable to our uses, in the Gothic style as in any other.

That I approve of Gothic architecture for its greater science and beauty, is, perchance, matter of opinion and taste. I believe that the Gothic science is greater than the classic, of any times, perhaps excepting several such *quasi* classic examples as St. Paul's.

My opinions are not, however, immutable: they are the less so as the beauties of classic are so eminent, that I can never fail to admire them.

"57."

#### THE ARRANGEMENT OF A NATIONAL GALLERY.

SOME remarks in a recent *Builder*, on "The Past and Future of Picture Galleries," induce me to mention a few thoughts on this important subject for the consideration of your readers: and first let me submit that a national gallery of pictures, collected by a powerful and wealthy nation, should be worthy of the name, and enable those who visit it to trace the progress of this department of art, and to derive the greatest possible amount of pleasure and instruction from the various works there exhibited.

In our present so-called National Gallery, we have some glorious works, which, however, are so arranged, that to a certain extent they create confusion in the mind of both the student of art and the general visitor. The pictures of Titian, Corregio, Rembrandt, Claude, &c. are foisted one against the other, without any fixed plan. In a private gallery, where we cannot expect to meet with more than one or two examples by the same artist, it is necessary to arrange them so that each may best assist in showing and harmonizing with the beauties of the others. Delicately-coloured pictures should not be marshalled alongside of those of powerful tints and bold execution.

It is well known that Turner, in the Royal Academy Exhibition, could, by the power of his colouring, make pale, for some space around, the pictures of his brother artists. On one occasion it is said that this great painter covered down with water colours a painting which, by its brightness, interfered with that of a young man of merit, which was close by.

In passing along our Gallery in Trafalgar-square, we see in one room a picture by Rembrandt, rich in all its splendid depths,—next it a clear landscape by Claude, then a scene by Nicholas Poussin, and by the side of Rubens and Titian some of the indifferent specimens of Sir Joshua Reynolds, which so inadequately represent this artist, and cause his genius to be improperly appreciated by those who have not seen his best works.\*

In each of the large rooms of the National Gallery the arrangement is similar to the above.

It cannot be questioned that in a gallery for the artistic instruction of the people we should have arranged in their order, according to date, examples of art from the earliest times, showing its growth and progress. To effect the required purpose numerous examples of ancient works, if well selected, would not be required.

\* All must feel it matter of regret that the "Strawberry Girl" and "Puck," in the late Mr. Rogers's collection, should have been allowed to pass into private hands: these works, for various qualities, would have been companions for the pictures of any other school.

In a new National Gallery, care should be taken to provide sufficient space for the great mass of materials which must, as a necessity, be brought together, and continually increased. This and good lighting having been managed, it will then be a matter for consideration how best to arrange the pictures. Of course, we should place them according to their dates; and it seems to be desirable that while hanging the works of the various schools,—for instance, Italian, Spanish, Flemish, &c.,—the works of each artist, if in sufficient numbers, should be placed together; and it would give much additional value to such a collection if with these groups there could be placed an authentic portrait of the painter (if possible by himself). There ought also to be plainly written up the time of his birth and that of his death; and on every picture it would be well to put, if it can be fixed, the date of its production. The visitor would thus be enabled to observe the progress of the skill of hand and power of thought of each painter, and also see the image of the man who, on the bare surface, and with pigments useless in uneducated hands, has created works which delight the prince and the peasant.

If such an arrangement could be made as would enable us to see at once the pictures in the present National Gallery in the manner above mentioned, it would be more interesting to even those unacquainted with art.

There might be also one room in which the best specimens of the various great artists might be hung: these should be selected from the collection with the greatest care and intelligence—not depending on one opinion, but be chosen by the voice of such a committee of artists and persons of taste as would ensure a proper selection.

In the arrangement of a National Gallery we ought not to forget separate space for water-colour drawings and engravings. The first of these arts may be said to be of English growth, and in the latter we have produced examples which will bear comparison with those of any other country.

AN ARTIST.

#### THE METROPOLITAN BOARD OF WORKS.

PROJECTIONS BEFORE LINE OF BUILDINGS, WIDTH OF STREETS AND ALLEYS.

At a Meeting of the Board on the 30th ult. the Superintending Architect (Mr. Marrable) brought up the following report on the opinion of counsel, on the application of Messrs. Broadwood and Son for permission to erect a workshop four feet in advance of the regular line of buildings.

"On the 19th of December last the board refused their consent to an application from Messrs. Edwards, architects, on behalf of Messrs. Broadwood, for leave to erect a portion of their manufactory situate in the Horseferry-road, Westminster, about four feet in advance of the line of the dwelling-houses on either side. They submitted a plan with the application, which was found upon examination to be correct, by which plan it appeared that all the houses or buildings on that side of Horseferry-road, extending from Earl-street to Regent-place, a length of 628 feet, although broken up into several blocks, maintained a regular and uniform line, with the exception of one small shop, about eight or nine feet high, and 17 feet wide, which projected up to the public thoroughfare, and which projected up to the public thoroughfare, and a stack of deals approaching to within three feet of the foot-path. In reference to the Ordinance map it appears that no such deviation from the regular line as that now contemplated existed before the premises were lately destroyed by fire; and, looking at the importance of keeping the Horseferry-road (which is likely to become a great thoroughfare) as open and as free as possible, I recommended the board not to consent to the proposed projection, in which view of the case the dissenting board of works concurred, and the application was accordingly refused. Since then a case has been submitted for the opinion of counsel as to whether the contemplated erection would be beyond the regular line of buildings in the street; and if the regular line means the two or three houses on either side of Messrs. Broadwood's premises? or if a straight line is to be drawn from the point of the houses at the corner of Earl-street to those at the corner of Regent-place? or is the regular line of buildings to be determined by a straight line drawn from one end of the street to the other along the side of the foot-path, parallel to the line on the other side of the way? or, in other words, are the boundary walls of the







iron work, Messrs. Hardy and Padmore, of Worcester; for the furniture, Mr. Chapman, of Newcastle; for the heating apparatus and gas-fittings, Mr. Whitehead, of Preston. The china door furniture was made by Messrs. Mayor, Brothers, and Elliot, of Dale Hall; and the iron-work for the vane by Messrs. Skidmore, of Coventry. The modelling of the figure of the vane and the carving of the caryatides, were by Mr. Wood, of Lichfield. The whole has been carried out under the surveillance of Mr. Ralph Hales, the surveyor to the Local Board, from the designs and under the superintendence of Mr. George T. Robinson, of Leamington, architect.

#### ON SUBMARINE ELECTRIC TELEGRAPHS. INSTITUTION OF CIVIL ENGINEERS.

On January 20th and 27th, Mr. I. K. Brunel in the chair, the discussion on Mr. Window's paper, "On Submarine Telegraphs," occupied both evenings. A description was given of the two kinds of submarine cables employed, the simple cable, composed of one wire in each non-conducting envelope, a certain number of them being laid down side by side, so that in case of a casualty occurring to one wire the others might be made use of, and the compound cable, wherein a given number of wires were covered by one envelope of iron wire. The recent casualties occurring to these cables were quoted in support of the advantages offered by the simple cable; as, in consequence, the *Cable*, which was of the compound kind, being torn asunder by the anchor of a vessel during the late gales, there had ensued considerable inconvenience, until the transit of the messages could be arranged by another route, whereas the simple cables, although partially injured, had never ceased to be capable of conveying messages.

The chief point suggested for discussion was the difficulty of working, at a satisfactory rate, through such a length of cable as that now being constructed to connect Europe with America. There was reason to believe that the effects of the phenomena of induction and retardation were exaggerated. The electrical conditions of an underground wire coincided with those of a submarine wire. The first English underground line of any importance coated with gutta percha was that laid by the Magnetic Company in 1851, between Liverpool and Manchester.

Some time since Mr. Charles Bright, in conjunction with Mr. Whitehouse, had made some experiments through 2,000 miles of wire, connected so as to form a continuous circuit, terminating at both ends in the earth. Intermediate instruments were placed at each loop, to test the thorough action of the electrical waves through the entire length, and signals were clearly defined at a rate of ten to twelve words per minute. Two large induction coils, three feet in length, excited by a powerful "Grove" battery of fifty pint cells, but connected for quantity in sets of ten, were used to generate the currents, which were very powerful. From all that had been shown in the paper, it was contended that no difficulty was likely to arise in working from Ireland to Newfoundland that could not be effectually dealt with.

It was observed that, although Mr. Crampton's name had been prominently mentioned, in connection with the first successful and permanent application of submarine cables, he did not in any way claim the merit of the invention, and was most anxious to bring forward the legitimate claims to priority of all those who had made the investigations upon which the system was based, and to give their share of merit to all who had co-operated with him, in the actual operation of laying down the first working cable. The invention, or discovery, resulted in fact from the combined investigations and experiments of several gentlemen, as had been observed in the paper; and, in corroboration of this, a tracing was exhibited of a drawing made for Professor Wheatstone in 1840, showing the submarine cable in its details of construction, insulated by tarred yarn and covered with iron wire; and the mode of laying down and picking up was also shown. There could not be any doubt of the authenticity of the drawing, and it was known that Lutwiche, who made it, went to Australia in 1841, and had not since been in this country. It was always said of him that he had aided Professor Wheatstone in working out the mechanical details of the proposed system of submarine telegraphs, stated by the professor, before a Parliamentary committee, to be practicable.

The names of Mr. Wollaston, an early labourer in the field, of Messrs. Wilkins and Weatherly, who attended to the machinery for constructing the cable, — of Mr. Newall, who made the cable, — of Mr. Statham, who effected the gutta percha insulation, — of Messrs. Davis and Campbell, solicitors, to whose energy and confidence the ultimate success was so greatly due, — and of Mr. Brett, whose indomitable perseverance had kept the subject constantly before the public, were successively mentioned, and their re-

spective shares in the merit of the submarine telegraph duly apportioned.

From investigations it appeared, that without any direct trial in long subterranean or submarine wires, but by reasoning on the known facts and measurements regarding electric conduction through copper, and electric induction across solid insulators, there were strong grounds for confidence, in expecting that messages could be sent during the day of twenty-four hours, through such a cable as was proposed to be laid across the Atlantic. There was even reason to think that rate might be ultimately exceeded, by the perfecting of the system introduced by Mr. Whitehouse.

In some experiments through a length of 1,600 miles of wire, made with varying battery powers, gradually increased, by successive additions, from thirty-one cells to sixteen times thirty-one cells, there was no sensible variation in the velocity of the currents, which was found on an average to be about 1,000 miles per second.

It was observed, that the statement of Professor Faraday, that different and distinct waves of electricity might co-exist in any long submarine conductor, at the same instant of time, was fully borne out by the recent researches of Mr. Whitehouse. In a length of wire of 1,020 miles, three signals of a signal stroke bell had been distinctly heard after the hand had ceased to transmit; and in a length of 498 miles, two such signals in answer had been heard.

It was remarked that the subject under discussion involved two principal questions, which should be discussed separately, namely, the mechanical one of insulating, shielding, and submerging the metallic conductor, and the electrical question of transmitting messages through the same when laid. With regard to the first, it was shown that Mr. Werner Siemens, of Berlin, discovered the non-conducting property of gutta percha in 1846; and that in the spring of 1847, he proposed to the Prussian Government the establishment of underground line wires, coated with that material. In the autumn of that year an experimental line of 20 miles in length, from Gros Becu to Berlin, was completed, and was found to work so successfully, that in the years 1848-9, about 3,000 miles were laid on this system. In March, 1848, several miles of copper wire, coated with gutta percha by means of the cylinder machine, were submerged in the harbour of Kiel, for the purpose of establishing an electric communication between the shore and several points in the deep channel, and this was asserted to be the first attempt ever made to establish submarine communications. It was suggested that the passage of an electric wave through a cable might be accelerated to nearly four times its natural velocity, by simply returning the current through a second insulated wire within the cable, instead of through the earth. The present successful submarine cables were a combination of a perfectly insulated wire, contained within exterior strong iron wires, running in a longitudinal spiral direction. The invention of this kind of cable was claimed for Mr. Edward Highton, on the authority of a judgment stated to have been given in the *Cour Impériale* de Paris, and it was asserted that the Solicitor-General for England concurred in this opinion. Although gutta percha, when buried in the earth, and acted upon under peculiar circumstances, was subject to decay, yet, as far as past experience had gone, sea water seemed to be a preservative of that gum. It was suggested that the conducting wire of a subterranean or submarine telegraph might be protected from oxidation or decay at any point of leakage, by means of an electric current.

#### DAINGEROUS STRUCTURES UNDER THE METROPOLITAN BUILDING ACT.

In Mr. Haywood's last annual Report to the Commissioners of City Sewers, he says, under the head of "Dangerous Structures,"—

"In the year 1855 the Amended Metropolitan Building Act placed the control of ruinous buildings with the commission. Upon the 1st of January, 1856, the Act became operative. The commission immediately organised the system of carrying the provisions of the Act into effect; and, throughout the year, their transactions, consequent upon this additional power, have largely increased their business.

During the year 1856 the number of structures reported upon by surveyors appointed by the commission was 286, the number of cases heard before magistrates was 24, the number of buildings shored up during the year was 150, the number of cases certified by the surveyors as being completed was 170. Almost the first cases dealt with by the commission were the most prominent of those structures which had been shored up previously to 1856, and had been long standing nuisances. I may mention Nos. 98 and 99, Cheapside. The engineer then proceeds at some

length to treat upon the subject of hoards and scaffolds, and then says,—"Projections over public ways have given the commission their usual amount of trouble during the past year, and although convictions of offenders have sometimes ensued, still projections over public ways remain a difficult subject of management, and are, in my opinion, likely to become more so. I can only see one remedy for it—which I am convinced must be applied at a future day—the entire prevention of all projections over the public way within certain limits as to height."

#### NEW HOSPITAL AND OTHER BUILDINGS AT ADELAIDE.

The new hospital at Adelaide (South Australia), or rather, a portion of the final edifice, has now been erected, and, by last accounts, was shortly to supersede the old hospital. The new building is in the Italian style of architecture, and is said to unite excellent internal arrangements with a handsome exterior. Its extreme length from east to west is 196 feet, and its depth from north to south 108 feet. The elevation is 38 feet, and the area covered by it is 1,277 square yards, or about a quarter of an acre. It contains four large wards, two upstairs and two below, 56 feet long by 30 feet wide, each capable of containing at least twenty beds. There are, in addition, twenty-three rooms on the ground-floor, including two commodious accident wards, and an operating theatre, surgeon's rooms, committee-room, drug-store, bath-room, dispensary, and apartments for wardsmen and nurses. On the upper floor there are sixteen rooms besides the wards, with every necessary accommodation for washing, &c. and conveniences for isolating patients. The upper floor is reached by three staircases, built of Sydney cedar, with balustrades of Singapore cedar, which lead to two corridors, 36 feet and 44 feet long, respectively. On the ground-floor there are two corridors, the main one being 124 feet, and the minor 60 feet long, and there is also a verandah extending for 60 feet. The building is furnished with a system of ventilating pipes. Water is supplied to all the rooms. The centre of the building, as complete, is surrounded by a square tower 64 feet in height, enclosing a tank capable of containing 1,500 gallons of water. Immediately behind the centre are the kitchens, but they are not yet complete. The fault of the building appears to be, that the portion which will be the centre of the complete hospital is too low, and much out of keeping with the rest of the structure; a defect which is said to appear the more striking from the altitude of the tower above the rest of the edifice. With this qualification, the new hospital is regarded as a creditable production. The architect is Mr. Edward Hamilton, and the builder, Mr. Farr. The total cost of the building is, we understand, 10,000l.

The more recent buildings of this city, fortunately, give promise of an abandonment of the gaudy style of building; and, even in two or three story houses, says a local authority, flights of stairs are now seldom omitted. "There is the Supreme Court, an imposing-looking structure; the Bank of Australia, both imposing and elegant; the chapel in Frie-street, with an agreeable appearance, not often seen in so young a country. These, indeed, show that there is some taste in the colony, and the most recent dwelling-houses make a nearer approach to convenience and comfort than any that have preceded them. The Legislative Council-chamber is a pretty building, because it is a copy of a picturesque town-hall in one of the Midland Counties of England. The Police Barracks and Armoury, whatever may be their internal arrangements, are bare and unattractive in the extreme. The Lunatic Asylum is intended to be an elegant Gothic building—but its harsh and attenuated proportions, and narrow windows, give it a gaol-like and close appearance."

#### RECENT PATENTS.\*

1577. JOSEPH ADSHEAD, Manchester.—*A new Application of a known Material to be used as a Substitute for Plastering, Painting, Papering, Whitewashing, and Colouring.* Dated 5th July, 1856.—This invention consists in the use or employment of the painted or distempred and varnished fabrics known as oil baize or oil cloth, as a substitute for plastering, painting, paperhanging, whitewashing, and colouring houses, ships, &c.

1537. F. G. SANDERS, Poole, Dorset.—*Manufacture of Ornamental Floor and other Tiles, Bricks, Slabs, and other similar Articles.* Dated 1st July, 1856.—This invention consists in making the above articles of pulverised clay in various colours or designs, to render them applicable to decorative and ornamental purposes, by combining pulverised clay of different colours in such manner that the manufactured articles will have a variegated or ornamental

\* From the Engineer.



appearance given to them by the particular arrangement of the materials.

1574. **LOUIS CORNIDES**, Trafalgar-square, London.—*Cementing and Uniting together Plain or Ornamental Surfaces of Glass, or in Uniting Surfaces of Glass to Surfaces of Metal or other Material*. Dated 4th July, 1856.—The transparent cementing compositions or solutions are operated upon in an air-tight and air-exhausted apparatus, into which the materials to be united are placed after the contact surfaces have been coated. Cement No. 1 is composed of four parts of gum damar, or other transparent gums or resins, mixed with one part of spirits of turpentine or other solvents. Cement No. 2 is composed of one part gelatine, one part sugar, and eight parts water. No. 3 cement is composed of four parts gelatine, one part sugar, four parts water, and 1-16th part of creosote, thoroughly mixed and incorporated together.

1605. **HENRY PAGE**, Whitechapel road, London.—*Ornamenting or Decorating Glass*. Dated 8th July, 1856.—The designs with which the surface of glass is to be ornamented or decorated are cut on blocks with a raised surface, after the manner of blocks used in calico-printing, paper-staining, &c. Or the designs are cut out of this metal (or other material), as in stencilling. If cut on blocks, the blocks are dipped and receive the colour from a sieve or roller as in paper-staining. If cut out in metal or other plates, the colour is applied with a brush, and may be applied at once to the surface of the glass after it is prepared.

1621. **D. W. HAYDEN**, Glasgow.—*Fastening for Window-shutters*.—Dated 9th July, 1856, but not proceeded with.—Instead of loose and complex fastenings the present invention provides for the obtaining of complete security by means of details, which are always retained in their place, and can never be mislaid or lost, whilst the acts of fastening or unfastening are simple and almost automatic.

1576. **JENS POSS**, Manchester.—*Cutting and Sawing*. Dated 5th July, 1856, but not proceeded with.—The cutter is formed of two thin steel blades, the edges which are made plain or indented according to the nature of the substances to be operated upon. These two blades are brought in contact with one another, or nearly so, they being passed between two pairs of adjustable rollers, placed the one pair above, and at a convenient distance from, a table or support for the material that is to be cut, and the other pair under the said table. The blades are stretched over two pulleys, the one pulley above the top set of rollers, and the other under the bottom set. As the two blades are cutting in opposite directions, or against one another, it will be seen that the material, being pulled against the edges of the blades, will be acted upon in a manner similar to that produced by a pair of shears or scissors.

#### RAILWAYS ON COMMON ROADS.

I HAVE read with much pleasure the able letter of our correspondent, "Joseph Lockwood," and entitled "Railways on Common Roads;" and, as it is a subject which I have had under my consideration for some years, I venture to trouble you with a few remarks. I am glad to find that some attention has been devoted to this matter, and that our continental neighbours are really awake to the fact that large lines require feeders, and that they are using legitimate means to increase their traffic, and develop the resources of the districts through which they run. I am convinced that an arrangement of this sort is one such required in this country, and that even if the executives of the main lines do not examine and take up the subject, probably, when public attention has been called to its advantages in your valuable paper, something may yet be done, either with or without their assistance.

If the outlying towns become awake to the fact that they, by a moderate outlay, may embrace the advantages of railway communication even in a modified shape, you may rest assured it will not be long before some inquiry be made into the advantages and possibilities of "travways," and easy travelling, over cramped buses (sometimes not too clean) and uncertain accommodation, or, in eight cases out of ten, on your arrival at the station per train, you find an alternative but to leave your luggage and make use of nature's "locomotive," or to be politely fleeced under the guise of special hiring.

Although the towns in the United Kingdom having railway stations are numerous; and that, considering the network of railways now spread over England and Scotland, it would appear to a casual observer that ample accommodation was provided, and that there was little room for any auxiliary stations, a careful examination will at once convince that a wide field is open to carry into eminently practical operation a system of intercommunication, as suggested by your recent impression. The benefit of station accommodation has been directly extended to a great

number of towns, still the places having such advantages only amount in the aggregate to about 2,000; and if the population returns be examined, it will be found that, although the principal towns have been especially cared for in the establishment of the railway system, there are yet nearly 5,000 towns or villages without a railway station, and in the majority of instances without even the "shaky omnibus" so graphically described by Mr. Lockwood.

There are many towns to and from which even a tramroad would be an unprofitable speculation, but there are also a great number of towns which would only be too glad to avail themselves of tram-roads, and to contribute a considerable portion of the required cost of laying down to bring themselves within regular and certain communication with the main line of the nearest railway; and I think it only requires a comprehensive plan to be submitted for consideration, to meet with approval, and ultimate adoption. The old saying of "Heaven helps those who help themselves" would apply in this particular instance; and those towns which are now in a comparatively isolated state, by adopting a proper system of horse railways, might emerge from their isolation, and, by re-connection with the main stream of communication, rub off the rust accumulated by partial non-association, and become valuable feeders, and part and parcel of a system in a secondary, if not able to attain a primary position.

C. W. K.

#### Books Received.

*The Cabinet Lawyer: a Popular Digest of the Laws of England; with the Criminal Law of England, a Dictionary of Law Terms, &c.* Seventeenth edition, extended and corrected throughout. London: Longman and Co. 1857.

"THE CABINET LAWYER" is so standard and well known a work for popular use, and so useful a book to keep people out of difficulties, that it is only requisite here to record another proof of popular estimation, namely, the issue of the seventeenth edition. For masters and workmen, landlords and tenants, inventors and patentees, sanitary reformers, business people in general, and a host of others, this is one of the most valuable books of reference possible. Besides all that is indicated slightly in the title as here given, it contains assessed tax tables, stamp and house duties, cost fees and charges in the superior and county courts, &c.; and the present edition, besides being enlarged and revised, contains the statutes and legal decisions to Michaelmas term, 19th and 20th Victoria. Special reference should be made, or attention drawn, to a useful section on the working classes, friendly, industrial, provident, and loan societies, &c.

#### VARIORUM.

The Quarterly contains a long and interesting article on "The History and Antiquities of Northamptonshire, with Suggestions for County Histories." Speaking of the picturesque old manor-houses of the county, the writer gives the following notice of Sir Thomas Tresham:—

"Sir Thomas Tresham, the builder of the triangular lodge at Rushton,\* appears to have been the architectural Durandus of his day, and in his 'New Building' at Lieveiden has left another no less fanciful, but more utilitarian work of constructive symbolism. This curious building is in the form of a Greek cross, with projecting bows at each limb; round the whole house run bands containing the sacred monogram, the instruments of the Passion, and invocations to our Lord and the Blessed Virgin. There can be little doubt of its destination to domestic, not, as is usually asserted, monastic purposes; and it seems to afford an admirable, though expensive model, for a middle-sized house. It owes its present forlorn condition to the same party of Cromwell's soldiery that ransacked Nicholas Ferrar's house at Little Gidding. The market-house at Rothwell, never finished, and inadequately restored in 1827, is another monument of Tresham's architectural taste, and, if we may trust the inscription running round it—*nihil præter bonum commune quaerit, nihil præter decus perenne amicum*—of his public spirit and private friendship; the arms of ninety families of the county form the cornice. A fine alabaster monument, unique as to costume, now removed from the destroyed church of St. Peter's to All Saints', Rushton, represents Sir Thomas in the robes of Prior of the Order of St. John of Jerusalem. There can be little doubt in assigning to him the main part of Rushton Hall, the fine screen of which is a famed example of the Elizabethan style. From the Treshams the estate was

\* A view and details of this curious structure will be found in vol. iv. of *The Builder*, pp. 58, 59, and 253.

bought by Sir William Cockayne, ancestor of the Lords Cullen. It is to the marriage-feast of Bryan, the second Viscount, that the familiar legend belongs. He had been betrothed, at the age of sixteen, to Elizabeth Trentham, a great heiress, but had, while travelling abroad, formed an attachment to an Italian lady of rank, whom he afterwards deserted for his first betrothed. While the wedding-party were feasting in the great hall at Rushton, a strange carriage, drawn by six horses, drew up, and forth stepped a dark lady, who, entering the hall and seizing a goblet, 'to punish his falsehood and pride,' drank perdition to the bridegroom, and having uttered a curse upon his bride, in stronger language than we care to chronicle, to the effect that she should live in wretchedness and die in want, disappeared to be traced no further. The curse was in a great measure fulfilled. She became a beauty of Charles II.'s court, was painted with less than his usual allowance of drapery by Sir Peter Lely, twice gave an asylum to Monmouth in the room at Rushton still called the 'Duke's Room,' and, as might be inferred, living unhappily with her husband, died, notwithstanding her enormous fortune, in comparative penury, at Kettering, at a great age, as late as 1713."

—"The Monthly Review" (Mitchell), the new volume of which is to include political articles occasionally, contains a discriminating paper on the Soulages Collection, urging, properly, that "in the present we must do present things; we must work for present uses with modern appliances and advanced scientific light." The writer, however, is too good-natured to the present, when he suggests that a walk through the collection shows "the great advance in most particulars of similar arts and productions of our own days." In the majority of the departments the very reverse ought to be the impression given.—"The Boards of Health and Burial Boards Officers' Pocket Almanac and Guide for 1857," has appeared (Knight, Fleet-street, publisher by authority to the Board). Besides other matter to be found in almanacs generally, it contains lists of the members of the Metropolitan Board of Works and General Board of Health, an article on Sanitary legislation and progress during 1856, a list of burial boards and of places under the Public Health Act, with names of officers, population of districts, &c. From the article on Sanitary legislation and progress, it appears that during the last three years, sanctions for necessary works of water supply and drainage to the extent of 1,600,000, have been granted, being more than half a million sterling beyond the amount granted during the preceding 5½ years, namely 1,056,000.—"The Literary and Scientific Register and Almanac for 1857," by J. W. G. Gatch, M.R.C.S.L., late Foreign Service Queen's Messenger, and dedicated to H.R.H. the Prince Consort (Bogue, Fleet-street), appears to be one of the most generally useful of the host of almanacs now published. It contains an extensive mass of condensed matter relative to scientific, art, and literary subjects, in very small compass, and bound up as a handy little pocket-book.—"The Post Magazine Almanac and Insurance Directory for 1857," is a well-established and a useful sixpenny almanac, this being the sixteenth yearly issue: it is published by Mr. Pateman, at the "Post Magazine" office, Wine-office Court, Fleet-street, and contains, besides the more permanent matter, lists of projected Assurance Associations, and notices of Assurance Office changes, up to the time of publication.—In the current *Edinburgh Review*, besides an able and kindly notice of Mr. Fergusson's "Handbook of Architecture," there is an article on Human Longevity, interesting to sanitary reformers. The writer will not assent to the doctrine that a century is the natural term of human longevity; but admits "that individual habits may be made to contribute much to the healthy prolongation of life; and we can affirm," he adds, "with assurance, that these habits are such as best accord with the happiness, dignity, and higher destinies of our species."

STAINED GLASS WINDOWS IN SOUTH WALES.—With reference to the stained glass windows executed for the church of Lanfair-Nantgwyn, in South Wales, and mentioned in our last, we are asked to say that the cartoons were designed and prepared by Mr. Alfred Bell, as they were also for some of the windows at Aberporth.



"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.



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Constantinople, and on the 20th of June, an application to G. B.  
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# The Builder.

VOL. XV.—No. 732.



**K**ENSINGTON GORE, as a site for the National Gallery, is not popular. Situated at the western extremity of the metropolis, it is felt that to locate the national collection there, would be to withdraw its beneficial influences, and its ever-fresh delights, from a very large proportion of the population, particularly as respects the working classes. The desire of His Royal Highness Prince Albert to concentrate all that relates to art and science in one Institution is, in the abstract, admirable; and while we dissent from those who would adopt Kensington as this centre, we desire not to be considered as joining any common cry of objection to views entertained by the Prince. If but for the part played by His Royal Highness, in what must still be called *The Great Exhibition*, the kingdom is most deeply indebted to him,—as it is for other acts also. With more information,—shall we say, too, good advisers, in respect of the artistical and literary professions and professors, His Royal Highness might, with ease, become the most popular personage in the country, and, while doing an immense amount of good, create for himself a reputation which posterity would not let die. This, however, is not now our theme.

It appears by the plan of the land at Kensington that it consists of about eighty-eight acres, of which about fifty-two acres lie between the main roads, forming its principal sub-division; upon which are proposed to be erected the National Gallery, the Colleges of Art and Science, and the Museums of Industrial Art and Patented Inventions, in the whole nearly 6,000 squares of building. About ten acres of the site appear to be devoted to roads, and the remainder, about twenty-six acres, to outlying plots of ground of irregular form, proposed for the accommodation of the learned societies, a music-hall, official residences, &c. &c. The wedge-like plot of ground, towards Kensington Gore, which, although in the midst of the site, forms no part of it,—having a frontage of about 320 feet to the high road, and extending about 1,100 feet into the principal sub-division of the ground, is a serious drawback upon any architectural display that might be made towards Hyde-park. The estimated extent of building is calculated roughly from a design in the hands of the Royal Commission for the Great Exhibition, and understood to embody the views of those members of it who desire to see the National Gallery on their land at Kensington. The design is founded on that of the Palace at Caserta, and would cover 1,900 squares. The cost of it has been roughly estimated at a million and a half of money; while the other buildings, including laying out the grounds, would probably cost two millions more.

It has been urged amongst the objections that, large as the site is, it is not sufficiently so for such a concentration of artistic and scientific institutions as has been shadowed out, and which some think should include the National Library and the collection of antiquities at the British Museum. Mr. Bruce Allen's project, to which we referred last week, would meet this objection by adding to the site a portion of Hyde-park and Kensington-gardens opposite to

the land already in the hands of the Commissioners, erecting thereon the national galleries of architecture, sculpture, and painting, and connecting the two sites by decorative arched gateways across the Kensington high road. London, however, is not disposed to give up any of its open space here, even were it determined that the National Gallery should be brought to this end of the town.

Our only objection to the scheme rests on the removal of the collection from its present central situation so far to the west of the whole metropolis. It was shown some time ago that by taking in the workhouse and other property at the back of the present National Gallery, a site could be obtained sufficiently large for the purpose; but this would be an expensive affair, and, moreover, would necessitate the destruction of a building which would otherwise serve a useful purpose for many years to come. The assertion that the pictures must necessarily be more damaged by the impurities of the atmosphere in the centre of the town than at Kensington, is not generally entertained. Private collections in London are not found to suffer: the tendency of inventions and opinion is to lessen the amount of smoke allowed to escape into the atmosphere; and good ventilation would prevent the deposition of dust on the pictures, while glazing the paintings would set this part of the question altogether at rest.

A scheme has been suggested by Sir Charles Barry, which, while leaving the present building in Trafalgar-square for artistic or educational purposes, would retain the national collection in a central position: and this we would now lay before the public. It consists in the appropriation of the British Museum, with the enlarged title of "*The British Museum of Art and Literature*."

This Institution occupies a central portion of the metropolis: its site is lofty and commanding, the soil good, and well drained; it is open to the north, and has eighty-two acres of open space in the squares, which adjoin, or are immediately contiguous to it. It contains at present 1,160 squares of building, and stands upon 8½ acres of ground, which, by the addition of the surrounding property, with additional buildings upon it, might be increased to 3,269 squares of building and 13½ acres of ground. It has already cost the country little short of a million of money: it is in a good neighbourhood, well calculated for residences for professors and officers of the Institution, and it has the advantage of the London University as an adjunct in its immediate locality: it is, moreover, a very popular Institution, and only requires the clearing away of a portion of the shabby neighbourhood to the south of it, and the opening up of a new approach to it in that direction, to render it an unexceptionable site for a great National Institution.

It is proposed that this institution should not only be devoted to art and literature, but also to the accommodation of the learned societies. For this purpose it would be necessary to purchase the whole of the surrounding property, extending to Montague-street and Russell-square on the east, to Montague-place on the north, and to Bedford-square and Charlotte-street on the west; and erect additional buildings on the west side of the present buildings.

The quadrangle and the ground story of the building might then be appropriated to the antiquities, the whole of the principal floor to the library, including the manuscripts, prints, and drawings, with the reading-rooms; and the upper floor to the national pictures, which floor, with certain modifications that could be made at moderate cost, might be admirably adapted to receive them, and would not only accommodate the present collection, including the cartoons at Hampton Court, but afford space for a future increase of it to nearly

eight times its present amount, or more than double the extent of space allotted to the pictures in the Louvre. To effect these arrangements, it would be necessary to remove by degrees, as other accommodation could be provided, the whole of the natural history collection, which at present occupies a large portion of the one-pair floor, as well as other portions of the building, to Kensington. The cost of the additions and transformations recommended has been calculated at 130,000*l.* which, however, might be spread over a period of two, or even three years; but upon such an arrangement as would allow of depositing the present collection of national pictures in the rooms proposed for their reception, and providing for the pressing wants of the library, at the end of the first year.

The Institution, it is maintained, even in such a limited and incomplete state, would even then exceed the accommodation for galleries of art and books provided by the Parisian Bibliothèque Impériale and Louvre combined.

For the realization of the entire project ultimately, it would be desirable that the Government should immediately purchase the fee-simple of the whole of the property which surrounds and is immediately contiguous to the present building.

The site at Kensington would then remain for a "*National College of Science*," in its various applications to arts, manufactures, and commerce. For this purpose the distance from the centre of the metropolis would be of less importance, for the feeling of the country at large as regards art is still woefully deficient, and can only be fostered and improved by placing the finest examples of all ages in a central position, as in the haunts, as it were, of the whole metropolis, so that all its inhabitants and all who visit it from the provinces, particularly the industrial and working classes, may have the benefit of being able constantly and easily to inspect them, and thus become familiarised and even imbued with their principles and excellence. With respect to science, the country is already pre-eminent; and the distant locality, therefore, of an institution for its encouragement is not likely to deter that portion of the community who are interested in it, and are anxious to profit by its advantages, from being obliged perchance to go out of their way for the purpose.

The only buildings that would be required, according to this suggestion, would be museums for the exhibition of zoological, botanical, and mineralogical specimens, and for patented inventions, and menagerie for living specimens in the department of natural history; a library of science and theatres, with laboratories for public lectures in every branch of science; combined with a botanical garden, and accommodation for living specimens of the animated kingdom.

The valuable collections in the Department of Natural History, at present at the British Museum, the entire collection of the Museum of Economic Geology, the Trade Museum of the Society of Arts, the collection of patented inventions under the charge of the Patent Office, and possibly one or both of the private collections of the Regent's-park and Surrey Zoological Gardens, if concentrated upon this site, would form such a valuable, instructive, and interesting collection as would not fail to excite a great interest in the institution amongst all classes of the community.

If fully carried out, it might then vie with the Jardin des Plantes, when it would much exceed in acreage, and the Conservatoire des Arts et Métiers combined, of the French capital, and bear an honourable comparison with these noble institutions.

The present National Gallery contains, it is calculated, 27½ squares of building, which could be increased to 448 squares, by removing the present portico and other columns and projections, which now break up its front, and



building upon the wasted forecourt a fresh façade; and it might then be devoted to the teaching of art in all its branches, and the periodical exhibition of modern works and the other purposes of the Royal Academy of Fine Art, who would doubtless be willing to pay, at any rate, part of the outlay incurred.

The objection to Kensington Gore, to which we attach most weight is, as we have already said, the removal of the fine art collections from the centre of the metropolis; the necessity for this step not having been proved. It is most desirable to gather them together in a position within easy reach of the toiling workers in "populous city pent," and it seems to us that sufficient appropriate space to secure a complete and satisfactory arrangement may most readily, and with the least pecuniary outlay, be provided by rendering the building in Great Russell-street

THE BRITISH MUSEUM OF ART AND LITERATURE.

### SO-CALLED MEDLEVAL v. SO-CALLED CLASSIC.

In the controversy which has been going on as to the respective merits of Mediæval and Classic Architecture, there are several points materially affecting the main question, which, although occasionally alluded to, are not kept enough in view in weighing the arguments on either side,—points especially relating to fitness and use, in meeting the many needs of modern national requirement, whatever style may eventually prove to be the best fitted for our use. And unless there is some sort of agreement amongst us as to principles of construction, and true treatment of available materials, it is useless to enter into arguments as to the superiority of any certain school of design.

But, first, as regards the spirit of the two styles. It is impossible to put aside, as though it never existed, the whole of that which has formed the staple of early associations, and which most men have been taught, from childhood upwards, to regard as perfect and beautiful. Moreover, it is impossible not to see a certain amount of beauty and dignity even in the inopportune repetition of the same form, or in a long line of straight or curved cornice, such as is seen in Regent-street or Park-crescent. And every one who has had the opportunity of judging, agrees in giving to Classic architecture its due meed of honour on its own native soil, and under its own native sky. The clear atmosphere of Italy and Greece, the intense and pure light, the genial climate, all combine in bringing out to the utmost perfection the fine flowing lines of the sculpture, the delicate shading of the mouldings, the imposing effect of grand massive outline, and an uncompromising uniformity,—and the very passiveness of the style seems in accordance with, and expressive of, the climate, the country, and the people; just in the same way as the austere and changeable climate of Northern Europe seems suited to display the especial characteristics of the Gothic style; the comparative lack of light requiring deeper hollows and broader and bolder lines, in order to obtain equal richness of effect or depth of shadow, whilst the coldness of the climate and ruggedness of the scenery seem to suggest the suitability of warm colours and picturesque forms; and the crispness and energy, and the bold severity of the Gothic spirit seem suited in every respect to its own place and purpose.

But now for more practical matters. 1. In our climate and country, with occasionally deep snows, and frequent driving rains, a steep roof is less liable than a low one (*ceteris paribus*), to let in the wet; the tiling, or slating, is less liable to be ruffled, or torn up; the timber is less liable to decay from the retention and constant condensation of moisture. It may be said that a steep roof is in itself more costly than a low one; but, then, again, in order to obtain an equal amount of accommodation, the steep roof is actually the least costly of the two.

2. The freedom of the Gothic style, which allows of windows being placed only where they

are wanted, and of being made only of the needful proportion and size, is generally far more accommodating to domestic requirement than the employment, for every purpose of windows, of an oblong shape and uniform position. As regards the use of sashes and casements, it is no question of style at all, but only of construction. Moreover, it is as absurd to say that casements always let in the weather, as it is to urge that sashes always do keep it out. It depends not upon the nature of the thing, but upon the "make" in each particular instance.

3. The Gothic style is in no wise dependent upon the size of stones, or even upon the nature of materials at all, for effective treatment; whilst Classic architecture, when truly carried out, does depend very much for its effect upon the largeness of the materials used; the majority of such buildings now being constructed of bricks, or small stones, cemented over to represent larger blocks. And seeing that bricks are abundant, and that small stone is much the most easily procured, wrought, and fixed, and so the least costly, too, the Gothic can claim some little advantage over the Classic in this respect; and unless the Classic makes good speed in modifying some of these inconsistencies, it will be fairly beaten out of the field in a few years. If it does mean to undergo modification, it must do it quickly.

The introducers of the Classic style are said to have derided the works of the monkish architects of our mediæval cathedrals, in that such lofty structures were carried up of stones no bigger than could be carried from scaffold to scaffold, on men's shoulders; surely the deriders unconsciously paid the greatest possible compliment to the science and ingenuity which could carry out such noble works of art with such slender means, instead of being dependent upon mechanical force for the employment of such materials as the introduction of the new style necessitated. Let their successors look to it, that similar inconsistencies do not attach to them.

It is not to be wondered at that the advocates of Classic architecture have neither time nor inclination to enter deeply into the study of the principles of Pointed architecture. No one can reproach them for not throwing either their heart or their mind into its spirit. And it is only by the principles of true art—independently of its being Classic or Gothic, or anything else—being brought out and presented to their notice, that any architects are likely to change their own beaten track. So that the same may be said, perhaps with equal truth, of all those who have been wholly taken up with the study and practice of either style; and, hence, we may grieve, though we cannot wonder, that there is so small agreement between the two parties even upon points connected with construction and practical use—upon the first principles and elements of architecture; and that such vague notions do prevail as to the true nature of many things which hitherto have hardly come within the sphere of each individual architect's pursuit or practice.

Yet surely it is in the settlement of such questions as these, numerous as they are, that we must look for a hopeful issue in the vitality and true growth of art. If the foundations are bad, there can be no permanent building, however fair the superstructure may be. Such questions as these ought to form the subjects of our controversies much more than they do; indeed, the consideration of them comes properly prior to any question of mere style. These cannot all conform to style. Style may arise out of them. The Classic style does as yet fall short in many such particulars: it disregards many of these so-called minor considerations. And it may be urged more justly against the Classic than against the Gothic, even as now carried out, that an architecture which sets aside circumstances of time and place,—which is unable to localise itself,—which is much dependent upon extraneous sources for the very means of its success, or existence,—which is powerless in its attempts to make efficient use of such means as it can command,—lacks so many essentials of true art, and proves itself so feeble in effecting that which a living art has to accomplish, that men may well doubt if it does really possess all the truth and energy which it

professes to display,—even supposing it to answer fully the ends of a mere utilitarian existence.

Again: the Gothic spirit is even more pliant than the Classic in making use of modern inventions. Failures in individual instances have occurred, in consequence of the imperfect state of the art, not from any defect in it as a style; but the advocates of the Gothic, so far from being unconscious of occasional imperfection on such accounts, are every day discovering the means of rectifying such evils. Happy the style which has no incongruities, or inconsistencies to lament!—or, it may be rather at the present time, happy those who are not quite blind to their own state of imperfection, whilst they see the road to remedy its evils.

As to the relative capabilities of the two styles, each in its modified state, to answer every purpose of civil and domestic, as well as collegiate and ecclesiastical use, much possibly may be said on either side. I will not venture to call the Classic positively incapable of universal application. I can only confess to not having found out its universal fitness. Whereas the Gothic is, to say the least, as fully capable of general adaptation as the Classic, besides being much more expressive of the purpose for which the particular building is designed, notwithstanding the supposed absurdity of using the same style for all purposes, after the fashion of all former ages.

The Gothic style is pre-eminently comprehensive and Catholic; and although the Mediæval architects did universally use the same style for all purposes,—as always must be the case with high art,—yet their buildings did truly and evidently show, at first sight, what their purpose was, as is still the case with all buildings consistently carried out. There is no mistaking the castle for the cathedral, the parsonage for the parish church, the manor-house for the village school, nor yet a public institution for a private residence, a county court for a college, a gymnasium for a guildhall, where each one tells, as it may and ought to tell, its own proper tale. These are wholly and entirely distinct from each other in their general form and feature when the same style and even similar detail are used in all. It is the outline chiefly which distinguishes their several purposes; but if purpose is disregarded in the design, if a church is built with a grand eastern vestibule, or if a house has a well-defined chancel, nave, and porch, then, indeed, all distinctiveness is utterly lost, and all character is swallowed up in unmeaning forms.

And lastly, as to style itself. I quite concur with "Z" in that in order to render the Gothic in all respects suited to the age, it must be much modified, or, as some call it, "debased." Yet not more so than either the modern or the antique Classic. But I cannot see why the reproduction of such a style must be, *primâ facie*, more incongruous than the introduction of a new style from southern Europe in the sixteenth century, or even a continuation of the same style, or some debased phase of it, from that day to our own, unless it is generally acknowledged that art had not degenerated prior to its present revival. Still less can I see how or why a genuine "Protestant" should consider our own Mediæval architecture to be, in its nature, more "Papistical" than that style which has been used by the Church of Rome for all her buildings, from that day to this, unless, indeed, the Papal element has been banished from her pale for the last 300 years.

WILLIAM WHITE.

### CIVIL CONSTRUCTION AS REPRESENTED IN THE PARIS UNIVERSAL EXHIBITION.

REPORTS on the late Paris Universal Exhibition continue to be published, and will serve to make it more and more useful. Several of them should have our attention. At the present moment, however, we would refer specially to the last issued,—an able document on "Civil Construction," by Capt. Fowke, R.E.,—and confining ourselves to the section on tiles, will let the Reporter speak for himself.

The several descriptions of roofing tiles shown in the Paris Exhibition, almost all of which are from France itself, may be considered as belonging to



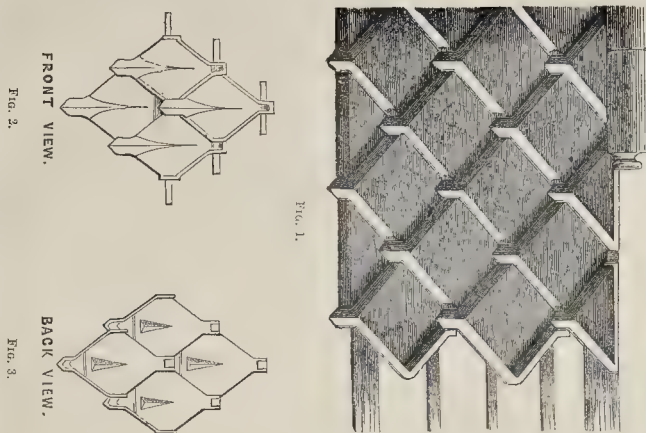


FIG. 1.

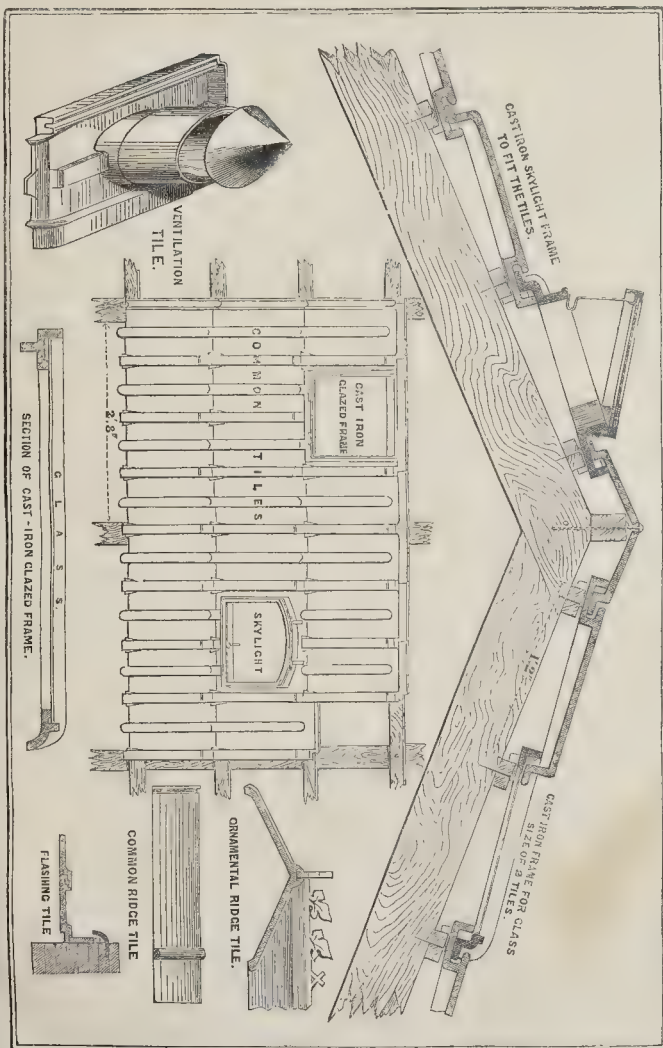


FIG. 4.

one of five different classes, the first of which includes the original flat tile, the examples of which differ merely in the material of which they are composed, and in their greater or less thickness and weight, governed in great measure by such material. The other four classes or general forms of tile are the results of different attempts which have been made from time to time to obviate the great objection to the employment of flat tiles, namely, the necessity of laying them so that the roof is covered at every part of its surface with three thicknesses of tile, and the consequent enormous weight of this description of covering, an evil so great as to have almost entirely banished it from all large modern structures in this country, as more than counterbalancing its undoubted and great advantages of durability, great strength, resistance to the action of the wind, cheapness, and perhaps the most important of all, the fact of its being so bad a conductor of heat as to render the attics of buildings thus covered, less sensible of the extremes of heat and cold, which are so much felt where metal or even slate is employed.

The flat tile is kept in its place by pegs or nails driven through holes in its upper part, and each tile is by this means attached to the lath without being dependent on its neighbours for support. The same rule applies to the next class, which is, as well as the first, flat, and attached in the same way, and in which the attempt to reduce the weight consists merely in cutting away those parts of the tile which are concealed beneath others, and in some cases also in rounding off or pointing more or less to its ornamental character; the result is a tile somewhat in the shape of the blade of a shovel flattened, and in some cases approaching the form of the spade pip on cards, and which is fastened, as in the flat tile, by a peg driven through a hole in the short stalk or handle at its upper extremity; these tiles are further ornamented in many cases by the introduction of figures or patterns in relief on their surface; they have the advantage of being easily fixed, and lighter than the plain flat tile, but still necessitate a very high pitch of roof to enable the laps to be perfectly weatherproof. The first departure from the ordinary Burgundian pattern is illustrated by the tiles exhibited by M. Blondeau, which are merely the former with the lower corners rounded off, and a little scoop at each side taken out of the part which is hidden by the superposed tiles. Some of these tiles are more or less ornamented in relief on the surface, and when fixed have a very pretty effect.

In the fourth class we have the edges inclosing one angle of the tile turned up, and the remaining two down, and the tile laid so that the angle first mentioned shall be uppermost, and that the joints shall run in a diagonal direction, by this means continuing the vertical lap all round the tile, which thus enables it to be employed at a much less inclination, and with so little overlap as to have only one-sixth of the surface hidden or useless for purposes of actual covering; in this tile the peg is also dispensed with as a mode of fastening, the tile having a small projection on the back, at its upper part, by which it is attached to the lath, a slight increase of projection in the ledge at the lower angle, which fits into a corresponding depression in the tile next below, serving still further to secure each in its place. (Fig. 1.) This class may be subdivided into such tiles as are square, and those that are lozenge-shaped; of these, the former, known as the tile Courtois, from the name of its inventor, is perhaps the most simple, while the lozenge-shape gives more scope for the introduction of ornament; the square tile has also the advantage of having a less length of joint in proportion to its length, and consequently of having rather more of its surface exposed than the lozenge.

Each one of the tile Courtois weighs 4.5 lbs. and 180 of them are required for a square of 100 superficial feet, so that the weight of this amount of covering would be 810 lbs. and its cost 44s.

One of the principal exhibitors of the lozenge tile of this class is M. Bardin, of Lyons, whose tile is strengthened by a slight rib along its centre, which adds materially to its ornamental appearance, and enables it to be made extremely thin and light, the square of this description of tiling not amounting to more than 770 lbs. and the single tile being 5.1 lbs.; it is shown in three dimensions, running 150, 250, and 350 tiles to the square, and costing respectively 6s., 3s. 12s. 6d. and 3s. 4s. the thousand tiles, or, for the first two, 1ss. the square, and for No. 3, 22s. 6d. (Figs. 2 and 3.)

But, perhaps, the best and most complete exhibition of roofing tiles is that of Messrs. E. Muller and Co. of Paris, who provide not merely for a covering, but also give the means of introducing skylights, either to open or fixed, ventilation tiles, and of employing tiles as flashing, round chimneys, and in similar situations. The form of the tile seems a little complicated, but not at all so as to render it



more difficult to be fixed, or to require a more skilled description of labour for that operation, and this slight complication does not seem to affect the manufacture in any way, their price not differing from that of the average of the tiles exhibited. This tile, which may be better understood by a reference to the cut (fig. 4), has the fillets or flanges along its lower edge slightly returned parallel to the face of the tile; this return being locked into a corresponding recess in the tile next below it, more effectually secures it from the action of the wind, and at the same time gives a water-tight joint without the necessity of a high pitch. The longitudinal joint is formed by two small fillets on the face of the one tile, fitting into two grooves in the reverse of the next, thus being secured by three edges lapping over two, instead of merely one over one as in the tile Courtois. The method of providing for the insertion of a skylight is extremely simple and ingenious; it consists in having a cast-iron frame, with edges made to correspond with those of the tiles, and of the size of one, two, three, or more tiles; this frame forming the skylight frame is fixed in any part of the roof with the same facility as the tiles themselves, and is, of course, in every respect as weather-proof at the joints. Should light without air be required, recourse is had to a still simpler cast-iron frame, with a pane of glass inserted in it; and should ventilation alone be the object, special ventilating tiles can be introduced as often as necessary while laying the ordinary tiles. In the construction of roofs with the tile of Messrs. Muller, not only is the steep slope of an ordinary tiled roof avoided, but the pitch is reduced far below that of an ordinary slate roof, being only one-eighth of the span, or at a slope of one in four. The weight of a single tile on this system is 5.5 lbs. and as it takes 150 to cover a square, it follows that this quantity of covering weighs 825 lbs. or somewhat more than with some of the *lozenge* shaped tiles, but this is more than compensated for by the decrease in amount of covering consequent on the alteration of pitch, by the additional security afforded against wind and weather, and by the facility obtained in the fitting of skylights, &c. by the employment of the tiles of Messrs. E. Muller and Co. whose merit the jury of this class has acknowledged by the award of a first-class medal, and whose productions are well worthy the attention of constructors in this country.

M. Volland, of Chateauroux, exhibits several specimens of pavement, some in patterns formed with diamond-shaped tiles, imitating dark and light marbles, interspersed with white, red, and black, the price of which is 6d. per foot superficial, one a chess-board pattern in black and white at 5d. per foot superficial, also one at the same price in which white octagonal tiles are filled in with small square red ones, a sample at 4d. the foot, in which white hexagonal tiles and diamond-shaped imitative marble make up the figure, and finally a very pretty herring-bone brick pavement, in which small cubes of black brick are introduced with good effect between the ends of the other bricks, the price being 8d. a foot.

We shall return to the report at greater length hereafter.

#### THE SOULAGES COLLECTION IN RESPECT OF DECORATIVE ART.

We would call public attention to the following able and pertinent report of the committee appointed by the Council of the Royal Institute of British Architects to examine the Soulages Collection, and report their opinion whether it would be expedient to recommend its purchase by the Government, which was read at the meeting of the Institute on the 9th inst.:

Your committee have to report that, pursuant to your instructions, they have attended twice at Marlborough House, and have also at various periods individually inspected the Soulages Collection, and compared the specimens contained in it with those derived from the sale of the late Mr. Bernal's effects, and other sources. They have experienced the utmost attention on the part of the authorities and officers of the Department of Science and Art, who furnished them with copies of the admirable report drawn up by Mr. Bernal, and afforded them every facility of access. Before entering upon any criticism of the collection itself, your committee think it desirable to allude briefly to the influences which such a collection

may have upon the tastes and studies of the architect, and to the share which architecture, as the controlling spirit of decoration and ornament, has had in eliciting productions in which art and industry are harmoniously combined. For the illustration of such questions the collection now under notice, containing specimens, ranging generally between the fifteenth and sixteenth centuries, of elaborate works in almost every material applicable to domestic use or embellishment, offers subjects of rare importance, meriting the most serious consideration of all, who would anticipate for this country an advance in the arts of design coincident with the great strides which have been made of late years in science and material prosperity.

#### The Soulages Collection.

The enlarged views in regard to architectural decoration, which have recently revived the taste for ornamental design that some centuries ago was so prevalent in England, render it necessary for the architect of the present day to enter upon new fields of study; to seek for new sources of inspiration; and to acquaint himself with all the formulas of conception to be found in the productions of other branches of science and art than those which are directly structural, in order to qualify himself to take that lead in directing public taste which his position and vocation call upon him to assume. It is indisputable that in every age the sources of design for all classes of manufacture have been identified with the productions of the architect, and frequently derived from his conceptions. Among the ancients the fictile vases and the bronzes may be quoted in illustration of this fact, as constantly borrowing their ornaments from the buildings of antiquity; and in the Medieval period, the pillars, the buttresses, the carving, the pannels and architectural divisions, all of which were applied to *filigree* of every description, were adopted from the structural details of the churches, often with little or no reference to material, or other properties of adaptation.

As the architect's development of the artistic element is the highest applicable to the common purposes of life, it is obvious that the revival of obsolete sources of decoration demands the utmost circumspection. To acquit himself conscientiously of such a responsibility, he must neglect no means of information—he must underrate no style, no object, no department, which may contribute to those harmonious effects which it is his province to endeavour on all occasions to ensure. He must enter upon a new career of thought, and acquaint himself with the history and fluctuations that have distinguished each phase of the origin, development, and decay of every class of applied ornament—so as to adopt it with propriety, taste, and originality, as an ever fresh idea, and not as a mere "refinement" of existing forms.

Collections like those of M. Soulages and of the late Mr. Bernal, are of the utmost value to the architect, reflecting as they do the arts, manufacture, skill and taste of various countries and periods; and showing their application to the ordinary uses of life in the several grades of society. No less remarkable are they when set in contrast with the industrial practice of the first quarter of the present century, a period of singular barrenness in technical design, since they serve to bear only a more vivid testimony to the extent to which art was applied in the most trifling and ordinary utensils and objects, during those palmy days of Italian grandeur when were executed the majority of the specimens of which these collections consist. During such periods the sentiment of art would appear to have been absolutely necessary to commend the productions of the skilled mechanic to general acceptance. And it is remarkable to observe that taste never became the exclusive property of any one department or class of productions, but reigned a universal element; the sign of a general and concurrent deterioration in every other. Such collections represent a world-wide school, in which to form a universal rather than a particular standard of national taste; and thus the student is freed from the trammels of that confined view of style which the traditions of any one period, limited within a narrow geographical circle, would bind around him. France, Italy, Germany, and England, have furnished their quota of excellence in many ways to the specimens now brought together in Marlborough House; and from the very distinctive peculiarities which characterize the various productions, a wider field is afforded for the wares of the manufacturer of the present day, fresh tastes are excited, and an earnest longing is created in the purchaser for the possession of more refined and excellent productions, raising them above mere mechanical results, enlarging their sphere of application, and necessarily stimulating production.

There can be little healthy progress in national manufactures so long as the commonest and mere material wants only have to be satisfied; but directly cultivated taste seeks for superior execution and more refined elegance, enterprise and skill are enlisted in

the gratification of these tendencies, progressive improvements constantly arise, industry and commerce gain by the movement, and the material prosperity of those engaged therein necessarily follows.

#### Enamels.

There are many arts which once flourished in this country, and which have been applied only in a very limited manner within a century or two, while there are others which have never received in Great Britain the development of which they are capable, and which in other countries have been productive of very important results. Enamelling was at one time extensively used in England, as we may see on the metallic monuments in Westminster Abbey, some of the recumbent figures of which were covered with elaborate ornaments of this nature, as also the heraldic shields occasionally inserted in brasses. It is now almost entirely confined to smaller works of the jeweller's craft, or elaborate reproductions of choice pictures and portraits: whereas in the Bernal and Soulages collections are to be found medallions and plaques of considerable dimensions, and the art applied to tazze, inkstands, and self-collars, enriched with most delicate arabesques and historical subjects. Such specimens give renewed hope that we may ultimately realize, at moderate cost, the process of enamelling on slabs of lava, brought under the attention of this Institute some years since by an honorary and corresponding member, Mons. Hittorf, now President of the Section of Fine Arts of the Institute of France, or medallion portraits of a nature somewhat similar to those introduced in the facade of the Académie des Beaux Arts, at Paris, by Mons. Duban. There seems no reason, if public taste afforded the encouragement, why enamelled panels might not be successfully introduced as an architectural decoration, durable as to material, brilliant in colour, and unchangeable in effect. A notable instance of such an application of enamel existed in the famous Chateau de Madrid, in the Bois de Boulogne, Paris, which has been the theme of praise by all writers who have mentioned it. The facade was adorned with enamel 5 feet high by 3 feet 4 inches wide, nine of which still exist in the Hôtel de Clugny.\* Were such panels capable of being multiplied at a moderate cost, we might from time to time introduce in our buildings a series of all but imperishable portraits of our sovereigns, of eminent men, and historical characters; not, as in past times, confining the subjects of such enamels to the twelve Caesars, the Labours of Hercules, or such pedantic abstractions, but adopting themes from our own poets, writers, and historians; and these would come more home to the feelings, and commemorate for popular honour and respect those celebrities who have illustrated our own history and have rendered eminent services to our country.

#### Medals.

Medal die engraving is at present of very restricted application, being generally limited in this country to too small a class of objects; and little patronage is bestowed upon what was, among the ancients, and after the revival, a most important department of art production. The medals and coinage of antiquity are upon a par with the productions of Pheidias, Lysippus, and Praxiteles; and the coins of Sicily, and many towns of Greece, the medals of Alexander and his successors, as well as the Roman Imperial series, reflect the genius of the brightest eras of antique taste and skill. Of scarcely inferior merit were the Italian medals, and the medallions of various sizes—whether cast or struck—of the fifteenth and sixteenth centuries, are full of intense meaning, handing down to us, with the utmost vigour and refinement of expression, the lineaments of the great, the noble, or the illustrious of these periods.

Of such gems, the Soulages collection contains 106 specimens, chiefly of Italian and French art, struck or cast, presenting many varieties of treatment, and suggestive of an useful application of such materials in modern times, combining valuable aesthetic results with historical records of an almost imperishable nature.

#### Glass.

The brilliant progress which has been made in the manufacture of glass in this country within the few years that have elapsed since the removal of those legal restrictions which arrested all improvement, and threw this country behind others, invests the articles of this class in the Soulages collection with great interest. Without entering into the technical processes of the "laticcio," "citra di trina," "mille-fiori," "aventurine," and "schmelze," some of which are already practiced in England, we may at once confidently predict that the study of choice specimens like those presented to view in Marlborough House will lead to the development of new combinations,

\* It is said that some were purchased by Englishmen, and are now in this country. It would be a great service to the arts if they could be discovered, and exposed in the Great Exhibition about to be opened at Manchester.

\* The instructive notes and observations appended to each class of objects introduce the reader at once into a brief history and analysis of each system. It is impossible to overestimate the additional instruction which is the possession of such a volume conferred upon the casual visitor to the museums and collections in this country.



which will some day distinguish our English manufactures as much as, if not more than, their Italian or German predecessors. The rapid advance in the scientific manufacture of glass, and the new applications of that material which have recently been brought to light for the supply of architectural requirements, are alone sufficient to convince us that this art is capable of the utmost development through English enterprise.

#### Bronzes.

The 106 objects in bronze, comprised in the Soulagues collection, illustrate a class of manufacture hitherto of very limited application in England; whereas, in her Eastern dependencies, the artists in bronze for centuries past have produced, even in common utensils, elegance of form and unrivalled decoration in metallic inlay. This latter elegant process, which was of essentially Oriental origin, was eagerly adopted by the Venetians, and reproduced in their Damascened ware.

Tens of thousands of French artisans are maintained by their skilful treatment of bronze, now an essential article of furniture in that country, and purchased with avidity in England, and indeed throughout Europe and America. So unpractised are our founders in the successful casting of such delicate objects, and so deficient are we in educated chasers and finishers, that we have to depend mainly on foreigners for the supply of small bronzes. Their production by English manufacturers is, indeed, so costly, that the Art-Union of London (who for many years devoted much attention to the subject, and at great expense brought out various statuettes and busts), anxious as that body are to encourage the art, have been almost compelled to abandon the attempt to any great extent, and only persevere under the most discouraging circumstances. The beautiful works of art in bronze, so abundant in Paris, find no rivalry here. And we feel, therefore, that the acquisition of the specimens in this collection, although far too limited for the urgent necessity that exists for the supply of good models in this branch of industry, would be desirable, as tending to draw public attention to this important and neglected branch of art manufactures. We do not venture to class them in design or execution with the matchless productions of antiquity, such as those preserved in the Museum of the Studio at Naples—or even with modern ones of the highest class of art—but still there are many objects gracefully composed, elegant in form, and especially suggestive of improvement in those departments of domestic economy into which they might be introduced with propriety.

#### Decorative Furniture.

There are 100 pieces\* of furniture and textile fabrics, consisting of chairs, cabinets, coffers, tables, buffets, dressoirs, metallic mirrors, a magnificent lantern, the cornice of a room, three pairs of bellows of tasteful design and execution, and an elaborate chimney-piece. These present a store of useful and applicable articles of various merit. Some few are carved with considerable skill, others are distinguished for their general design or graceful proportions. Some have been considerably repaired or modified by inferior hands, but others remain intact. The buffets and armoirs are suggestive, and admit of easy application to our present uses. The chestnut-wood coffers, the marriage-chests of Italian history and romance, have evidently originated in a superior class of artists, and the metal mirrors, with their carved frames, are graceful illustrations of a curious variety of domestic utensils. In all these articles it is necessary to discriminate between the production of the manufacturer who repeats, and the treatment of his material by the artist who originates. We may still be enabled to recognise clearly those forms and expressions of original ideas, vulgarised by the common taste of those who repeat, or demand repetition; for, although coarse in parts or gross in detail, they may still retain some of the elements of that antecedent period, when livelier imagination, more refinement, and truer sentiment prevailed. The textile fabrics contain some very elegant ornamental patterns, and several curious specimens of embroidery.

#### Majolica.

We have reserved for our concluding remarks the most numerous and most important section of this collection, namely, the Majolica, and enamelled earthen and stone wares, consisting of 168 pieces.† We shall not enlarge upon the mutual relations of art and material, nor upon the extent to which all branches of fine art are influenced by the materials employed. This is especially perceptible in the

earthenwares of Greek art and Majolica, in contrast with the porcelains of Asia and Europe, and their works in this class are as distinct as the earthen of which they are composed. Nor do we pretend to review the various processes of manufacture, nor the mysteries of the glaze and brilliant lustres, which give so much attraction to these admirable productions, such as the metallic reflexions, the changing colours, the mother-of-pearl of Gubbio, Urbino, Pesaro, Caffaggiolo, Faenza, Castel Durante, or of other towns or states of Italy, where the enlightened patronages of the dukes and princes to these wares realized a reputation that could hardly otherwise have been acquired by places of such secondary importance. The earlier pieces of Majolica retain much of the noble simplicity of form and richness of decoration of their Hispano-Moorish origin, and the later ones have a higher aim than the porcelains of Germany and France, whose art decorations occasionally present a fantastic and capricious application, and generally a minute and highly-wrought elaboration by superior artists, almost too precious for the frail material upon which it is bestowed, limiting the products to the tables only of the most affluent.

The Majolica on the contrary, admits, when once the design is settled, of a rapid execution by practised secondary hands; by this economy in the production most carefully designed objects may be brought within the means of the humbler admirer of art. This series includes some choice specimens\* of Bernard de Palissy's skill, and embraces every class of object fitted for the table, or to adorn the buffet or dressoir,—such as plateaux, plaques, vases, plates, fruitiers, tazze, trays, or baskets, cups, flasks, bowls, ewers, sauce-boats, salt-cellars, and other articles. The finest of these are grouped in one case, and constitute a series of the highest æsthetic value, as regards their form, the combinations of colour, and treatment of decoration. They are available as types, or may be considered educationally as specimens to be followed, improved, or varied: there is not one which is not valuable for the one or other purpose. The success may be problematical of any attempt to derange the predilections and established favour with which the public have been accustomed to regard certain articles of use in common life; but we believe that the public mind is prepared and anxious to adopt a higher state of art-treatment in such objects.

Without advocating for a moment a blind adherence to any of these forms, or the modes of decoration which distinguish these wares, in which occasionally the execution may not rise to the dignity of the subject—in which extravagance may now and then have usurped the place of good taste, and in which noble forms may be here and there applied to inferior uses,—we may clearly recognise so much that is noble and brilliant, so much that is full of feeling and expression, and such an appeal to a higher intelligence, as to warrant our maintaining distinctly, that access to such examples must improve the taste of the people, and elevate the aspirations of every mind for something better than those we already possess. This consummation we are indeed justified in prognosticating (from the successful efforts in Majolica made by the firm of Minton for the Paris Universal Exhibition of 1855), our own countrymen on the banks of the Trent and the Severn are fully able to attain. From these exertions we may reasonably contemplate that in a few years, by the teaching aid of such examples as those contained in the Soulagues Collection, by the union of manufacturing skill in the manipulation with artistic power in the embellishment, and by due encouragement from the public, Majolica will become in this country a most attractive and very important branch of art production, and eventually compete with the ceramic works of any period and of any country.

In conclusion, we have to report that we are unable to contemplate, without the deepest regret, the possibility of such a collection being broken up and scattered into various channels. Each individual piece has its own peculiar value or merit; but when combined with others, as illustrating either the theory or history of art, so as to complete the chain and connexion of manufacture and art illustration, and thus forming a series of the progressive excellence to which such productions have been carried in times past, their worth is much enhanced. If Government were to rely upon the chances of a sale, they would probably be outbid for the best articles by wealthy individuals, who would gratify a taste at a fancy price, and thus the museums of the nation would have in such an event only the chance of obtaining secondary articles, purchased at greatly enhanced cost.

In making this report, the committee have deemed it more advisable to submit their opinions, based, after a careful examination of the objects, upon a broad and general consideration of their importance as a whole, and as a commencement and very desirable

contribution, with the series obtained from the Bernal Collection, towards a large and complete historical and artistic museum, rather than upon a minute criticism of any individual specimens. And they have come to the conclusion, that it would be an irreparable loss of a great opportunity to improve our manufactures, to enlarge the sphere of art application, to increase our commerce, and instruct the public mind, if the Government did not accept the offer to sell the whole to the nation at cost price;—an offer so nobly made by the disinterested and public-spirited men who, with singular generosity, and on their own responsibility, have at all risks afforded the opportunity to the country of securing the collection in its entirety.\*

T. L. DONALDSON, Chairman.	E. L'ANSON.
S. ANGELL.	T. H. LEWIS.
A. ASHPITEL.	A. SALVIN.
TALBOT BULL.	G. WILLIAM.
BENJ. FERRY.	T. H. WYATT.

C. C. NELSON,  
W. D. WYATT, } Hon. Secs.

January, 1857.

#### BRITISH INSTITUTION.

THE annual exhibition here of pictures by living painters is now open to the public. If there be any difference, the collection is rather below its average standard of merit, there being few works of particular excellence, although the exhibiting list comprises the names of many who have been designated "rising artists," for these twelve years past; nor are there many showing promise or progress of that ambitious character likely to encourage the expectation of those who hope to discover that the effects of increasing patronage, amongst other advantages afforded to the present generation of aspirants, will produce a stock of fine painters. Nor is such expectation unreasonable with efficient organization of our Fine Art Schools: on the contrary, it is a matter of surprise that season after season should elapse, with no perceptible change in the character of our exhibitions, after all that has been said, written, and done to aid improvement. Opportunity, it might reasonably be surmised, would awaken effort; and surely there are some able, if only willing, to do as much as their precursors at least, if they would concentrate whatever ability and skill they may possess on one or two important undertakings, rather than dissipate the same throughout some dozen trivial perfections; or if these same dozen embodied a single new thought in each, it would be a decided advance, and a theme for congratulation. The deficiency in this respect is more than usually suggested by the absence of Linnell's powerful landscape pieces, and the three or four excellent dramatic portraits with which Mr. J. Sant has been wont to delight its frequenters,—which, indeed, with the considerable assistance of Mr. Ansell's delineations of animal life, have lately been amongst the chief attractions of this gallery.

Taking first into consideration the comparatively scarce "subject pictures," Mr. L. Haghe's (2) "Sunny Hours" is a very conspicuous performance, forcible in colour, well composed, and only wanting in that delicacy—æsthetic perspective,—for which he is so renowned as a "water-colour draughtsman." Mr. J. Gilbert's (76) "Regiment of Royalist Cavalry at the Battle of Edgehill," would also be the better for some of the attributes of his drawings: so loose a style of execution, although accompanied with an impressive dash, is more akin to careless than power, a fault to be regretted the more in an otherwise clever work, reminding one of Velasquez.

The title of (180) "The Plant Hour," by W. P. Frith, R.A. is appended to a version of "Othello relating his Adventures to Desdemona." The personages are not Shakespearean, and yet are components of a successful and charming picture, in a technical sense. (458) "Molière Reading his Comedies to his Housekeeper" is agreeably portrayed by Mr. T. P. Hall: the result, somewhat marred by theatrical treatment, betokens careful study in its compilation, embracing almost too many good points to appear a probable and natural incident.

Amongst the pictures most deserving of examination will be found (1), "The Colossal Pair, Thebes," F. Dillon, presenting the well-known gigantic statues looming through the dusk of an Egyptian sunset, sufficiently invested with poetic and artistic treatment to excite the imagination. (22), "The Pet Rabbit," R. Beckner, evidently a portrait arrangement, inferior to the artist's ideal conception of (348)

\* After having been submitted to public criticism at Marlborough House, on the 7th of October, the Exhibition of the Soulagues Collection closed on Saturday, 7th February. During this period, it has been visited by upwards of 48,000 persons, which is just double the usual number at ending at this season. Amongst these visitors as many as 5,128 persons have paid for admission, being nine-fold the average numbers paying. We understand that the offer of sale has been made to the Government for 12,000 with the recommendation that if bought for the nation, it may be sent to Manchester.

\* Artistic in general effect are 650, 670, 681, 692. Nos. 655, 656, are to be praised for their design and execution; and 670, 671, for exquisite design and workmanship.

† Very satisfactory in point of design are the arabesques around Nos. 1, 2, 4, 5, 7a, 7b, 7c, 20, 23, 33m, 38, 39, 41, 44, 158, 160, 161, 68, 72, 75, 76; and in form as well as in decoration, 161, 162, 166, 167, 110; and as works of real art, 3, 4, 6, 9, 29.

\* Very high in style of conventional ornament, in design, execution, and effect, are 138, 112, 113, 141.



"A Roman Boy with a Pitcher of Water," though in this the beautifully painted head seems to be out of tone, and not to belong to the figure. (27), "The Island of Murano, Venice," G. E. Hering, is a favourable specimen. (33), "The Mole," Vignie, is one of five contributions of the indefatigable Mr. E. W. Cooke, A.R.A. and an exquisite little bit for finish and local truth. (34), "The Conventualist," J. Gow, shows us a boy in bed, paying off in part his great debt of kindness and attention by amusing his little brother with an accordion, and at the same time how the simplest episode in every-day life may furnish a subject for an epic. (42), "Coriunne," H. Weigall, a head characterised by much beauty and classic taste. (52), "Cochem on the Moselle," G. C. Stanfield, is the most striking and perfect of his three landscapes exhibited here. (57), "Athens," W. Linton, an expansive view, imbued with an originality and forcible effect at once proclaiming its source. (58) "Beautiful in Death," dolorously informs us of Mr. G. Lance's peacock having become defunct;—that wondrous bird, with whose telling tale, so often dilated, everybody is acquainted, and many know by art. Few can conjecture the amount of size and tears (of the best mastic) spent upon the creature from first to last, and never to better purpose than on this the occasion of its demise; we may hope that galvanism, or some resuscitating appliance, may be resorted to, and that we shall find the tail spreading wider and wider still in a time to come. (65) "The Evening Drink in a Mountain Lake," T. Danby, is extremely luminous, in fascinating lines, verging perhaps upon the metrical, and decidedly less truthful as a transcript from Nature than (364) "A Summer Evening," in every respect a delightful landscape by the same painter. Mr. E. Duncan has "immortalized" (75) "The Gallant Action fought by the British 15-pounder 36-gun frigate *Penelope*, Capt. Henry Blackwood, and the French National Ship *Guillaume Tell*, Capt. Saulmier, bearing the flag of Rear-Admiral D'Éres, on the morning of the 31st of March, 1800," with a gusto and power, entitling him to respectful salutation from all Greenwich pensioners. In (82) "Rain Clearing Off," H. Dawson, a difficult atmospheric effect has been well comprehended, and successfully dealt with; and (96) "The Evening Hour," E. J. Niemann, bearing the impress of truth in its deep mellow tones, helps to prove that the collection predominates in this department in other points than number. (172) "A Refreshing Draught," C. Dukes; (197) "The Hay-field," H. Jutsum; and (267) "Early Summer Morning," by the same. (247) "Through the Welsh Woods," H. J. Boddington; (256) "Imogen," W. Fisher; (268) "Interior of a Welsh Farm House," A. Provis; (274) "Dairy Maid," or rather the cleverly-painted "Calves," in which its excellence exists, by G. W. Horlor; (289) "A Summer Morning on the Thames," H. J. Boddington again; (295) "Cactus," &c. Miss Mutrie; (309) "The Music of the Shell," F. Underhill; (310) "On the Coast of Amalfi," H. J. Johnson; (341) "Love's Stratagem," T. M. Joy; (359) "Holding as it were the Mirror up to Nature," W. Hemslay; (374) "Interior, Westfield House, Ryde, Isle of Wight," C. H. Stanley; (407) "Janet Foster," F. Wyburd; (408) "The Vintage," W. E. Frost; A.R.A.; (415) "Thy Will be Done," H. Le Jeune; (418) "Old Woman Reading," G. Smith; and (453) "The Found Cigar," H. Vanssen, will arrest attention, and evoke more or less admiration. (471), "Brighton Diamonds," T. M. Joy, as a pretty conceit representing three of those periodically appearing sea-nymphs whose eyes belie the imputation that beach jewels are a myth, deserves more than a passing note of commendation, because it illustrates the times we live in, and moreover is a good picture of its class. In (483) "The Two Extremes—The Post-Raffaellite," and (485) "The Pre-Raffaellite," Mr. H. O'Neil contrasts, not too invidiously, careless ease with painstaking labour, to the advantage of neither, in spite of the executive ability displayed in both cases, as far as he himself is concerned. To (496) "Pretty Polly," E. J. Cobbett; (499) "The Talking Oak," W. Mow Egley; (525) "A Little Scarecrow," T. F. Dicksee; (539) "A Letter requiring an Answer," W. Cave Thomas; (540) "The Lesson," D. W. Deane; (546) "In the Chimney Corner," T. Earl; and (554) "Gems of the Sea," H. C. Selous, we can but briefly allude, as we have arrived at the limits of space reserved for this notice.

#### COMPETITION.

*Plans for Laying out the White Horse Estate, Norwood.*—The first premium of 150 guineas has been awarded to Messrs. Morgan and Phipson, Danes-inn, Strand; the second, of 100 guineas, to Mr. J. A. Bone, of Maidstone; and the third, of 50 guineas, to Messrs. Coe and Beetholme, of Danes-inn, Strand.

#### ST. JAMES'S, WESTMINSTER.

SOME considerable works, as our readers know, have been recently executed at this church. The decayed wooden box porches that covered the entrances to the church at the western end, unsightly, and long a disgrace to St. James's, have been taken down and replaced with substantial erections in brick and mortar. These occupy the space on each side of the tower, and the elevations being made to assimilate in general character, and carried up uniform in height with the body of the church, the appendages assume the appearance of having formed a component part of the original structure. Internally they are made to communicate through the lower vestibule, the bricking up of the basement arches of the latter being removed for the purpose,—the three apartments together thus forming a continuous ambulatory, extending from the footway of Jernyn-street along the entire width of the western front of the church, giving access by doors therefrom direct to the aisles and the nave, and by stairs to the galleries. The remaining lateral entrance from Jernyn-street (originally there was a corresponding doorway on the north side, removed in 1803) has been done away with, bricks and mortar and a window being made to occupy the place of the old door.

The various interior lobby inclosures to the entrances, the stairs and the wainscot cases, which presented numerous ugly bulkhead projections into the interior of the church, detrimental to uniformity, and an encroachment on the congregational space, have all been swept away. The upper western gallery, hitherto occupying the central portion only of the church, has been extended over the aisles to the side walls; the latter a somewhat doubtful improvement, but that the creation of fifty sittings were directly or indirectly involved in it. The arrangement of some of the pews has been altered, economising the space to the gain of a considerable number of seats;—matters, the importance of which must be judged by the fact, that the only limit to the number of congregation here is the capacity of the church to accommodate. Some further ventilation has been introduced, and the whole interior thoroughly cleansed and re-embellished.

The churchyard has been raised, levelled, and repaved, and the old dingy blank wall fronting Piccadilly is to be immediately taken down and replaced with a handsome iron palisade.

When the present active and estimable rector, the Rev. John E. Kempe, M.A. entered upon his duties in this important parish in 1853, the lamentable inadequacy of 650 free sittings for adults in all the Church of England places of worship in his parish, for the wants of a population of 37,000, and more than half the number poor, engaged his serious attention, and, putting forth a comprehensive scheme for the amelioration of the evil, he appealed to the benevolence of the more wealthy of the parishioners for the means to work it out. The appeal was quickly and liberally responded to by the higher classes of the inhabitants, a list of little more than a hundred names yielding an available fund of nearly 12,000*l.* The principal subscribers being the Bishop of London (Blomfield) 1,000*l.*, the Marquess of Bristol, Earls Derby and De Grey, Wilbraham Egerton, esq. (since deceased), and Sir Walter Farquhar, 500*l.* each; the Archbishop of Armagh, Earls of Eglington and Spencer, 200*l.* each; the Dukes of Norfolk (since deceased) and Cleveland, Earls of Ellesmere, Aberdeen, Falmouth, Enfield, Redesdale, Mrs. Byng (since deceased), Mr. Hudson Gurney, Mr. John Fisher, of Duke-street, the London and Westminster Bank, "A Penitent," and the Branch Bank of England, each 100*l.*; and under the nomenclature of "A Parishioner" (supposed to be the Earl of Derby), 4,000*l.* specially towards the building and endowment of a new church.

The primary object set forth in the rector's scheme was the creation of an additional church, to be situated if possible in the eastern division of the parish, to be built to accommodate about 1,200 persons, half of such accommodation to be free; but the progress of the work has been delayed by the difficulties in the way of obtaining a suitable site. Covered as the entire area

of St. James's is with houses or other closely packed valuable buildings, the procuring of the mere half rood of ground on which to erect it, involves an outlay far greater than the combined expense of building a handsome church and furnishing it, and supplying the stipulated endowment for the incumbent. Hence, liberal as the subscribed fund seems, it is as yet insufficient to justify practical operations on this head. It is to be hoped, however, that the opulent traders and manufacturers with which the parish abounds, and whose fortune is the produce of the labour of those who constitute the thousands, the spiritual wants of whom it is now sought to supply, will yet, emulating the example the nobility have set, come forward in liberal support of this good work. The second object in the scheme was to convert into free sittings certain portions of the pew accommodation of the existing churches and chapels of the parish. This has been effected in respect to the district church of St. Luke's, Berwick-street, and Archbishop Tenison's Chapel, Regent-street, and 500 additional free sittings have in that way been permanently provided.

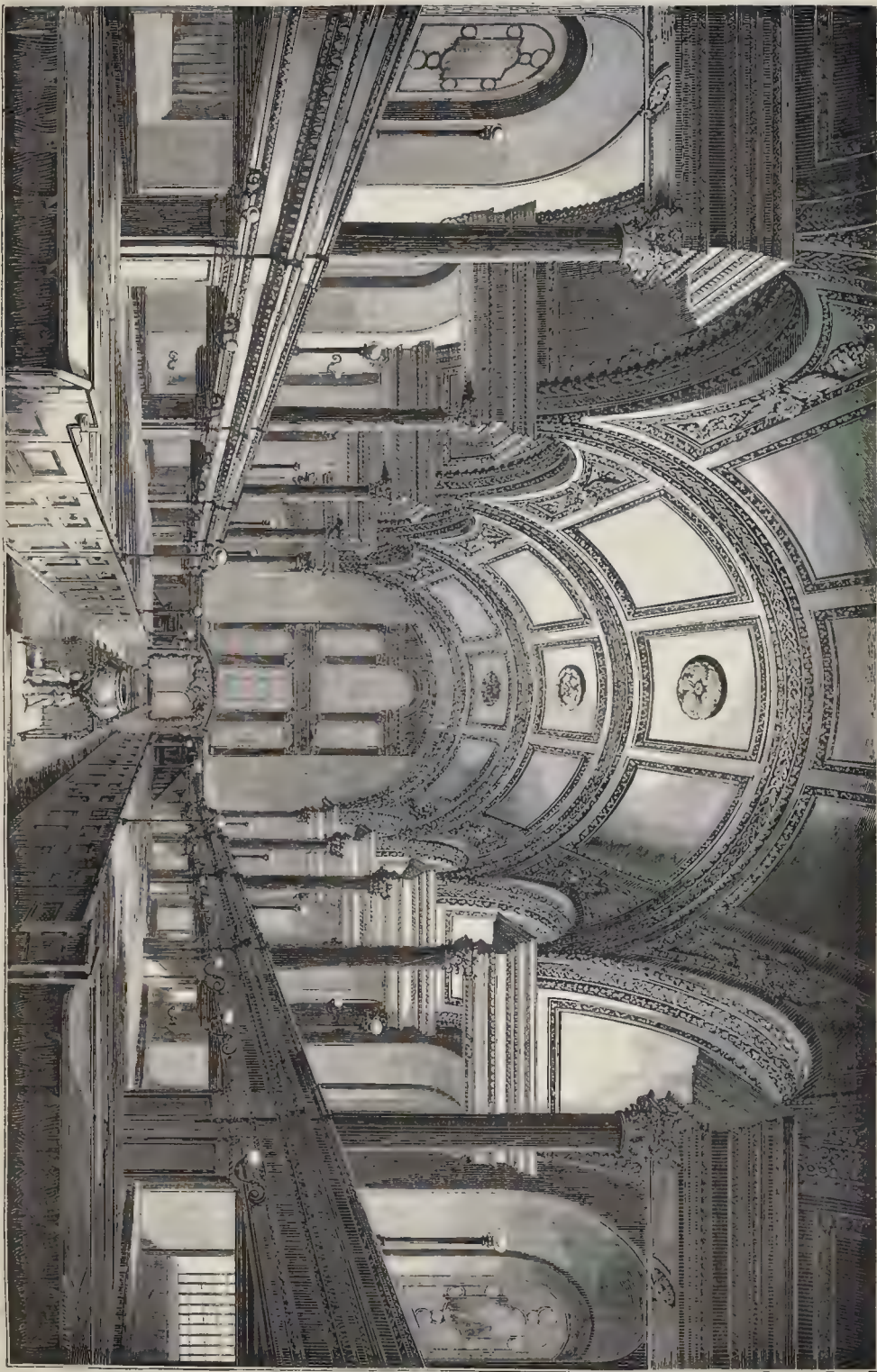
The works just completed at the parish church, projected by the present churchwardens, Mr. Frederick Crane, of Regent-street, and Mr. Rice, of Charles-street, originally without any view to the object, have nevertheless been made subservient to the furtherance of the rector's scheme. Among the improvements the proposed alterations in the church were to effect, was the gain of considerable interior space, on which it was intended to set up pews, and the rental arising from the letting of these was to compensate in some degree for the outlay. But the rector, feeling that additional church accommodation was more needed by the poorer portion of his parishioners than the richer, made a proposition to the churchwardens to obtain from the committee of his "Free Church Accommodation Fund" a grant of the sum of 500*l.* towards the cost of the works, on condition that the additional church room gained by the alterations should be appropriated to free sittings. The offer was accepted, the stipulations have been fulfilled, and 150 free sittings have been thus obtained, which, together with 120 sittings contrived and set up in the church by Mr. Crane three years ago, when in connection in the churchwardenship with a former colleague (the late Mr. Sasse), this movement has given to the parishioners a permanent accession to the free accommodation in the parish church of 270 sittings,—more than doubling that which existed before; whilst the pew accommodation, and the rental therefrom, have suffered no diminution. The expense of the present works has been about 3,000*l.*, and these have been carried out, as already mentioned, under the superintendence of Mr. Charles Lee; and executed by Messrs. Patrick and Son in a very satisfactory manner.

This church, as every body knows, stands on the south side of Piccadilly, and, architecturally considered, is remarkable, externally, only as a mean-looking dark red brick building. It was consecrated in 1684.

Comparatively few of the many thousands who make up the living throng that daily traverse this great western thoroughfare, are aware of what an elegant interior these ugly brick-cased walls inclose—light, airy, and capacious. That Sir Christopher Wren himself—who, besides St. Paul's, built more than half a century of parish churches—regarded this his *chef-d'œuvre*, is seen by his letter to a friend, printed in "Elms's Life of Wren," as follows:—"Churches must be large; but still in our reformed religion, it should seem vain to make a parish church larger than all who are present can both hear and see the preacher. The Romanists may indeed build larger churches, as it is enough if they hear the murmurs of the mass, and see the elevation of the host, but ours are to be fitted for auditories. I can hardly think it practicable to make a single room so capacious, with pews and galleries, as to hold above 2,000 persons, and all to hear the service and see the preacher. I endeavoured to effect this in building the parish church of St. James's, Westminster, which, I presume, is the most capacious, with these qualifications, that hath yet been built; and yet, at a solemn time, when



ST. JAMES'S, WESTMINSTER.—SIR CHRISTOPHER WREN, ARCHITECT.





the church was much crowded, I could not discern from a gallery that 2,000 persons were present, in this church I mention, though very broad, and the nave arched up. And yet there are no walls of a second order, nor lanterns, nor buttresses, but the whole roof rests upon the pillars, as do also the galleries, I think it may be found beautiful and convenient, and, as such, the most economical form of any I could invent."

The plan of St. James's is the Basilical, nave and aisles being formed by two ranges of six piers and columns, in two stories. The piers, which are of the Doric order, panelled, carry the galleries, the fronts of the latter of oak, with carved enrichments, forming the entablature of the order, with a low attic above, to complete the breastwork. The upper order is the Corinthian. Columns rise from the breastwork of the galleries, and the highly-enriched entablature of these, stretching across from each column to the side walls, serve as impostes to a series of transverse arches from column to column, forming the covering of the aisles; whilst from the abacuses also springs the great semicircular vault that covers the nave; the whole roof being divided into sunk panels, ornamented with festoons of drapery and flowers in relief, "producing," as Mr. Gwill observes, "by its unity, richness, and harmonious proportions, a result truly enchanting."

A slight prolongation eastward of the central portion of the body of the church forms the altar recess. The end above the altar screen is nearly all occupied by a Venetian window. This is made into two tiers by a massive transome, which, with a pair of columns in the lower portion, and a pair in the upper, serving as mullions, subdivide the window into six compartments.

The lower tier is uniform with that of the upper story of the body of the church, and the architecture the same, i.e. Corinthian—the entablature of the order forming the transome of the window. The upper tier is composite. The centre intercolumniation is connected by a semi-circular arch. In 1846 this large window was filled with stained and painted glass. The window is illustrative by six principal pictures,—one to a compartment,—of the Narrative of our Blessed Lord's Sacrifice for the Redemption of Mankind. In the lower central division is displayed the Crucifixion, with the praying in the Garden of Gethsemane, on the left; and the Bearing of the Cross on the right. The upper central compartment is the Ascension, with the Entombment to the left, and the Resurrection on the right. Very wide mosaic pictures surround each of these pictures, in which, as well as in the other parts of the filling in, are numerous minute representations of other scriptural subjects; with details of immense variety, consisting of religious emblems, symbols, monograms, &c. &c. This glass was the production of Mr. Wallis, of Newcastle, who received 1,000*l.* for the work.

It is intended also to fill in with stained and painted glass the whole of the ten gallery windows. The work is to proceed gradually, as funds shall arise for the purpose; or by accepting of windows from individuals in the way of offerings,—mortuary, or obituary. The whole is designed to form, when completed, a series of paintings, illustrative of the history of our blessed Saviour's life and ministry, commencing with the "Nativity," in the easternmost window on the south side,—the succeeding windows to carry on the subject, progressively, as follows:—

- No. 2. The Adoration of the Magi.
3. Baptism of Christ.
4. Christ and the Woman of Samaria.
5. Christ with Peter on the Sea.

And returning eastward on the north side with

\* The meeting of St. James's church was not the work of Sir Christopher Wren. It was built a few years after the church, and was from a draught supplied by a Mr. Wilcox, a carpenter in the parish, which, strange to say, was made choice of by the vestry in preference to a design for the same furnished by Wren himself; the cost of the erection of which was estimated at 2,000*l.* The other treasury. The founder of the chapel of St. John's, St. Vedast's, St. Dunstons in the East, and Bow, London is a competitor but of St. James's, Westminster, by a carpenter.

† The ceilings, and other enrichments, as now seen, were put up in 1847, when the decayed state of the timbers had rendered an entire new roof to the church necessary. The work was executed by Mr. Wallis, architect; the expense on the occasion was 4,000*l.*

#### No. 6. The Transfiguration.

7. Christ with Martha and Mary.
8. Christ Blessing Little Children.
9. The Raising of Lazarus.
10. Entry into Jerusalem.

Thus connecting the narrative with the Passion, as represented in the great altar window. Nos. 2 and 4 have been executed (also by Mr. Wallis) at a cost of 185*l.* each.

The altar screen displays a most exuberant piece of carving, in alto-relievo, executed in lime-tree, by that imitable artist in that way, Grinling Gibbons. The principal group represents "The Pelican in her Piety." Bishop Fox's favourite device, typical of our Saviour having shed his blood for us (though the allegation of the ancient naturalists as to the habit of the pelican being to feed her young with her own blood, when other food was not immediately procurable, on which circumstance this long popular symbol was founded, is now disproved). In this beautiful work of art, the pelican occupies the centre, over the altar-table—is represented as sitting in her nest, and in the act of wounding her breast with the point of her beak to draw the blood, whilst the young ones beneath are gaping for the food. The bird is covered with a beautiful combination of foliage, among which are two doves bearing olive branches. In addition, a noble festoon ending in two pendants, which extend nearly the whole height of the screen, displays all the varied representations of fruit and flowers, in the highest relief. This elaborate and delicate work having become much injured by the casualties of 160 years, was in 1846, thoroughly repaired by two Italian artists—a work of protracted labour; several thousand bits of carving, of more or less minuteness, requiring to be added, in order to restore the groupings to their pristine state.

The font, which stands in the central passage, opposite the principal entrance from the west, is an exquisite work of art, in white marble, from the chisel of that same admirable artist. The sculpture is intended, by the representation of four scriptural subjects, to tell the story of the fall of man—his subsequent restoration to Divine favour, and his regeneration by baptism, viz.—the Adam or support to the basin is the tree of good and evil; Adam and Eve stand at its foot, whilst the serpent, coiled round the trunk of the tree, is presenting to them the forbidden fruit. On the side of the basin, which is circular, and 6 feet in circumference, are, in basso relievo, Noah's Ark, with the dove bearing the olive-branch of peace in its beak, St. John baptising our Lord in the Jordan, and Philip baptising the Eunuch. The pewing and other wood fittings of the church, are of Dutch oak, were set up in 1803, and cost, inclusive of some repairs to the church, upwards of 11,000*l.* An upper tier of gallery, at the western end, contains the organ and seats for the choir, as also the school children. The organ is in two oak cases, standing one before the other, the organist's place being between them, his face to the great organ, and his back to the smaller one, to the latter of which the action passes beneath his feet and seat. The great case is in the florid style of the period of its original construction (Louis XIV.). The carvings of fames, angels, cherubs' heads, &c. with which it is adorned, strikingly mark, by their great beauty, the master-hand of Gibbons. This favourite old instrument, originally made by the celebrated Renatus Harris, anno 1678, was entirely rebuilt by the late Mr. Bishop, in 1852, on a much more comprehensive scale, but retaining the old pipes—for these, the mellowing hand of time had rendered of more than ordinary value,—when also the old case was restored, with the original decoration, and the detached front choir added. The expense of this work was 1,000*l.* and the organ is now one of the most beautiful in the kingdom.

F. C.

CHAIN BRIDGES.—Mr. Edward William Yonng, of Rochester, has patented an improvement in the construction of bridges. According to this invention the platform or roadway of a bridge is suspended from chains which do not hang in curves, but descend in straight inclined lines from the points of suspension to the platform of the bridge.

#### THE ARMOUR IN THE MANCHESTER EXHIBITION.

MANY antiquarian friends will be glad to hear that Mr. Planché has accepted the invitation from the Committee of the Exhibition of Art Treasures, to superintend the arrangement of armour and arms. We may therefore feel certain that in this department we shall have a correct chronological arrangement, to instruct as well as please. It would be a fortunate thing, if, when this matter is finished, Mr. Planché could be led to give his services at the Tower of London, where the national collection appears to be left pretty much to itself. So far as we can learn, no person having knowledge of the subject ever pretends now to exercise any control there, or has any interest in making it complete and available for public instruction."

#### PROVINCIAL NEWS.

**Smethwick.**—A parsonage-house for St. Matthew, Smethwick, being about to be erected (Mr. Joseph James, architect), the following tenders have been made for the erection:—

Corrish, Brothers (Birmingham) ...	£296
Harley (Smethwick) .....	550
Ramsay (Smethwick) .....	841
Stockton and Field (Oldbury) .....	787

**Stourbridge.**—The new National Schools at Ambicote were recently opened by Lord Lyttelton. These schools are built on a site given by the Earl of Stamford and Warrington. Nearly 1,700*l.* have been secured for the cost of erection.

**Liandun.**—The commissioners under the local Improvement Act have entered into a contract with Mr. Knight, of Manchester, for the drainage of the town. The plans and specifications have been prepared by Mr. T. M. Smith, of London, C.E., under whose superintendence the whole is to be carried out. The works are being commenced, and are to be completed by August next.

**Shrewsbury.**—Under the Limited Liability Act, a project has been started for erecting a public hall in this town, to accommodate from 250 to 300 more persons than the Music-hall. The room is designed to be capable of being divided, without injury to its architectural decoration, so as to render it suitable to small or large assemblies.

**Brewod.**—The Wolverhampton Chronicle states that the newly-erected church for the district of Coven, in the parish of Brewod, was consecrated on Thursday in week before last. The edifice is in the Transition style. It consists of a nave, 62 feet by 24 feet 6 inches; two transepts, 15 feet by 15 feet each; a chancel, 16 feet by 16 feet 6 inches; together with vestry, south porch, and gallery at the west end of the nave. At the south-west corner is a turret terminating above the roof octagonally, and surmounted by a small spire. The ground-floor contains 326 sittings for adults, and the gallery upwards of seventy sittings for children. The stone used in the building is from the Brewod quarry, and is the gift of Thomas William Giffard, esq., of Chillingham. The woodwork, except the pulpit and desk, is all deal, stained and burnished. The roofs are open and high-pitched, with arched braces to the principals. The architect was Mr. E. Banks, of Wolverhampton; and the builder Mr. Godfrey, of Birmingham. The whole cost has been estimated at 1,900*l.*

**Liverpool.**—At a recent meeting of the Toxteth-park Board of Health, a draft plan, prepared by Mr. Newlands, the borough-engineer, of a scheme of sewerage for the district, was submitted. The estimated cost for carrying out the plan was 9,000*l.* The proceedings were continued, and the clerk instructed as to further procedure. The new large floating landing-stage, for Prince's-pier, is drawing towards completion. It will be brought over in four sections from Birkenhead, where it is being constructed by Messrs. T. Vernon and Son.

**Edlington.**—Lord Ravensworth is now making numerous improvements at Edlington House, amongst which are conspicuous a terraced wall and a gateway in the centre, adorned with vases, designed by his lordship. The execution of these designs has been intrusted to Mr. D. McMillan, of Alnwick, sculptor.



## SCHOOLS OF ART.

*The Normal School.*—On Wednesday evening, the 28th ultimo, a meeting of the students in this school was held in the rooming to receive prizes awarded by Mr. Redgrave, the Government inspector. The mayor, who presided, said he had attended at the request of Mr. Nurey, the master, to distribute the prizes. He was glad to see so large an attendance notwithstanding the roughness of the weather. He considered that it was highly creditable to the students that out of 200 students seventy-nine of them should have received prizes. The Rev. J. Crompton briefly addressed the students, advising them not to stop at the outwardly beautiful, but to aim at whatever was beautiful in the highest sense. Mr. J. G. Johnson said the number of students who had received marks of distinction was highly creditable. He hoped soon to meet them in the new building with a free library under the same roof.

*The Reading School.*—The provisional committee appointed at a late public meeting, to take the necessary steps preliminary to the establishment at Reading of a school of drawing and design upon the Government plan, have nearly concluded their labours. At a recent meeting of the committee, however, it was reported that throughout the country the demand for able masters was greater than the supply, and as there was no possibility of obtaining an efficient and approved master before March, it was concluded to wait for rooms till that date.

*The Nouvelle-école-Lyde School.*—The annual meeting of this school was held in the lecture-hall of this Institution on the 27th ultimo. The chair was occupied by Mr. Addeley, M.P., and Mr. Child, M.P. the president, was also present, with the mayor of the borough, and various other influential gentlemen. The room was densely filled. The walls were decorated with works by the students and others. From the report it appeared that the receipts were about 60*l.* and the expenditure the same for the year. The committee regretted to state that the school had not received the support and encouragement which they had hoped it would, and also that the number of students had not been so large as they could have wished; Mr. Child had placed in the secretary's hands a cheque for 10*l.* which was to be offered in four prizes two during the present year, and two during the following year. The meeting was addressed by the chairman and by Mr. Child and other gentlemen. The chairman in his address said he believed that in the matter of education it was the duty of Government to assist in the improvement of the industrial arts, and to educate those engaged through the instrumentality of their occupation. In this respect he thought Government had made a sad mistake, and that that might help to account for the complaints which had been made of the absence of a thoroughly hearty support of such institutions. He thought that the reason why public schools with large grants from Government were not supported by a larger attendance of pupils was, that the people did not see in them that which they wanted. It was quite an anomalous state of things to have a supply without demand, and grants of public money had been wasted on the ground of education in order to stimulate that demand. The education adapted to the people was not an education in the higher branches of philosophy, but such an education in the arts and industries as would quicken and strengthen the intellect, and so that, after this training was, he was convinced, a great mistake, which lay at the root of national education. He hoped the country would see this mistake, and would urge its correction upon the Government. The chairman then called the attention of the meeting to the efforts made by Prince Albert to spread our principles of taste, and expressed his conviction that the country was mainly indebted to his Royal Highness for developing this branch of education. He had not merely encouraged isolated efforts, but had grouped them together in one great national scheme, placing its centre in London, communicating with the local schools throughout the country, but not having under their control, as the schools of France were under the central school at Paris. That was not a favourite principle in this country, and he thought that Government was quite right in saying that it could not do more than aid the schools of art.

*The Sheffield School.*—The opening of the new building was inaugurated on the 26th ultmo, by a public *conversazione*, at which Mr. Robuck, M.P. presided. In his address to the meeting the chairman made characteristic allusion to his own peculiarities as a public man in their relation to art. "There is something," he said, "in all that pertains to art of such a perennial and ever-flowing nature that it never palls upon the senses, that it never in any way diminishes in its power to exalt and bless humanity; and, therefore, if we make that the daily avocation of our lives, we do much to exalt the nature of man and to increase our own welfare. This may appear to you to be somewhat fine-drawn and sentimental view of things."

But I speak to you as a practical man, whose life has been passed in the tarmoil and boiling up-stirring springs of life; for my life has been that of one who has had to combat with his fellow men, and I have found that that which has been to me the solace of my life has been art. For though I am an humble pupil of art, still I am an adoring pupil. I love her for her goodness to me; I love her for her elevating influence upon the human race." Mr. Cole, C.B. was also present, and addressed the meeting, and explained what Government was doing in order to assist schools of this description. He spoke favourably of the Sheffield School, and stated that whilst the highest number of medals awarded in one year to any school was thirty, the students in the Sheffield School were about to receive that night twenty-eight; or rather they were not about to receive these, though they were entitled to them, in consequence of the die of the reverse side having broken in striking it. The whole of the art-works for which these medals were given throughout the country it was intended to bring together into one exhibition, and in order that they might not be thought too metropolitan it had been determined that these exhibitions should be held in the provinces. Next year it was intended that the medals for 1874 should be exhibited in Manchester, and award for the best types of art 100 of what they were going to call national medals. To get a medal worthy of such an occasion they had sought all over Europe for an artist, and they had succeeded in obtaining the services of a foreign gentleman of great celebrity. Each of these medals would represent 10*l.* for which the student would receive a work of art equal in value to that amount. The speaker then exhibited one or two specimens of the works of art intended to be given to such students as gained the national medals.

*Carlisle School.*—A *soirée* in connection with the Carlisle School of Art took place on the 27th ultimo, in the Mechanics' Lecture Hall, Carlisle. The only cause of regret was the comparatively small attendance, notwithstanding the attractive announcement that a ball was to follow the tea-drinking and speech-making. The hall was gratuitously lent for the purpose by the committee of the Mechanics' Institution.

SUCH A SNUG BERTH !

RUSH, surveyors, rush ; why your talents biding ?  
Forward, in a crush ; storm the Western Riding !  
Eighty pounds a-year, open for contention ;  
Duties, trifles mere, hardly worth the mention.

Only land-survey, (pastime 'mid your revels) ;  
Then to fill the day, take and plot your levels ;  
Working planes then draw, fit for high inspection ;  
And secure *éclat*, with the parts in section.

Engineering skill, relative to highways,  
Time will help to kill,—not forgetting byeways;  
Then, by way of change, in your morning rambles,  
Anti-nuisance range, 'mong the slums and shambles.

'Then, from door to door, thus your medley vary:  
Rate-collecting, bore needy folks and chary.  
Only think! the small surety claim'd for safety,  
Not worth name at all, only poor two-fifty.

For eight postage-stamps (justasses are sticklers)  
Send, you seedy scamps, for detail'd partic'lars.  
Mind and state your age; old uns, don't be nervous;  
Haste, ye green, and sage—grown grey in the service.

Oh, what sinecures! cheering 'tis to quote 'em;  
Such enticing lures captivate factotum.  
Then, surveyors, rush; why your talents hiding?  
Forward, in a crush: storm the Western Riding!

STONE BATTER.

### PROTESTS BY THE ARCHITECTURAL ASSOCIATION AGAINST THE DECISION IN RECENT COMPETITIONS.

THE following protests by the Architectural Association have been forwarded as addressed :—

February 10th, 1857.  
To the Chairman and Committee of the proposed new Free  
Public Library and Museum, Liverpool.

GENTLEMEN,—We are directed by the committee of the Architectural Association to request your earnest attention to the following expression of their opinion in regard to the late competition for your proposed new building.

The committee of the Architectural Association viewed with sincere pleasure the earnest expression of your desire to ensure, as far as possible, a fair and honest competition, and they believed it was your wish to obtain for Liverpool another building of which you might justly be proud. Your subsequent selection of a limited number of sketches, thus saving a vast amount of labour and expense to the unsuccessful competitors, the committee think was most judicious.

A design having been thus selected, it was thought that it would be carried out in the usual way, upon your being satisfied that its author was capable of undertaking a work of such magnitude; that he is capable has been sufficiently proved.

dissatisfaction, not only to the committee and members of the Architectural Association, but also to the profession at large, when, by a resolution passed at one of your meetings, it was determined to give the work into other hands.

Whilst the committee of the Architectural Association sincerely regret that a member of an honourable profession could be found willing to undertake such a commission, they feel that this act of injustice cannot be passed over without protesting against your decision.

In conclusion, the committee of the Architectural Association hope that before it is too late, you will reconsider the matter, and by placing the design into the hands of its author, give him the reward that is so justly his due: thus securing for the town of Liverpool a building that shall commemorate the noble generosity of its founder, the justness of its building committee, and the ability of its architect. (Signed)

J. A. BUNKER, } Honorary  
B. A. C. HERRING, } Secretaries

February 10th, 1857.

To the Chairman and Magistrates of the County of  
Middlesex.

MY LORD AND GENTLEMEN,—We are desired by the committee and members generally of the Architectural Association, to request your attention to the following expression of their opinion as to the results of the late competition for the proposed new school buildings for the county of Middlesex.

The committee and members of the Architectural Association having watched with anxious interest the progress of the recent competition, view with extreme surprise and regret the decision which has been ultimately arrived at. It is not only the fact that the committee have been so much injured to the interests, not only of the profession, but also of the public, that they feel incumbent on them not to allow it to pass unchallenged, in the absence of any other public protest from a professional source. Into the question of the advisability of such a professional protest, the committee do not decide upon the merits of arrangements and details in which they were doubtless more experienced, the committee do not here desire to enter, the fact of your own decision not being in accordance with the advice you had obtained proving, in this case, its invalidity. But they do feel that it is of the final result and of the following grounds—

That having doubtless, carefully examined and rejected the plans selected by the professional gentlemen who had called in to assist you, the subsequent decision made by yourselves, was the right and just one, inasmuch as it must have been made with more than ordinary care, and the premium to those designers who had been so selected. And the committee and members of the Architectural Association, cannot but think that your decision should not have been altered, unless some extraordinary advantages were found in the designs you have ultimately decided upon for the building. The award of the premium was inferred from a perusal of the allegations made by the architects to whom was awarded the highest premium.

The committee and members of the Architectural Association sincerely hope that you will again carefully reconsider the whole question, and, if you were right in awarding the premiums, then do you hope you will not be disappointed in not designating them that which they worked for in common with all who compete, viz the honour and remuneration of carrying out such a building as is proposed to be erected. The committee of the Architectural Association feel that you are not doing justice to the architects by awarding either to the architects or to the rate-payers, for if the design first selected was the best, then it is an act of injustice to the architects to carry out another design; and it was not the best, then it is an act of injustice to the rate-payers to carry out the first design. It is now or never, and the opportunity will not be available again. Hoping you will give this subject your earnest consideration.

[Signed by the Hon. Secs.]

## NOTES ON THE METALS.

MR. D. MERRISON, of Bordesley Works, Birmingham, has patented the use, in malleable iron casting, of moulds of metal, by preference of cast-iron. By thus employing metal moulds, the same may be used again and again, and the articles cast therein will be more smooth. There is now in progress, at Broomielaw, Glasgow, the largest chain, it is said, ever made in Scotland. This chain is for mooring the buoys of the River Trustees. The iron bar from which the chain is formed measures two and five-eighths inches in diameter, and each link weighs 43lbs. The entire length of the chain will be 120 fathoms. Discoveries of iron in the neighbourhood of Seend, Wiltshire, are going on, and several furnaces are about to be erected.

In the manufacture of Steel, Mr. Chenot's invention, which is at present attracting much attention at Paris, consists in the use of an electro-sorting machine (electro-tricuse) to raise the crushed ore to its maximum standard of richness; in a system of cementation, whereby the most opposite qualities of steel may be produced with certainty; and in the compression of the ore after its transmutation, and before and after cementation into a sponge. By his process, it is declared, can be manufactured from Spanish ore, steel which will not cost above 32¢. per ton, and be superior in quality to that sold in Paris at 100¢. per ton.

An iron-bridge to carry the East-India Railway across the river Sone (the ancient Erannaboa), has been constructed at the Elswick Engine Works, Newcastle, and is thus described in the *Gateshead Observer*.—"The tentative arch is of iron lattice-work, as light to the eye as a fabric of cane. As you pass along the roofed roadway, you have on each side a double-lattice; and over head is the railroad for locomotives. The bridge will be double; that



is, there will be two parallel footways and two parallel railways. Foot passengers and palanquins will use the lower bridge. The Elswick arch is 262 feet long; and though in principle it involves no novelty, some new mechanical devices have been resorted to, resulting in a combination of great strength with great lightness—contrasting remarkably, in this respect, with the wondrous High Level Bridge across the Tyne—which, were it now to be built, would probably consume not more than one-third of the iron actually employed. The number of double arches, resting on piers, will be twenty-nine. We shall thus have a double bridge, with palanquin roads below, and roads for railway traffic above; a footpath also on each margin of the upper way; the whole in round numbers 7,600 feet (or nearly a mile and a half) long—six times longer than the "High Level;" although, literally speaking, the structure will consist of fifty-eight separate bridges, each of which can contract and expand with the temperature, without danger to the stability of the viaduct.

At the Sheffield Exchange last week, a number of files of various sizes, cut by the French machine of Messrs. Prignet and Bernot, were submitted to the inspection of the local merchants and manufacturers. It appears that the patentee has disposed of the license for the use of the machine in France, and is now desirous to do so in this country. The files are said to be of a serviceable character, and the raising of the tooth satisfactory. It is stated by the patentee that the machine is so portable that it can be carried by two men, and that a small engine of one horse power suffices to work six machines. Each machine is said to cut in a day 6½ dozen 16-inch square rubbers, weighing 9lbs. each.

At the Midland Institute, Birmingham, on the 26th ult. Mr. H. Wiggins read a paper on the manufacture of copper. The lecturer took copper ore at that point when it is ready for the smelter, and traced the various processes through which it passes until it becomes good marketable copper, either as tile, cake, or best selected. The mining, raising, and dressing of the ore belonged to the miner and mineralogist only. The principal sources from which our copper smelters obtained their ores, were from Cornwall and Devonshire in this country, from Chili, Cuba, and the Burra Burra and other Australian mines. Cornwall alone produced upwards of 1,200 tons of copper annually. It was from this country the greatest quantity was obtained. Mr. Wiggins afterwards alluded to the term "standard," used in the copper trade, and remarked that he had never met with any one who understood it.

Mr. W. Bayliss, of Birmingham, has patented the manufacture of ornamental metallic tubes, by pressing a plain tube into contact with a mandril, the said mandril having upon it the ornamental figure to be given to the tube, the pressure being applied as described. The invention is applicable especially to the manufacture of taper tubes, as there is difficulty in removing the tube from the mandril if the mandril be of uniform diameter throughout. The tube, however, may be removed from a mandril of uniform diameter by heating the said tube suddenly, and thereby expanding the same.

#### ELECTRO-TELEGRAPHIC PROGRESS.

Two or three years since we hesitated, like many others, to speak of the Atlantic Telegraph as a really practicable project, or anything but a grand idea, which might, at some distant day, be realized. In this hesitation, however, we felt actuated far less by our own convictions than by an assurance that these convictions, if candidly outspoken, would be scouted by many of our readers, as partaking of the most extravagant credulity. At that time one felt (in a small way) somewhat in the position of Mr. Stephenson, when he was compelled, by the force of opinion, to pretend, before the Commons, that he had the most discreetly moderate idea of running railway trains at some eight or ten miles an hour, all the while silently multiplying the ten by five in his own mind, as the true measure of his well-founded expectations. Much so was it with Galileo Galilei, when compelled to pretend to subdue his unconquerable belief that the earth moved round the sun, and, with erroneous denial of its motion on his lips, to whisper to himself, in the silent depths of his own soul, "but it *does* move though!"

Well, the extravagant idea of this time three years, is the actual work of to-day. The clue of clues is now being spun, and in a few short months it will dip into the middle of the great Atlantic, and settle miles beneath its troubled surface—"a way for the lightning flash," laid down by the God-given power of human genius.

The cable selected for the Atlantic telegraph [we rely on the authority of the *Engineer Journal*], is composed, internally, of a central core of seven copper

wires, No. 22 gauge, twisted together so as to form a strand, which is surrounded by three consecutive layers of the finest gutta-percha as the insulating medium. By applying the gutta-percha in three distinct layers, one after the other, any flaw or imperfection in one coating is certain to be overlaid by either of the others. A lapping of yarn saturated with a mixture of tar and pitch is then wound round about the gutta-percha covering, to serve as a bedding upon which the external protecting wires are placed. The protecting strands are eighteen in number, each composed of seven charcoal annealed iron wires—No. 22 gauge. There are, therefore, 183 miles of wire employed in the formation of each mile of cable;—or, for the entire length of 2,500 miles to be constructed, no less than 332,500 miles of wire must be drawn and twisted into 47,500 miles of strand, 2,500 miles of which will be embosomed in a thick insulating coating of gutta-percha, to which the remaining 45,000 miles will be applied as a protection against strain or external injury.

The diameter of the cable, when completed, will only be about three-quarters of an inch, and from the way in which it is made, it will be so flexible, that it may be tied in a knot round the arm without injuring it.

The weight of the cable is slightly under a ton to the mile. Many of the cables hitherto laid have weighed eight to nine tons to the mile.

The cable is capable of resisting a strain of about four tons; and as the greatest depth is 2,972 fathoms or 2½ miles, the maximum of vertical strain upon the cable, which loses about one-third of its weight in water, will only amount to a ton and a half—the difference of specific gravity between the water and the cable.

The cable will, probably, be strengthened towards the middle by the substitution of steel wire for iron wire—so as to bear a strain of about ten tons. The enormous cost of steel wire, and the difficulty of procuring it in any quantity, would preclude it being employed for any considerable distance; and as there is an ample margin or surplus of strength in the iron wire coating, it has not appeared necessary with the mere view of employing the former to postpone the operation for several years and trouble the capital required.

The cable is contracted for, in equal portions, by Messrs. Kuper, of Greenwich, and Messrs. Newall, of Gateshead, both firms well-known makers of submarine cables: both are bound to complete their contracts by the end of May.

The machinery employed to spin the cable consists of a large horizontal wheel, round the circumference of which are arranged a series of bobbins of the iron wire strand which is to constitute the protective armour of the cable. The gutta-percha covered copper wire, made by Mr. Statham, at the Gutta Percha Works, and subsequently wrapped over with the layer of tarred yarn, is passed through the centre of the vertical axle of the wheel to which the bobbins of wire strand are attached, and is enveloped by the wheel in revolving with a spiral covering of the outer strands.

The distance to be traversed by each of the two vessels in laying down the cable, is but little more than double that already passed over, without difficulty, in laying the line between Varna and Balaklava.

#### THE "CRITIC" ON ARCHITECTURE.

THE report on architecture as a fine art, founded on the illustrations given in our journal, is still ably continued in the *Critic*. We extract a portion of the article in the current number. Speaking of our view of Canina's entrance to the Villa Borghese, the writer says:—

"We are by no means inclined to advocate the general appliance of strictly imitative design; but exceptional circumstances may arise which fully warrant its occasional practice; and at all events, we cannot but admire the example before us, considered *per se*, and as tending to keep alive the reverence which is due to the ideocratic perfection of ancient art. Speaking with stern truth, the gate-lobes of a palace should be 'affined and kin' to the palace itself; and such is not the case in the relationship borne by Canina's propyleum to the mansion it pertains to; but, as the error is on the side of superior beauty, we must be critically indulgent, and then we are left to acknowledge the 'beautiful exceedingly.' The question is, whether, with the same amount of substance and decoration, so charming a result could be obtained by the application of any other style, as Canina has produced by his Borghese gateway? What an elegant majesty pervades! how chastely ornate,—how unaffectedly refined,—how simply eloquent! What mental cultivation may we imagine in the body of the volume so gracefully prefaced? We will but refer our readers to the woodcut in justification of our eulogy.

The front of the Clothworkers' Hall, London (see *Builder* for Nov. 8, 1856), would seem to indicate another regal meeting on the 'Field of the Cloth of Gold,' so ornate is it in emblems of civic splendour. It is another proof to the growing appreciation of the Anglo-Venetian Classic, and will greatly enhance the richness of the London street architecture. Its clustered plastral reliefs, ornate cornice, and fenestral efficiency, are accompanied by much proportional beauty; and the façade is altogether highly creditable to the repute of Mr. Samuel Angell. We could almost wish the uppermost window-openings had been square-headed, since, after all, the architect has felt the necessity of finishing their top-dressings parallel with the soffit of the entablature immediately above; and we would, deferentially, submit to Mr. Angell whether some gain of light to the rooms might not be had consistently with no decrease of beauty to the windows. It may be that the keystones of the three arches have some relation to the support of a largely projecting entablature of long bearing; but the square-headed openings might be crowned with a cornice which would still more efficiently support the superincumbent architrave. The gradual increase of richness, as the building ascends, is, we think, in the best taste.

In another woodcut of the *Builder*, for Jan. 17, 1857, is a perspective of the interior of the Clothworkers' Hall, the aspect of which is splendidly scenic. Though the general arrangement of the component features is pretty much according to book, there is a superadded force which removes it above the level of common-place. A mere well-informed student of Sir Wm. Chambers might have similarly employed the arched 'order,' the clerestory, groinings, and ceiling; but Mr. Angell has shown the accomplished artist in certain superadded details, in their ornamentation, and in what may be termed the emphasis which marks those passages of his composition which are most susceptible of effective treatment. The red granite columns, with their grey granite bases, cannot fail to be imposing, though the material of the capitals (Cæan stone) seems to be something under the mark for the crowning member of such costly appendages, unless, indeed, they are to be heightened in effect by colour and gilding. This interior, however, is, at the least, a very excellent specimen of academic Roman design; and as such we rejoice in being able heartily to commend it.

Nothing can contrast more remarkably with the last-mentioned interior than that of the Gallery of the Bank of France, Paris, illustrated in the *Builder* for Jan. 3, 1857. The scenic and theatrical character of the latter, having more to do with the upholstery than the architecture, depends on the abjuration of all severe criticism, and on an abandonment to mere decorative prodigality. It is of the period of Louis XIV. and emblematises the florid profuseness of his court, in its excess of carving, gilding, and paint.

Trinity Presbyterian Church, Kingsland.—The view of this building given in the *Builder*, 24th Jan. 1857, is comforting to the critical perceptions, for, in connexion with the evidence of an educated taste, it shows invention and considerate judgment. It would, perhaps, be difficult to find so well composed and pleasingly proportioned a steeple among the genuine Mediaeval examples of its kind. The buttressing of the tower is far better than is usual. Artistic feeling and constructive propriety go hand-in-hand from base to apex. We only wish the lower gabled canopies near the base of the spire could have a little more projection, so as to allow greater length to the little pinnacles that support the outthanking angles."

#### SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.

I HAVE perused with much satisfaction your valuable article headed "The Provision of Dwellings for the London Poor," contained in the *Builder* of the 7th inst. and fully concur in the justice of your remarks. Permit me, however, to state that you have been led into a slight error in that portion of your article which refers to our "Model Building" in Portpool-lane. I immediately referred to our "In-Portpool Dwellings" on the subject, and desired speedily to give my explanation, which he has done, and which I now enclose to you. I am sure that you will desire to render our society, for which you have always manifested a deep interest, the simple justice of giving insertion to Mr. Harwood's note.

H. HARWOOD HARWOOD, Hon. Sec.

Str.—I notice in the last number of the *Builder* a statement that at the "Thanksgiving Building" in Portpool-lane, there is an unaccountable supply of water, occasioned by leakage of the pipes. Allow me to state in reply, that there has always been an abundant water supply, but owing to a temporary disarrangement of the valves some little inconvenience has been unavoidably experienced although they were not "left unattended to." During



the necessary repairs, plenty of water was always obtainable at the other end of the building.

JAMES HOLCROFT,

Inspector of Dwellings to the Society,  
H. Harwood Harwood, Esq. Hon. Sec.

“\* We willingly comply with Mr. Harwood's request, but it will be seen that there was no error on our part. We simply stated what was the case, namely, that “we were surprised to find complaints made by some of the tenants of a very insufficient water supply,” &c. The complaints unquestionably were made. We willingly believe the cause has been removed.

#### “WOLVERHAMPTON WORKHOUSE COMPETITION.”

Having received a letter from the Clerk to the Board of Guardians of the above workhouse, informing me that the Guardians considered my plans to be the second-best, I should wish it to be understood that though I competed, I was under a pledge with Messrs. Bidlake and Lovatt, likewise with me,—that, in case of success, we would each abandon it unless we obtained the full per centage.

EDWARD HOLKES, Birmingham.

“\* We have also received a letter signed “Robert Bibbels,” “Edward Banks,” “Griffin and Weller,” and “J. R. Veall,” wherein they “indignantly repudiate” the motives ascribed to them in Messrs. Bidlake and Lovatt's reply (at p. 78, ante) to their first letter (p. 66), and renew their assertion that the latter gentlemen have not kept faith with them. Great pressure on our space prevents the insertion of it, and moreover the case can rest on the above note from Mr. Holmes.

#### Books Received.

*The Year-Book of Facts in Science and Art, for 1856.* By JOHN TIMBS, F.S.A. Bogue, Fleet-street. 1857.

ANOTHER year brings round another record of scientific and art valuable, gleaned by Mr. Timbs from many sources, and forming a most useful book of reference in all that relates to the most important discoveries and improvements of the past year, in mechanics and the useful arts, natural philosophy, electricity, chemistry, zoology and botany, geology and mineralogy, meteorology and astronomy. Thus many important steps in general advancement, which might be swamped by subsequent events and subjects of interest, are rescued from oblivion, and so placed as to be easy of access, and likely to be ever and anon turning up again into notice, and fructifying in inventive minds into new discoveries and improvements to be hereafter also recorded. We are glad to note that Mr. Timbs begins to break through his too modest rule of refraining from the expression of personal opinion. The comments of one who is constantly in the habit of reviewing the general progress as Mr. Timbs does, cannot but add value to a work such as this. To the present volume is prefixed a portrait and memoir of Professor Graham, the present Master of the Mint.

#### Miscellaneous.

**EVENING CLASSES, CROSBY HALL: HOPE FOR THE DESERVING.**—Mr. Thomas Brodribb and Mr. Edward Chaplin, two of the members of this institution, have just been appointed clerks of this class in the Educational Department of the Privy Council Office, after a competitive examination by the Civil Service Commissioners. The number of candidates admitted to compete for five appointments was twenty-one. This is the second occasion upon which the Lord President has placed at the disposal of the Rev. Charles Mackenzie, as honorary secretary, the privilege of nominating members of the evening classes as candidates for clerkships, and on the former one was successful.

**MEMORIAL CHURCH AT CONSTANTINOPLE.**—We are informed that the four prize designs for the church at Constantinople, will be shown at the next meeting of the Architectural Exhibition (Tuesday, 17th).

**CLOCK-TOWER, ABERYSTWITTH.**—The Clock-tower at Aberystwith, of which we gave a view lately (p. 47, ante), is in the market-place, being the most central and elevated point available: the dial will be illuminated with gas. The blue lime-stone of the locality is used for plain walling, and the dressings are of free-stone, from the Stourton-hill quarries, in Cheshire. The diameter of the tower is 15 feet above the plinth course, slightly battened up to balcony, and from thence to main cornice. The total height is 72 feet 2 inches to the top of the vane staff. An archway, with ornamented cast-iron gables, leads to a circular staircase to balcony, from which the ascent to the clock-chamber and top of tower is by cast-iron staircases.

**SMOKY CHIMNEYS.**—In reply to our correspondent, “Z.” (p. 56), six or seven gentlemen have requested us to hand their names to the inquirer as ready and able to do all he wants in the way of cure. This, however, we decline. When we give insertion to such an inquiry, it is with the hope of eliciting information for the general good. In the matter of smoky chimneys, however, each case requires to be judged of separately.

**THE BUILDING TRADES AT BIRMINGHAM.**—There is a continued depression in all the branches of the building trade at Birmingham. Few, if any, public works are in progress, and at no former period did so many “tramps” pass through the town in search of employment. Hundreds of applicants have been relieved by the officers of the various friendly and trades societies existing within the borough.

**AUCTIONEERS' EXCHANGE.**—An “Auctioneers' and Land Agents' Subscription-room and Exchange” has been established in London, at No. 2, Prince's-street, opposite the Bank of England. The rules and regulations agreed to fix the annual subscriptions, from January to January, at 3s. 3d. for individuals, and 4s. 4d. for firms, payable in advance. Mr. C. C. Roberts is the secretary. One of the chief objects of this new association is to supply a perfect system of registration, to enable the members more readily to find purchasers for what they may have to sell and obtain investments for those wishing to buy. Another object is the raising of the position and public standing of the profession. The bringing of buyer and seller to one central point is itself an important object for the facilitation of business.

**THE LIVERPOOL TIMBER TRADE.**—Mr. E. Chaloner, of Liverpool, in his annual wood circular, dated “30th January,” on the timber trade since the 31st January, 1856, states that the import has been the largest on record, the aggregate import of all woods showing a total of 477,350 tons, or an average of 1,810 tons per day: it has increased 52 per cent. within the past six years. This difference is almost wholly in spruce deals: square timber has remained almost stationary. Spruce deals have advanced within five months from 8s. 15s. to 10s. 6s., and again declined to the present price of 8s. 6s. per standard. A spirit of speculation has for some time prevailed, and a secret system of withholding the prices of wholesale operations. Returns of colonial fir, in logs and planks, show an increase in import of 1,206,507 feet, or 7 per cent. and in stock 1,444,820 feet, or 17 per cent. whilst the consumption is about the same as the previous year.

**ENGLISH ENGINEERING IN BRAZIL.**—On the authority of Mr. Neill, the Consul-General for Honduras, we are enabled to state that the works of the Pernambuco railway are progressing favourably under the superintendence of Mr. J. Bayliss, C.E. the representative in Brazil of Mr. Furness, the contractor; that Mr. Peniston, the company's chief engineer, reports most encouragingly as to the solidity of the execution of the works; and that they will be completed before the time originally contemplated; and, from the interest displayed by the people of the country in the undertaking, that the traffic is likely to considerably exceed the prospective estimate. Mr. Bayliss, on the part of his principal, it appears, had been exercising his engineering skill by sea as well as by land, the wreck of the *Marguis of Olinda* steamer, of 1,000 tons, having been purchased as it stood in its wrecked state, forty-five miles from Pernambuco, for Mr. Furness, and half of the hull raised and floated safely to shore by Mr. Bayliss, who was engaged, by last accounts, in recovering the remainder, in the midst of impediments deemed insurmountable.

**THE IRON TRADE.**—In Staffordshire the trade is reported to be quiet and steady; prices pretty well maintained, but no chance of any advance.

**THE NATIONAL MUSEUMS AND THE SOCIETY OF ARTS.**—At a meeting of the council of the Society of Arts, on Wednesday, the 4th instant, the following resolution was adopted:—

“That the secretary be instructed to inquire of the Institutions in union whether they consider the time has arrived when, in order to give just facilities, throughout the United Kingdom, for acquiring knowledge in art and science, it is expedient that the National Museums situate in the metropolis and elsewhere, such as the National Gallery, the British Museum, the Museum of Ornamental Art, the Museum of Practical Geology, and the public Museums in Ireland and Scotland, &c. which have already acquired, or may hereafter acquire, by Parliamentary votes, specimens of art and science should be rendered, as far as may be practicable, useful to the local institutions promoting art, science, and literature, throughout the United Kingdom, especially the Mechanics' and Literary Institutions in union with the society, and free libraries. Should it be the opinion of the Institutions that the time has arrived, the council of the Society of Arts request that they may be favoured with opinions as to how the object may be best carried into effect, and the council will be prepared to afford facilities for the discussion of the subject. That a copy of this resolution be sent not only to the Institutions in union, but also to the provincial museums which are in union with the society, and to the free libraries in the United Kingdom.”

We are forced to admit our inability to divine the exact object its promoters have in view.

**SHAKESPEARE'S HOUSE.**—We learn that a meeting of the trustees of Shakespeare's house has been held at Stratford-upon-Avon, when several tenders were received for the demolition of the houses and cottages which surround the birthplace of the poet; and that the tender of Mr. William Holtom was accepted, and a contract entered into for the removal of the premises within one month. It is to be hoped that the trustees are advised by an architect, or much irreparable harm may be done. When we were last at Stratford a careful eye seemed wanting.

**ST. PETER'S, STEPNEY.**—The new church-schools of St. Peter's, Stepney, were opened on Saturday, 31st ult. by the Bishop of London. The district consists of 13,000, mostly of poor and labouring people, chiefly dock labourers, and the room which has been built, will enable the Rev. P. J. Rowsell to assist and instruct those who, from various causes, do not go to church. The building was erected under the direction of Mr. Chas. Barry, and cost 1,550*l.* There will be here 1,000 children under instruction in this one district connected with St. Peter's Church.

**HOLLOW-WICKED CANDLES.**—Having seen the article on hollow-wicked candles, signed “An Unemployed Clerk,” allow me to say I tried the making of the same candles in 1849, and then found the following obstacle against them.—That the tallow will run into the tube, and stop the air, independent of burning away very fast. If the unemployed clerk will spend as much time over it as I have done, he will find other drawbacks besides that which I have mentioned.—W. J. W.

**INSTITUTION OF CIVIL ENGINEERS.**—On the 3rd of February, Mr. G. P. Bidder, V.P. in the chair, two papers were read; the first, “On the Varieties of Permanent Way, practically in use on Railways,” by Mr. W. Bridges Adams; and the second paper, “On some Recent Improvements in the Permanent Way of Railways,” by Mr. P. M. Parsons.

**LIVERPOOL ARCHITECTURAL SOCIETY.**—The ninth meeting of the session was held on Wednesday evening, the 28th ult. at the Royal Institution, Mr. Huggins in the chair. Mr. Chantrell exhibited several specimens of Staffordshire brick and terra cotta tile, as well as a large terra cotta chimney flue, suitable for dwelling-houses, which, on account of its heat-retaining properties, was said to be an excellent contrivance for creating a draught, and thereby promoting ventilation. Mr. Pictou introduced the subject of the action of water upon lead, which led to an interesting discussion, in which Mr. Verelst, Mr. Horner, Mr. Weightman, secretary, and Mr. Dawson took place. A paper by Mr. R. Rawlinson, “On Factory Chimney Construction,” was read in his absence by Mr. Pictou.

**STATUE OF TURNER.**—The great painter left by will 1,000*l.* for a monument to his memory in St. Paul's. It is to be a statue, and it is stated that Mr. M'Dowall, R.A. is chosen to execute it.

**BEVERLY MECHANICS' INSTITUTE.**—Last week, Mr. Charles Brexton (the mayor) delivered a second lecture here, on “Ecclesiastical Architecture.” Notwithstanding the inclemency of the weather, there was a large and respectable audience present.

**SMITHFIELD.**—I hope you will protest against employing the site of Smithfield as a dead meat market, with its reeking carcasses and disgusting sights and smells, the site being an excellent one for a handsome fruit and vegetable market, instead of that in Farringdon-street, adorned with fountains and other embellishments, so as to make it an attractive promenade as well as a place of business. Surely, even at the eleventh hour, such a desecration of one of the finest sites in the metropolis may be prevented: should it become a meat market, it will probably remain so for generations, with all its nuisances and abominations.—G. H.

**NEW PARK FOR GLASGOW.**—By the casting vote of the Lord Provost of Glasgow, the corporation have purchased ground on the south side of the river for an additional park, at the sum of 30,000*l.*

**THE LATE MR. T. SEDDON.**—A meeting has been held to express the sense entertained of the merits of the late artist, Mr. Thomas Seddon, whose death we announced a short while ago. The chair was taken by Lord Goderich. Mr. Ruskin moved, and Mr. Hunt seconded, the first resolution:—“That an exhibition be held during the present season of the works left by the late Mr. Seddon, which shall be open to sale.” Mr. Tom Taylor moved the second resolution:—“That out of the public subscription which it is proposed to raise, 400 guineas be given for the purchase of Mr. Seddon's principal work, the oil picture of Jerusalem, from his widow, for presentation to the National Gallery; and that, if any surplus remain after the purchase and payment of the necessary expenses of the exhibition, &c. Mrs. Thomas Seddon's acceptance of it be requested.” Mr. Ruskin has consented to act as treasurer, and Mr. W. M. Rossetti, of No. 45, Upper Albany-street, as secretary.



For the completion of Nos. 4, 5, 6, 7, Grosvenor-villa  
Holloway-road. Mr. William Sim, architect:—

Fish .....	£1,200	0	0
Cawland (accepted).....	1,100	0	0
Watnaugh.....	1,067	16	0



# The Builder.

VOL. XV.—No. 733.



SINCE we last referred to the question of the Thames bridges and the Government Offices, there have been several indications that the importance of greatly improving the communications between the opposite sides of the river is being viewed by the Government, and in other quarters, with increased attention. The works at Chelsea-bridge are in active progress; one of the chains is now fixed, and it is expected that the bridge will be open this year. We shall have another opportunity for noticing any points of interest which there may be in this case, in the method of construction. In regard to that portion of the metropolis to which more especially our recent observations applied, it appears to be now admitted that three bridges for carriage traffic are urgently required in the distance between Vauxhall and Waterloo bridges. Whether the sites which are contemplated are quite accordant with the views which we expressed, especially as to the site of Westminster-bridge, is not, however, sufficiently clear. Sir Benjamin Hall, in the course of his reply to questions from Mr. Locke and Mr. Williams, on the 9th, informed the House that nothing could be decided upon as to Westminster-bridge till after the designs in the competition for Government Offices had been received; but the proceedings of the Government throughout, show that their opinion tends to a modification of the present route from the Middlesex side. Indeed, according to the report in the *Times*, Sir Benjamin Hall said in the House,—"If they decided that it should not be removed, they would then have to say whether the bridge now being constructed should be proceeded with." So that one seriously important point in the question,—the loss from abandoning the present works,—appears to be left out of the first consideration. Are we also to understand that the question of the principle of construction is once more to be thrown open? One question, at least, seems from the reply of Sir Benjamin Hall, to be as little understood as though half-a-dozen different committees or commissions had not recorded evidence upon it. Can any fresh point for consideration have arisen between the date of the last investigation, and the present time? If not, the system here illustrated is far more serious in its effects than it is presented to us in the case of a single public work, for, as we have before shown, it is inconsistent with all progress. And can the statement be correct, that there has been no survey of the river since that of Telford? We might venture to refer to the First Report of the Commission for Improvement of the Metropolis, if there should be no later record to strengthen our doubt. With reference to the site of the bridge, the very wording of the particulars to architects is calculated, we fear, to bias them,—so that in place of what might serve the question—a calm view of it, in which the outlay already made would have some weight—the competitors are rather likely to mould their designs according to what so much appears to be the acceptable opinion.

Regarding other required bridges, it is reported that a bridge from the Horseferry to Lambeth Palace, joined by a road from the

Pimlico end of Victoria-street to Millbank, is again under consideration, as also that the Government support the scheme for widening Hungerford-bridge in lieu of the bridge to which we referred as designed some time back, and which was to cross from a point nearly opposite the Horse Guards, with one access to it from Charing-cross. The Hungerford Bridge, or rather as they are called "Charing-cross" Bridge Company, after widening the bridge on the present piers to 48 feet, with the requisite additional chains and strengthening trusses, propose to get their access by removing the market,—but the alternative has been considered, of forming a curved access from Whitehall, using the present line of Whitehall-place, if we understand the scheme as set forth, by which there would be the disadvantage of an approach with considerable curvature and a steep gradient. On the Lambeth side, the proposal is to work in with the line of the street intended by the Metropolitan Board of Works, as well as to furnish an access to the South-Western Railway on arches to its own level. This proposition, however, assumes that the scheme of the Metropolitan Board will be preferred to that of Mr. Pennethorne, whose plan, it should be observed, was made in connection with the site then proposed for the bridge before referred to, with approaches from Whitehall and Charing-cross.

On the same evening on which the proceedings in the House took place, Sir Benjamin Hall announced that 1,791 copies of the particulars for the Government Offices had been sent out, 1,371 of them being in reply to applications. This, of course, by no means implies that the persons who compete will be so numerous,—though, no doubt, the event will be an extraordinary one in the history of architectural competitions.

Competitors are most anxious as to the selection of proper judges with reference to the designs for the new Government Offices, and for laying out the neighbourhood, about to be sent in. In the House of Commons, on the 16th, Lord Robert Cecil said he should be glad to know from the Chief Commissioner of Works whether the judges of the approaching competition, with reference to the new Government Offices, would be appointed before the day on which the plans were sent in. Also, whether he intended, in appointing the judges, to confine his selection to those who were unentangled by any personal connection with the profession, or whether he intended to include among them practising architects. In reply, Sir B. Hall said it was not his intention to nominate any of the judges until after the plans were sent in. With regard to the selection of judges, it was his intention to nominate some gentlemen who were not connected with engineering or architecture, and to associate with them others having a thorough knowledge of those professions. It would, however, perhaps be difficult to select competent persons who were not at all connected with the competitors; but he would certainly endeavour, in the selection he should make, not to nominate any persons who were competitors or were connected with competitors.

As we are speaking of Government works, let us refer in a dozen lines to the proposition set forth in our last, at p. 89, to adapt the British Museum for the reception of our Art Treasures, in order to remove the impression of some of our readers that Sir Charles Barry's scheme requires the immediate purchase and appropriation of the surrounding property. This is by no means the case, as all the accommodation that may be required for years to come may probably be obtained within the limits of the existing building. It is proposed that the institution ultimately should not only be devoted to Art and Literature, but to the Royal Academy of Art, Schools of Design, and

the increase of the collections, for which purposes it might be necessary hereafter to purchase the surrounding property referred to. One result of the completed arrangements might be an amalgamation of all annual or other periodical exhibitions of modern art and science, in the building in Trafalgar square, with a grand hall for national demonstrations and displays of music, in those times to come when the provision of intellectual enjoyments for the people will be more considered than it is now. Let us add that, although last week we appropriated the quadrangle of the Museum to antiquities, this might still remain appropriated, as is now intended, to readers. The scheme as set forth in our last, has been received with considerable favour, and we are therefore anxious that no wrong impression in respect of it should exist.

## ON THE USE OF ANCIENT ARCHITECTURAL EXAMPLES.\*

The temple of Minerva Medica must have been, when complete, a building of considerable beauty, and of a finer and more varied outline than the Pantheon. Here the buttress is adopted without disguise or concealment, as in mediæval buildings,—and the area is expanded by a series of apsidal recesses; a hint not lost upon later architects, for it is acted upon in the polygonal part of St. Gereon's church in Cologne. At Tivoli are two circular temples; one, the well-known Sybil's temple; surrounded by a circle of columns with their entablature,—in fact, a Greek temple of a round instead of rectangular form; and one in brick, on a plan somewhat similar to that of Minerva Medica, but smaller and simpler. It has eight arched recesses within, of which the alternate ones are apsidal: over each of these on the outside of the wall are deep arches, so that the upper part is lightened, without diminishing the abutment required for the dome. The temple at Baia is of the same description. This has some corbels of a very mediæval character, but there seems no reason to suppose they are not original.

From such temples as these we readily pass to the early circular baptisteries, which were, no doubt, suggested by them. \* \* \* It is impossible to enter the Pantheon at Rome without being struck with the advantages of its plan, as well as the magnificence of its appearance, and I never saw a church lighted in a more perfect manner. I have been in it on a rainy day, when the opening of the top was covered with a cloth, and on a fine day, when it was open to the sky, and cast a single bright spot on the surface of the wall: in either case it displayed the grandeur of the interior, and appeared fully sufficient for the congregation.

We cannot wholly deny to the aqueducts of the Romans the title of architectural works. They must have been intended, as they were calculated, to form a magnificent feature in the scene through which they passed. I will at present only refer to that of Joux aux Arches, in France, about six or seven miles from Metz. You pass it on the line of railroad from Paris, and there is a station pretty near. The aqueduct was carried across the valley of the Moselle, and it remains appear on both sides of the river: the principal and most imposing part is a line of arches which crosses the street of Joux, on piers, taller than ordinary village church towers, and of great massiveness. The peculiarity of these piers is that they are divided into several stages, each less massive than that beneath, instead of tapering gradually their whole height. I suppose the strength in each case is pretty much the same: the form of these I think more pleasing than that of our usual viaduct piers. The arches are semicircular.

Although decorative art, from the decline of the Roman empire to the twelfth or thirteenth century, was of a rude, rather than a refined character; yet we can during no period find buildings of better design, both in plan and outline. The basilican plan expanded into the

\* From the paper read at the Architectural Exhibition by the Rev. J. L. Petit. Conclusion. See p. 72, ante.



Latin cross, a form never abandoned by the church builders of any age or country, and to which we are indebted for the grandest, the most imposing, and the most picturesque edifices that exist. That magnificent addition, the tower at the intersection of the cross, has, I believe, no prototype in classical architecture; and however this may have been enriched or carried up in height as Gothic architecture advanced, it never appears with greater majesty than in the large conventual churches of the eleventh and twelfth centuries. Nothing can be really finer in general outline than St. George, Bocheville, in Normandy, which is nearly, if not entirely, unaltered; or, in our own country, the abbey church of Tewkesbury, which, though the choir was rebuilt in the fourteenth century, and consequently with Decorated details, still retains, in all essentials, its original form and proportions. As the choir was lengthened, a greater height was felt to be requisite for the central steeple; and Salisbury affords a very perfect example of proportion. But on the whole I cannot help thinking that the long nave, the massive central tower scarcely exceeding a square in height, or even much lower, with a choir and transepts differing but little in their extent from the square of the intersection, form a composition which gives the greatest dignity both to the whole outline and to each part independently. We may like to see other arrangements for the sake of variety, but this is one to which we always revert with pleasure. The massive Norman tower, in its proportions, though not in its details, is preserved through every change of style. We see it in churches of every degree of importance or richness; sometimes with not enough ornament to give an idea of its date; sometimes, as in Merton College, with all the enrichment of its style. The square central tower, though it survived the fall of Gothic architecture, appears rarely in churches of the revived Italian: the circular dome and octagon, also owing their origin to the Byzantine and Romanesque period, are of constant occurrence: though the former was dropped during the reign of the Gothic, the latter prevailed through the whole of it. Both are beautiful features, externally and internally, and capable of great variety, particularly in combination with other towers. Of the octagon one might give an interesting series of examples from a rather early Romanesque period to nearly the present day. One of the most effective I know is that of St. Cydon, between Dijon and Sens; a church of the eleventh century.

To the period between the decline of Roman art and the full development of Gothic, we are to look for many striking groups and combinations of towers. The low central lantern with a lofty campanile attached to some part of the church, or altogether distinct, is common throughout Lombardy. The combination was a very favourite one in Italy after the revival, and tended to divest the churches of that formality which we are apt to attach to the style. It is, however, quite a mistake to suppose that formality is necessarily a characteristic of revived Italian: not only the churches of Italy, which are as varied in their plan and outline as any group of Gothic churches, but those of Sir Christopher Wren in our own country, thoroughly disprove any charge of monotony or dull uniformity.

St. Mark's, at Venice, is a true type of the style, as well as the city to which it belongs; an inexhaustible magazine of treasures, full of splendid ideas, and suggesting enough to fill out and enrich the architectural systems of ages and nations; yet if we look to it for the establishment of a fixed rule or principle, we shall find the foundation as unsteady as that of many of the towers which nod over the canals and lagoons. We go to Venice to admire, not to criticize; to give ourselves up to the fascinations of the scene, and allow the imagination to wander through all the endless vistas which it opens to us, not to search for rules and conventionalities which are to restrain it. That group of domes has furnished suggestions to great architects. For whoever designed the church of St. Front, in Perigueux, and introduced the domical arrangement of the roof into the district in France of which that city is the centre, must have been a great architect.

St. Front has the actual plan of St. Mark's, the five domes forming a Greek cross, with a decided barrel roof between each, so that if the present roof were removed which covers the domes, they would appear distinctly, as in the Venetian edifice, without being crowded together.

The buttress, we have seen, was used in the temple of Minerva Medica, in Rome; but it does not appear to have been in frequent use, at least externally; nor is it employed to any great extent during the prevalence of the Romanesque style, for the flat Norman buttress is little else than the ancient pilaster; and though it may in some degree strengthen the wall at the point where it is applied, its use is mostly to form vertical lines at certain distances, and thus give an increased effect both of extent and height; and even when decided buttresses with the set-off were used, they were seldom of any great depth. The immense vaultings of Anjou could not dispense with them, but, though large masses were applied externally, much of the buttress was often internal, and the architects did not employ them as if they liked them as a feature; in fact, they seemed anxious to avoid as much as possible the appearance of lateral thrust or pressure, and retain the idea of a wholly vertical support. Hence the segmental arch was rare, and the stilted very common. The Gothic architect, on the contrary, delighted in his buttress, enriched it with his best ornaments, crowned it with an elaborate pinnacle, and made it the great characteristic of his style. The architect of the Renaissance learnt from him to be less afraid of displaying lateral pressure and corresponding abutment: segmental arches became common, and these are a greater innovation upon the semi-circular arch than even the Pointed arch. And buttresses were used freely, though not always successfully, as far as appearance is concerned: a good revived Italian buttress is still a desideratum. There is a church in Rome to which the masses used as buttresses give a very curious outline.

As a Romanesque composition, which might suggest a very pleasing front, I may call your attention to the palace of Theodoric, in Ravenna. The recess in the upper stage of the central compartment, the ledges on which the flanking arcades are supported, and the simplicity of the lower part, give this front great character.

I could produce abundance of examples showing how one style of architecture uniformly affected that which succeeded it; and how even when on the decay of the Gothic a revival of Roman art was undertaken, the principles of that which had just passed away were neither forgotten nor recklessly abandoned.

Whether he endeavours to revive an old style that has been superseded by some other, or to invent altogether a new style, the architect ought to learn how to make the most of the range of examples which he already possesses. No sound mode of construction, no convenient plan or arrangement, no beautiful outline, ought to be abandoned, on the mere ground of inconsistency with the style he adopts. He must retain all the good that he can belonging to former styles, and add as much as he is able. If he rejects anything it must be because he really and truly likes better what he substitutes in its place. His art and genius will be shown in amalgamating the beauties of different styles without inconsistency. There may be some beauties that cannot possibly be combined, but I believe the number of these will be found to be much smaller than we suppose, if we can divest ourselves of prejudice, or set up some other standard of merit besides archaeological correctness. I do not suppose the Romans rejected, upon principle, anything that was Greek. They may not have always been skilful in their manner of combining Grecian elements with the other parts of their system; but by making the combination at all, skilfully or unskilfully, they took a great step, and have left in their architectural remains a school which must have its influence for many ages. If the mediæval architects rejected any part of the Roman system, it was because they did not want it, or did not like it, or liked something of their own better. They saw the beauty of a continuous range of arches, and felt

they could dispense with the entablature. They saw also, or supposed, that this beauty was increased by giving the arch a particular form, and therefore they rejected, in great measure, the round arch in favour of the pointed. They did not reject it altogether, for when they conceived that the construction or composition required a round arch, they introduced it unhesitatingly,—as in bridges, and they even resorted to the trabeal system when beauty or convenience demanded it,—as in the porches and other parts of Chartres Cathedral, in the transoms of continental doorways, and in our own Edwardian doors and windows. Nor did they reject the engaged column or pilaster of the Roman pier, but turned it to good account as a vaulting shaft. Again, as we have seen, the revivers of the Classical styles made ample use of the intervening Mediæval styles. Much of their early work might readily be mistaken for Romanesque or Byzantine. They availed themselves freely of every mode of construction exhibited by their predecessors. They frequently gave their buildings a lightness much more accordant with the Gothic than the ancient Roman character. Had they wanted, or liked, the Pointed arch, they would have used it. I think a church near Pavia, which has Pointed pier arches, but in other respects is entirely of Renaissance character, is contemporary with buildings that are purely of revived Italian. And pointed vaulting cells, the advantage of which is clearly obvious, are used in revived Classical buildings throughout Italy.

Our first revivers of Gothic architecture put Grecian and Italian temples into a Gothic dress. Their fault was that they did it clumsily. Had they made the dress sit better, and more gracefully than the old one, they would have achieved a great triumph: as it is, they did not come so near the mark as the architects of the last period of the Gothic in our own country, whose works deserve more commendation than it is just now the fashion to give them. If we cannot adopt the Gothic style without abandoning forms and plans of beauty and convenience, or any decided advantages, whether of construction or arrangement,—if we cannot make it apparent that the requirements of the style involve no sacrifice, or the least possible amount of sacrifice in anything that can be deemed important,—then I say, the sooner the style is dropped the better; there is no hope of an effective revival. But if such a development is really going on, as will enable us to retain all the beauties of the Gothic, without the loss of any of the beauties or solid advantages of other styles, then there can be no doubt the movement is for good. But the architect must not pass over even the debased Gothic as worthless. Faulty and incongruous it may be, yet it contains gems that ought to be preserved. Its study may enable us to effect an union between elements we have always considered as at utter variance with each other. Many French churches of the earlier styles are enlarged by additions of the Flamboyant verging towards Renaissance, and even of the Renaissance itself, without disfigurement. There is a beautiful little specimen of this latter style at Caen, the Maison des Genardes, which, had it appeared among the Edwardian towers encircling Alnwick Castle, would have offended the eye by no incongruity. Like those towers, it is ornamented with armed figures on the parapet, from which it derives its name.

I will now, in a few words, repeat the conclusions to which I have wished you to arrive.

That if we would have good architecture, or indeed any architecture at all, we must conform to the laws of some recognized style. That this conformity, however, does not imply a system of slavish imitation, nor a rejection of any change; and that our aim and object should not be the retaining in its integrity of the style we have chosen, but the general advancement of art. That the style we choose should be a refined one, and that its rules should be grounded on principles whose value is independent of local circumstances, the manners or notions of any particular age, or merely conventional opinions. And, moreover, that its intrinsic merit be such as to enable it to bear the most searching tests,—such as the gloss of newly-cut materials, the neatest finish on the



part of the workman, and decorations of the highest order of art.

That we may nevertheless draw largely upon other styles, of whatever age or country, whose principles are less firmly fixed; but to adopt any such style, except as a mere exercise to enable us to become better acquainted with its beauties, is not calculated to advance true art. It may, however, be a still better exercise to attempt the translation, so to say, of a building we admire from one style to another; and as this will be done more frequently on paper than in stone, the Architectural Exhibition will give the public an opportunity of judging as to the probable success or failure of any such attempt.

That in observing established authorities and precedents, we shall be following the example of the greatest men, the master-spirits of the age in which they lived; but that unless we look upon rules as the means of arriving at further excellence,—the foundation of a super-structure yet to be designed, and not as being themselves the standard up to which we are content to work, we shall altogether deprive art, and especially that of architecture, of its life, vigour, and energy.

That no precedent whatever can justify us in the repeated commission of acknowledged faults, without an effort to correct them: the very effort, even if unsuccessful, may tend to the development of new beauties.

The formation of a new style will most probably be gradual: some idea may possibly be struck out which shall cause a sudden and rapid advance; but then we must take care to secure the step we gain; and in art a slow progress, if we can make sure of holding our ground, is better than a brilliant start, with the risk or certainty of its being immediately followed by a retrograde movement.

#### THE NEW STREET LETTER-BOX.

We have often called attention to the glaring inconsistency with which many of our public works are conducted; and when good materials have been at hand how little inclination there has been to use them.

We should have thought, for instance, that when there is a Government Department of Science and Art, with a large and well-paid staff of artistic professors connected with it, in the event of a public work being carried out which needed their professional assistance, their skill would be called into requisition. Hitherto, however, this has not been the case, and our last year's illuminations, the letter-box at present in our thoroughfares, and to crown all, that Brompton abortion, called the Museum, at Cromwell-gardens,\*—all these are lamentable instances of the absence of that guiding artistic power which the country has had, and still has, in its own pay and at command, if Government chose to avail itself of such service.

In the present instance we have to bear testimony to a somewhat original line of conduct on the part of the Government.

The engraving accompanying this notice is from a street letter-box now being prepared to replace that one at present in our principal streets, which we have before referred to. In this instance Mr. A. Cooper, C.E. of Great George-street supplied the constructional design, and the Department superintending the ornamentation, the working out of the decoration most strangely found its way to the Department's own ornamental modelling master, Mr. W. J. Wills, who, as our readers will agree from the engraving, was a very proper person to execute the design.

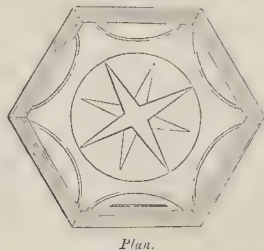
The plan of the box is a hexagon, and the top has a useful little article in the shape of the compass let into the surface. The chief decorations are festoons of flowers hanging from masks at the angles of the hexagon.

Altogether, if the metal castings be sharp and clear, we are inclined to think this will be a satisfactory work.

GAS.—The half-yearly meeting of the Worcester Gas Company was held last week, when a dividend of 7 per cent. was declared.

\* We have some difficulty in keeping up with our friend Mr. Cole's love of name-changing. A week ago the Department dated from South Kensington, now its locale is Cromwell-gardens.

#### NEW STREET LETTER BOX.



Plan.

#### MICHELANGELO BUONARROTI.

Who will not hail with pleasure a fresh tribute to the memory of that great man whose name—so long as memory endure or art humanize—shall live exalted in the annals of those arts that draw their deepest inspiration from his works? Who will not respect the endeavour to lay before the world new features, or at least present, from fresh points of view, known episodes in the life of one who united in himself the highest excellence as poet, painter, sculptor, and architect, whose soaring genius, alike acknowledged by friend and foe, could neither be bought by price nor coerced by threat, but found its true field of action where, unfettered by prejudice, it was left to assert its own supremacy in those works of grand conception and religious fervour that have received the fiat of universal approval? So agreed is the world in its appreciation of the transcendent merits of Michelangelo Buonarroti, that the terms of ordinary criticism degenerate into commonplace platitudes, in judging of the monuments of his genius by the ordinary standard of excellence. The nobility of blood claimed for him is totally eclipsed by that of intellect accorded to him; and in the immortal designer of the cupola of St. Peter's, nobody cares to recognise a descendant of the old Counts of Canossa.

To write the history of his life requires an education to the task—a thorough knowledge of his works—an intimate acquaintance with the history of his times: to analyse the works of his genius has employed the talent of a Vasari, a De Quincy, a Lawrence, a Flaxman, and a Fuseli, and a host of competent commentators, whose thorough knowledge of the subject could

alone give weight to their appreciation, and without that knowledge it may not be lightly attempted.

The first of the two works before us\* does not profess to contain a strictly critical notice of his works as an artist, but rather an exposition of his qualities as a man; and the author, a gentleman well known for his love of art in general, comes armed for his task not only with the principal passages in the life of the gifted man at whose altar he offers the incense of his homage, but with collateral passages in the lives of others whose contact may in any way have influenced the fortunes of the great object of his laudation. These subsidiary portions of the work, though constituting its chief claims to originality—for little can now be said of Michelangelo that has not been said before—yet weaken it as a whole, especially in the case of the biography of Savonarola, who, however he may have influenced his contemporaries, Luca della Robbia, Cornioli, and Cronaca and others, yet could exercise but little influence upon so strong-minded a man as Michelangelo, "whose good sense and mental independence," says the author, "raised him far above any of the extravagancies of Savonarola."

For the biography of Vittoria Colonna, Marchioness of Pescara, a better reason may be given in the intimate friendship that he had cemented with that distinguished woman during the latter portion of his life; but even then his age (sixty-four) precluded the notion of any great change resulting to his career in art from it; nevertheless this one episode in the life of this most unselfish, though lonely man, proves his high appreciation of the charms of feminine refinement. It was her genius that held him spell-bound, and the sentiment was reciprocated. His real feelings towards her are recorded in five poems inscribed with her name; and, though proving her great influence over him, they breathe nothing but exalted sentiments of attachment, produced by kindred nobility of soul, and perfectly free from earthly alloy. The mistress whose sway alone he acknowledged was his art, and in solitude he wooed her. "Ne para nuovo a nessuno che Michelagnolo si diletasse della solitudine, come quello che era innamorato dell' arte sua, che vuol l'uomo per se solo e cogitativo."

In describing the career of such a man, it is impossible to discard entirely from the biography sketches of remarkable men, his contemporaries, and still more important events, inextricably interwoven with the texture of the narrative, and to omit which would do violence to the entire fabric. Surrounded by a circle of eminent men, amongst whom he moved the chief amongst chiefs, at once student and master, he drew inspiration whilst he dispensed it; and in him the revival of Classical art may recognise at once its offspring and its parent. Well might Vasari describe him as "Uno spirito che universalmente in ciascheduna arte ed in ogni professione fusse abile." How truly he followed his art for its love, not for its pay, is best evidenced by his only accepting the direction of the works of St. Peter's upon condition of receiving no remuneration for his services, and that during the eighteen years that he held the office, he never could be induced to change his determination.

Thus the writer of the life of Michelangelo is bound to prepare the reader for his task of dispassionate judgment, by the introduction of such traits in character and events in history as may have contributed to the development of the genius of the great subject of the memoir. And first in order, as in importance, we see again before us the Court of Lorenzo the Magnificent, bright and effulgent amidst paler planets; one of the chief points of concentration for those arts and letters that made Italy in the fifteenth century the focus of intellectual light for the world. Worthy descendant of his predecessor Cosmo, an elegant scholar, and not only devoted to the furtherance of Greek literature, but still more renowned for his advancement of that of his own country; keenly

\* The "Life of Michelangelo Buonarroti," with Translations of many of his Poems and Letters. Also, Memoirs of Savonarola, Raffaele, and Vittoria Colonna. By John S. Harford, esq. D.C.L. F.R.S. 3 vols. Longman and Co.

"Illustrations, Architectural and Historical of the Genius of Michelangelo Buonarroti; with Descriptions of the Places." By the Commandatore's Canina; C. R. Cockrell, esq. R.A.; and J.S. Harford, esq. D.C.L. F.R.S.—Members of the Roman Academy of Painting of St. Luke. Colnaghi and Co.; and Longman and Co.



alive to the faults and beauties of existing art, and devoted to its progress,—he rivalled his grandfather in the task of collecting the finest works, ancient and modern, in painting and sculpture, and eclipsed him by the foundation of the Platonian Academy of San Marco.

His inunction to this academy, by his master, Ghirlandajo, first brought the youthful Michelangelo to the notice of his future patron, and the charming story of the *Doni's* head, so characteristic in its incidents of both patron and *pupil*, forms a prophetic prelude to the sequel of his ultimate success.

After some remarks upon the frescoes of Masaccio, and his master, Masolino di Panicale, —who are often considered as the founders of what is called the Second School of Modern Painting, occupying a middle position between its formation under Cimabue and Giotto, and its perfection under Leonardo da Vinci, Michelangelo, and Raffaele,—succeeded by a short dissertation upon the frescoes of Giotto, we follow Michelangelo into the palace of the Medici, where he found his home until his patron's death, and may study at our leisure a series of portraits of the leading men who frequented it, commencing with Politian, and ending with Ficino.

On this list of eminent literati we only pause upon the name of Ficino, indissolubly connected as it is with the Platonic Academy of Florence, to the philosophy of which school the author refers much of the tendency of the works of Michelangelo. "There is," says he, "one branch of critical investigation connected with the mental history of this great man, which is full of interest, but which has hitherto been imperfectly touched upon,—I refer to the intimate alliance which may be traced between the lofty tendencies of his art and of his poetry, and to the powerful influence exercised upon both by the Platonic philosophy, a deep attachment to which he appears to have imbibed in early youth, through an intimate connection with the Platonic Academy of Florence." He describes the transfer into Italy by the refugee Greeks from Constantinople of the fierce contest that had long raged on the shores of the Bosphorus, between the rival partisans of Plato and Aristotle. He narrates how Cosmo de' Medici became a convert to the eloquence of Plethe Gemisthus, the result of which was the foundation of the Platonic Academy of Florence; and further, by what fortunate chance he selected the youthful Ficino as the future exponent of his doctrines to the multitude; and narrates the unflinching industry of the pliant youth, who, to the mastery of Plato in the original Greek, added that of his commentators, Proclus, Plotinus, Jamblichus, and Porphyrius, the whole of whose works, with those of the great philosopher himself, and numerous other Greek philosophical writers, he translated into Latin, accompanied by copious comments, afterwards printed and given to the world by Lorenzo de' Medici.

The lectures of Ficino, supported by the scholarship of such men as Politian and Mirandula, long formed the attraction of the academy, and it was but at the eleventh hour that he himself was extricated from the mists and errors of a false philosophy, and restored to the light of revelation by the preaching of Savonarola.

A chapter in explanation of the peculiar dogmas of the sects of Platonists, which, originating at Alexandria in the third century, exercised so potent an influence over the whole Roman empire, concludes a digression from the history of the great artist for which, perhaps, there is fair warranty, in the opinion of the author, that the influence of the Platonic Academy "is distinctly to be traced in the artistic works of Michelangelo, inducing a lofty idealism, a love of allegory, and mystical views of nature and art."

The death of Lorenzo, in 1492, cast a temporary shadow over the career of Michelangelo, whose feelings of gratitude for past favours rendered him inconsolable for his loss; and the invitation to the resumption of his residence in the palace of the Medici, by his son Piero, proved but the prelude to further misfortunes. Upon the invasion of Italy by Charles VIII. in 1494, the rash conduct of Piero caused a revolution in Florence, which resulted in his being obliged to flee for his life, accompanied by

his brothers; and the consequence of the downfall of the Medici was the total dispersion of the pictures, statues, and other exquisite works of art, purchased at enormous cost, and selected with equal taste, by Cosmo and Lorenzo de' Medici.

Fearing he might be involved in the proscription of his patrons, Michelangelo had retired first to Bologna, and then to Venice, whence want of means obliging him to return to Bologna,—at that time in much agitation from the presence of the Medici family,—where he found a new friend and patron in the Councillor Aldovrandi, who made his house his home during his stay in that city. Two figures being wanting in the tomb of St. Dominic, in the Jesuits' church, executed by Pisano, Michelangelo supplied the deficiency in the style of the original design, which justly ranks as one of the best works of the revival.

The return of Michelangelo to Florence, in 1494, was at a period of great political excitement. The leading character of the day was Savonarola, a long sketch of whose life, however interesting in itself, forms a disconnection in the chain of Mr. Harford's narrative. The popular government of Florence beneath his auspices—the invasion of Charles VIII.—Savonarola's political and religious schemes,—his exposure of the vices of the papal court under Alexander VI. and rejection of their offer of a cardinal's hat as the price of his silence,—his excommunication, trial, condemnation, and death, form the leading incidents in the history of Florence till 1494. Long previous to the death of Lorenzo, the jealousy of the popular element had prompted the endeavour to shake off the yoke of nobility, but which, after a struggle of thirty-eight years, terminated in a far worse tyranny in the person of the notorious Alexander Medici.

It is to the incident of the statue of the Cupid, as told by Vasari, which, being purchased by Cardinal Giorgio di Riario as an antique, was traced to the authorship of Michelangelo, that the first visit of that great man to Rome may be ascribed; and of his numerous works in sculpture during his two years' residence there, the *Pietà*, for the chapel of St. Petronilla, in the ancient St. Peter's, and afterwards removed to the first right-hand chapel on entering the great door of the modern St. Peter's, was the most celebrated, and raised his reputation to the highest rank.

The conversion of the block of marble of the court-yard of the Palazzo Vecchio at Florence into the statue of David, was his next work of importance; and still greater interest was afterwards excited by his rivalry with Leonardo da Vinci in the decoration of the great council-chamber of the Palazzo Vecchio. Both these great artists were commissioned to furnish a cartoon preparatory to an oil painting. Each chose for his subject an incident in the battle of Anghiari, and each produced a masterpiece. "While the cartoons of these two great masters," says Benvenuto Cellini, "hung opposite to each other, they formed the school of the world. Although the divine Michelangelo afterwards painted the great chapel of Pope Julius, he never again fully realised the force of these his earlier studies." The intention of the Florentine government, in having paintings executed from these cartoons, was never realised. Both were destroyed after serving as studies for numerous admirers,—amongst them Raffaele,— "in whose works from that period," says Sir C. Eastlake, "a closer study of anatomy is apparent."

It was his second summons to Rome, in 1504, by Julius II. that formed the most important epoch in the life of Michelangelo, as from that visit resulted those crowning efforts in connection with which his name will live in honoured memory when the works of his inspiration shall have long passed from the scene of their triumphs.

The conception of a splendid mausoleum, from the design and chisel of Buonarroti, to perpetuate the claims of its founder to the gratitude of posterity, was the first incident in the train of events that resulted in the present church of St. Peter. The next was the allotment of a site for the monument in the then existing fabric, and San Gallo and Bramante

were commissioned to report upon the state of the edifice accordingly. The insecure condition of the old building had been long known, and the reconstruction and enlargement of the tribune had consequently been commenced by the architect Rossetino, under the command of Alexander V.; but at the death of that pope the works were suspended.

It was this locality that Michelangelo selected for the site of the mausoleum, which, judging from the descriptions of Vasari and Condivi, would have been indeed a noble work of art. It was of tetragon form, standing detached, the substructure being covered by a light marble pavilion; beneath which the sarcophagus was to be surmounted by two angels. Forty statues, including eight colossal, with numerous bas-reliefs and enrichments, were to have been its principal embellishments; and the abandonment of the scheme after the selection and carriage of the marble, the partial finish of several of the figures, and endless preparations, owing, it is supposed, to the jealousy of Bramante, deprived the world of the largest and most unique specimen of his genius in sculpture that it ever had the chance of possessing.

One reparation, however, Julius made the world for the grievous wrong done it and art together by his change of purpose, and that was the painting in fresco of the ceiling of the Sistine Chapel. On the occasion of a marked indignity from the pope, Michelangelo had quitted Rome in disgust; and it was some months before the messages of Julius and advice of his friends could persuade him to renew their former relations. The reconciliation took place at Bologna, where he executed a colossal statue in bronze of Julius for the facade of the great church of St. Petronilla, but which was destroyed by the mob in 1511. On returning to Rome in 1508, he found the mind of Julius still estranged from the subject of the mausoleum by the scheme for the rebuilding of St. Peter's under Bramante, even then commenced, in addition to the enlargement and decorations of the Vatican, upon which latter Raffaele was extensively engaged.

According to Vasari and Condivi, it was again the covert scheming of Bramante that induced Julius to force Michelangelo into the execution of a project from which he had an unconquerable aversion, and to which a possible failure might attach, resulting in the discredit of so formidable a competitor in court favour. We need not repeat the oft-told tale of the ceiling of the Sistine Chapel. The brilliancy of its success, and the celerity of its execution, preserved its great author from the further attacks of malice or incompetency; and for the last two years of the life of Julius he enjoyed the friendship and favour of that pontiff undisturbed.

Chapter 13 of Mr. Harford's work is devoted to a critical and particular description of the painting of the ceiling; and for a view of the ceiling itself we refer our readers to the large chromo-lithograph prepared under Mr. Harford's superintendence.\*

The time wasted to Michelangelo and to the world in the fruitless preliminaries for completing the church of St. Lorenzo, at Florence, and other commissions of small importance, occupying the whole of the pontificate of Leo X. forms a dark stain in that pontiff's history. His death took place in 1521, the year after that of Raffaele.

Adrian VI. reigned but eighteen months, and was succeeded by Clement VII. Michelangelo returned to Rome, bent upon completing the tomb of Julius upon the reduced scale arranged with his executors by that pontiff. On the other hand, Clement was equally bent upon his completing the statues for the sacristy of San Lorenzo, commenced under Leo, and again the great work of the artist was postponed *sine die*.

We must leave the events of this reign to the pen of the historian, and follow Michelangelo in his final visit to Rome in 1533. The story of the tomb of Julius II. was terminated by its erection under Paul III. in the church of San Pietro, in Vinculis, reduced to three statues only, by the hand of Michelangelo. The painting of the Last Judgment, commenced in 1533 and completed 1541, and the subsequent decorations of the Pauline Chapel, must terminate our sketch

\* Published by Colnaghi.



of his history as sculptor and painter: there is but to notice the remaining branch of his career in art,—that of architecture.

Amongst his works, we must confine ourselves to the part he played in the erection of St. Peter's as it is,—that church which, in the words of Professor Cockerell, "was commenced by Bramante in 1506, elaborated till 1514 by that master, and successively carried on to 1520 by the immortal Raffaele, and his coadjutors Giuliano San Gallo and Fra Giocondo; then by Peruzzi and Antonio San Gallo together till 1534; by Antonio San Gallo alone till 1546; by Michelangelo till 1564, Pirro Ligorio assisting during the last seven years; then by Vignola till 1573; Jacomo della Porta with Fontana then carried on the work to 1590, when the cupola was completed by relays of workmen night and day; then by Fontana and Maderno till 1613; and finally by Bernini till 1680; comprising 177 years in the accomplishment of the new structure."

Thus do we see the relative duration of each successive architect's connection with the building, but the part each played in its erection forms a remarkable example of the mutability of human intentions. For the study of the ancient Basilica of St. Peter, whose time-honoured site the present building encloses, the Templum Vaticanum of Fontana should be consulted; and for the arrangements and injunctions for the general Basilica of Constantine as handed down to us by Eusebius and other early writers, the pages of Canina should be studied.

The subject of that symbolism which formed so leading a feature in their sacred structures, and to which architectural beauty and symmetry were subordinated, is learnedly discussed in Professor Cockerell's "Explanations."

Although Nicholas V. had consulted Rosellini and Alberti upon the subject of the new building, it was Bramante who first planned the vast edifice under Julius II.

In Plate I. of Mr. Harford's "Illustrations" are shown to the same scale the plan of the old Basilica, those of Bramante, Peruzzi, and San Gallo, and that of the church as it is. The death of Julius in 1513 was succeeded by that of Bramante in the following year; and we are indebted to Serlio for the publication of the plan and elevation of the dome as we possess them. In the beauty of his plan all agree, and foremost amongst its appreciators was Michelangelo. "Aucun plan," says De Quincy, "ne présente une plus parfaite unité, une plus belle harmonie dans ses lignes, un meilleur accord entre toutes ses parties et n'eût donné l'idée d'un plus vaste intérieur. Le Saint-Pierre d'aujourd'hui paraît moins grand qu'il ne l'est en effet. Le Saint-Pierre de Bramante aurait certainement été plus grand encore en apparence qu'en réalité."

To the conception of the dome of Arnolfo, realised by that of Brunelleschi, we owe the conception of the dome of Bramante, realised by that of Michelangelo. The knowledge of the instability of his fabric was saved to Bramante, by his death in 1514. The chief occupation of the next six years was the strengthening the piers under Raffaele and Giuliano San Gallo, the design remaining unaltered. The death of Raffaele, in 1520, transferred the direction to Peruzzi and Antonio San Gallo. Peruzzi adhered to the conception of Bramante, of the dome raised upon four vast piers, but his wish was to make the cupola the grand feature of the design, and not a mere appendage to it: he, therefore, abandoned the nave, and converted the Latin into the Greek cross, thus changing the basilica, or elongated form, into the cubical or concentrated form, of vertical tendency, having its type in the Mosque of St. Sophia, or Baptistery at Pisa, &c. Peruzzi's beautiful plan (pl. 1), was approved by Michelangelo and San Gallo, and the eloquent testimony of both Canina and Cockerell to the superlative merits of the Greek cross over the Latin, in the case in question, may save us the necessity of descending upon it. As in the case of Bramante, the only portion of Peruzzi's design preserved is the plan as given us by Serlio. The death of Peruzzi left the building in the hands of San Gallo alone, who, by the instruction of the Pope, prepared a model of his own conception of its ultimate execution, 28 feet long by 16 feet

broad, publicly exhibited in 1544. In this project the Greek cross is preserved; but, amongst minor changes in detail, the great piers are much increased in bulk, and an atrium appended to the principal front, for reasons not quite conclusive.

The exterior was cut up into numberless parts, showing that San Gallo had never dreamt of breadth: a triple order of Doric on a podium, a lofty attic above, and above that an Ionic order formed the main building. The dome was surrounded by two orders of arches and columns, and surmounted by four tiers of decoration, in columns, attic, candelabra, and depressed spire, and the belfry towers were in fourteen orders or stages, also surmounted by depressed spires. To this design, so broken up, M. Angelo opposed one as remarkable for simplicity. He proposed externally one vast Corinthian order corresponding in size with that of Bramante internally, and the tambour of the dome he surmounted with sixteen pairs of coupled columns, each pair being crowned by a statue.

"As seen," says Cockerell, "in plate 4, the arrangement of Michelangelo's design commends itself to the understanding as the conclusion of a master mind. We admire the decastyle portico, with the tetrastyle in advance, in harmony with the tall expression of the edifice, as a feature of the utmost magnificence, the non-execution of which, by a lamentable perversity, we must ever lament, and for which the actual execution in bas-relief is but a miserable substitute." Antonio San Gallo died in 1546. The building had now been forty years in hand, four popes and six architects had died in that period, when Paul III. conferred the direction upon the unwilling Michelangelo, then in his seventy-third year. His plan (plate 5) is a model of simplicity and unity. The piers of Bramante being indicated on the plan, the vast increase in size of those of Michelangelo is shown by the comparison, and the consequent change in the form of the great arches, the impost necessarily remaining the same. The Pantheon had been the model for the dome with Michelangelo's predecessors; the interior hemispherical, the exterior segmental, the base surrounded by a peristyle and attic. Highly imbued with the merit of Brunelleschi's dome, he made it the type for his own, whilst greatly improving upon it. Instead of an octagon, he adopted a circle, and approached the centers for his external cove nearer to each other, thus forming a curvature less acute; to this the peristyle surmounted by an attic formed the abutment; and the addition of a lofty tambour raised the whole structure above the roof, and completed a perfection of outline hardly likely to be surpassed. The forty-eight dormers gave scale and richness to the dome; and the lantern, though light, is no less than 86 feet high. Such was the St. Peter's of Michelangelo as he would have had it. In plate 4 of Mr. Harford's work we see it in all its sublimity. The beautiful section (plate 6) shows at once the superlative merits of Peruzzi's Greek cross and Michelangelo's wondrous dome.

Such was Michelangelo's connection with this gigantic undertaking. The alterations in his project subsequent to his death in 1564, form no part of our criticism; their value may be seen in the comparative views from the same point in plate 7. "Originality," says Cockerell, "was the character and aim of M. Angelo in all his productions. He showed little sympathy with his predecessors or his contemporaries; manifesting neither servile reverence for the classical models, nor entire fellowship with the architects of the Revival. The sublime, the majestic, the terrible, predominate in his designs in all the three arts of which he was so great a master; and though his taste may be sometimes questionable, his productions can never fail to inspire the architect with exalted notions, far removed from the commonplace of customary invention."

We have thus roughly alluded to the most important doings of Michelangelo: for the remainder of his many works in architecture, painting, and sculpture, we refer the reader to the work of Mr. Harford, whose industry and scholarship have been equally taxed in this labour of love, which is well entitled to an honourable place in its branch of literature.

The subject of his poetry forms a study distinct from our province, but is handled by Mr. Harford with considerable taste.

The volume of "Illustrations" contains (besides the beautiful plates of the ancient and modern Basilicas of St. Peter, with their able and learned descriptions from the pen of Professor Cockerell) the bas-relief of the Centaurs and Lapithæ, the cartoon of the Battle of Pisa, and certain groups from the ceiling of theistine Chapel, and the Last Judgment.

#### THE ART-TREASURES PALACE, MANCHESTER.

"THE works connected with the Art-Treasures Palace, at Old Trafford, have not proceeded so rapidly as was at first promised: there have been two or three accidents, one of which has caused some slight delay; and those who know no more than can be learned from gazing at the erection from outside the boarding, have conjured up for themselves visions of disappointment. But when was such a building as the Art-Treasures Palace completed strictly within the limited time? And was such a one ever erected without more and more serious accidents than those upon which the executive committee and Messrs. C. D. Young and Co. the contractors, have to look back? We are assured that the building will be completely closed in within ten days from the present time: for several weeks the picture galleries have been so far closed, that experiments in decoration have been carried on; and we believe that the executive committee entertain no doubt whatever of being enabled to perform their promise to throw open the exhibition early in May."

Such is the opening passage of a long description of the exhibition building, contained in the *Manchester Guardian* of February 5, being, as is stated in the article, the first account of the progress of the building which has appeared in that paper since the beginning of November. How comes it that the Manchester public has for three months been without information on the progress of this great work, through the medium of the leading local journal? One would have thought that the progress of this specimen of constructive art would have formed one of the most popular topics for the newspaper readers of Manchester. Surely this cannot arise from a want of interest on the part of the Manchester public in the undertaking? For the information of our readers we avail ourselves of some of the particulars alluded to.

The great hall is about 700 feet long, 104 feet wide, and 85 feet high; and consists of a centre and two side aisles, respectively 56 feet and 24 feet wide, the boundaries being formed by the inner walls of the picture galleries, which lie upon each side. The aisles are marked out by lines of coupled iron pillars, octagonal for about 4 feet from their bases; the cylindrical portion being divided into stages by rings. The pillars, as coupled, are a few inches apart, and they stand ahead of the line of their range. Each coupled column is surmounted by a neat capital, and the capitals support open girders. The semi-circular roof principals, 15 inches deep, are only 12 feet apart, for they rest alternately upon the columns, and upon an ornamental bracket supported by the girder. The columns are 83 feet high, the remaining 32 feet of height being represented by the girder and the rise of the principals; and the semi-circular roof thus formed spans the central aisle only. The side aisles are 36 feet 6 inches high, covered with ridge roofs, rising 3 feet 6 inches above the pillars.

The westerly end of the great hall is crossed by a transept. It does not extend beyond the line of the building; but it is carried to the side walls (the picture galleries being thus terminated), and it is 104 feet wide, corresponding with the three aisles of the hall. At the intersections of the central aisle there are groups of six pillars; and from these, open roof principals, 21 inches deep, are thrown across diagonally. At the transept ends, the semicircle of the roof is filled in with a handsome open-work window of iron.

Commencing 72 feet on the easterly (or façade) side of the transept, is a gallery covering each side aisle, and therefore 24 feet deep; and from these points the gallery continues round the transept, and also round the westerly end of the hall, for a length of 72 feet. The front is filled in with open iron-work, in panels between standards; and there is a substantial mahogany hand-rail. There will be four very substantial wood staircases. The height from the gallery floor to the roof (which is, of course, that of the side aisles) is 15 feet. The gallery will, no doubt, be found very useful at all times during the exhibition; but it will have particular value during the opening or any other special ceremony; for from it a great number of spectators will be enabled to have a good view of all that passes at any point near the intersection of the hall and transept; and that,



upon all such occasions as we have indicated, will be the point of attraction.

The exterior of the palace is almost entirely of iron,—wrought standards and corrugated sheets. Internally, the iron is lined with 3-inch pine; and to the wood is affixed, first a covering of canvass, and then one of prepared paper, which serve alike to make the roofs, &c. water-tight, and to prepare the interior for decoration.

The widths of glass are as follow:—Great hall, central aisle, glass 24 feet; each side aisle, 10 feet; the picture galleries, each 24 feet. The galleries will be lighted wholly from the top, through the glass named. The great hall, near the transept, will have additional light from the glazed transept ends; but at the points not thus affected there is a supply of light from the roofs.

The semicircular side roofs terminate with the transept; but the space covered by them is sufficient to form, in the whole, six galleries, each 120 feet long and 48 feet wide. There are three of these galleries upon each side of the great hall.

On the westerly side of the transept, upon each side of the great hall, is a room, 72 feet by 48 feet, covered with a ridge roof, but in all other respects agreeing with the picture galleries before described, and intended for the same purpose. Running along the back of the palace, there is a room or gallery 24 feet wide and 200 feet long, which it is at present contemplated to devote to the collection of water-colour drawings. The entrances to this place are under the gallery which runs round the transept. Adjoining, and in the rear of the water-colour gallery, there is another apartment, 24 feet wide, but only 120 feet long; the precise use for which has not, we believe, been decided as yet.

The facade will extend more than 450 feet, which must be thus divided:—Frontage of palace, 200 feet; corridor, from railway station and platform, 150 feet; some offices and stores (on the side next the Botanical Gardens), 100 feet. As to the front of the palace, it will be sufficient to say that all the iron-work and much of the wood-work for the arches are up, as regards the great hall and the picture gallery to the south or railway side; and that all the material for the north arch is upon the ground. This is an alteration from the original intention, consequent upon the failure of the north arch (in brick) after its completion; but, as far as appearance goes, the original design will be closely carried out. A good deal of the work for the exterior gallery, running across the openings of the three arches, has been completed; and it and other points are being pressed on vigorously. All the brickwork for the corridor is up, and so are the roof-principals: the railway offices are rising rapidly; and the groundwork (including the flooring, beams, &c.) is quite completed at this point. There will be a slight rise in the corridor, for a portion of its length adjoining the station. For the offices and stores (ale, porter, &c.) on the northern side, the walls are more than half up.

The railway station is to be 800 feet long. The platform is to be 15 feet wide; and it is advanced so far as to be quite ready for the flooring. The double line of rails, for the special use of the exhibition trains, has been laid down; the junction for trains arriving being a little beyond the Old Trafford Station; and there is abundant standing room for empty trains; being provided to the west of or beyond the palace.

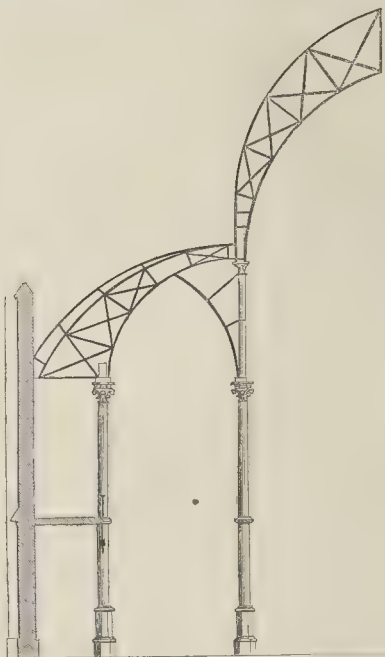
The first-class refreshment-rooms are to form three sides of a quadrangle around the building which was formerly the pavilion of the cricket club, and is now used as the general offices for the employes of the contractors: These rooms will thus stand directly opposite the northern transept. The second-class refreshment department will be in the rear of the railway corridor, and apart from the palace: here the brickwork is slightly advanced.

A drain, 25 in. by 17 in. and 11 feet deep, is being laid around the building. It will serve for the general drainage of the ground, as well as for the reception of the rain-water from the roofs, which, passing down the pillars (all of them being hollow) and into pipes which serve to tie all the underground iron-work compactly together, will pass into the drain at the north and south angles of the facade.

The exterior of the building has been painted; and all the iron-work in the interior has had three coats of the same, as "priming."

The arrangements connected with the valuable objects of interest which are to be assembled are said to be proceeding satisfactorily, and the arrivals of articles are now numerous. The shell of the building, let us add, is now completed.

ARCHITECTURE AT THE ROYAL ACADEMY. The architectural lectures of the season will be given by Mr. Sydney Smirke, A.R.A. on Monday, February the 23rd, and March the 2nd, and Mr. G. G. Scott, A.R.A. on March the 16th.



Constructive Section: Church of St. Eugène, Paris.

#### THE CHURCH OF ST. EUGÈNE, PARIS.

At the end of the year 1855 a church was opened in Paris, which had excited a lively interest in the public mind, from the mode of construction adopted, and the new effect which was the result of it.

This church, situated in the Faubourg Poissonnière, near the Conservatoire de Musique, is the church of St. Eugène, the architect whereof was M. Boileau, a gentleman who has long made the composition of sacred edifices his study, combining art with economy of cost.

The Church of St. Eugène, which is not a perfect realization of M. Boileau's system, has, nevertheless, appeared of a description sufficiently novel to excite public discussion, in which architects and engineers of eminence have taken part. It is in the Pointed style of the thirteenth and fourteenth centuries, and the architect claims to have made use of the modern resources afforded by the science and industry of our own age. The external walls are composed of heavy masonry, with fillings-in of rubble. The internal columns, ribs, and galleries, are of cast iron, as are the fittings to the windows and the circular openings. The ribs or groins of the arch are in wrought iron, with fillings-in of masonry in two thicknesses, forming a cavity for air, to preserve an equality in the temperature—iron ribs replacing the ordinary woodwork of the roof. The hollow cast-iron columns are 32 centimetres mean diameter. The superficies of the building is 1,350 square metres, being 50 long, by a width of 27, taken at the projection of the buttresses, and 25 high. In the interior the length of the nave is 40 metres; the width, as shown on the section, of the centre nave, 10 metres from centre to centre: the side aisles 5 metres, measured in the same manner. The height to the crown of vault in the centre nave is 23 metres, and in the side-aisles, 15 metres,—a height more considerable than is found in the majority of the French cathedrals.

A good effect is produced by the slowness of the columns, which enables the eye to embrace at one time all parts of the structure and its decoration, from whatever point of view it may be looked at. This also enables the words of the preacher to be perfectly heard in

all parts of the edifice. The arrangement of the vaulting, too, is thought to be favourable for sound. The light is let in by fifty-four openings, filled in with painted glass.

The structure itself cost £1,600; the finishings, glass, and decorations increasing the cost to £26,000; the building alone being at the rate of 16*l.* per square metre; the church, complete, 19*l.* The churches which have been built in Paris since the beginning of the century have cost, it is stated, more than 80*l.* the square metre.

The use of iron ribs, which have scarcely any thrust, for the arches, admits of increased height, supersedes altogether the necessity for flying buttresses, and the timber for the roofs, as well as the need for massive buttresses and thick walls; and it is this which brings about an economy that becomes the more perceivable in proportion as we increase the height of the vaultings.

Polychromy is used in the decoration of the interior. With the space obtained by the addition of galleries, the church is able to accommodate 3,000 persons. The library of the Conservatoire des Arts et Métiers, it will be observed, has afforded the architect a type.

#### COMPETITIONS.

*Synagogue at Manchester.*—In answer to advertisements for designs for a new synagogue for the Hebrew congregation of Manchester, a number of designs were forwarded to the committee from London, Liverpool, and Manchester; and the committee selected those produced by Mr. Bird, architect, of Manchester, whose design is to be carried out forthwith. The site chosen by the congregation is in the township of Cheetham, purchased from the Earl of Derby, immediately opposite the Cheetham Townhall, a building erected three years ago from designs by the same architect.

*Lichfield.*—We are again asked in more than one letter not to allow our twice-repeated question as to the settlement of the "Lichfield Library" competition to be forgotten. The drawings were sent in at the end of September, and not a word of information has been returned to the candidates. Is there no one at Lichfield who can state what is being done? We have written to the committee on the subject without effect.





THE CHURCH OF ST. EUGÈNE, PARIS. — MONS. BOILEAU, ARCHITECT.







are not taking the serious step of "striking" on a reason of this nature, which would equally apply to the arrangements necessary to secure to the working classes the boon of the Saturday half-holiday, or any similar measure.

The Saturday half holiday has been applied for by the workpeople, and at this time a circular is being sent round with the names of the Bishop and leading mercantile firms of Manchester, desiring the masters in the building trades to carry out the plan. The principal reason why it is difficult to accede to the request consists in the disposition of trades unions to compel the operatives to adhere to antiquated rules and regulations, which are quite incompatible with the increase in the light both of intelligence and gas. Before the introduction of gas-light such unsatisfactory rules as "working from light until dark," a very undesirable period, might be tolerated; but now they are quite behind the age of progress, and are causes of discomfort and annoyance to master and operative. Let the subjects in dispute be settled by arbitration, by discussion, by conference, by drawing lots, by the force of public opinion, by any means whatever, rather than that expensive and deplorable course, a strike or turn-out.

A LOOKER-ON.

There are one or two highly suggestive points in this letter, especially the one about "light to dark" working in winter. This has been a constant source of misunderstanding, and we should rejoice if a remedy could be devised.

#### WORK FOR THE UNEMPLOYED.

THE breaking of stones for the public roads is doubtless, in its way, a useful enough work, but it is one that not only is unfitted for the skilled artisan, but unfits him for the proper manipulation of work more befitting his skilled and educated hand and eye. There is this to be said in favour of stone-breaking, however, for the unemployed, that in presenting it to him who seeks for "leave to toil" at it, the authorities thereby admit his right to earn his livelihood by labour, on behalf of the public as his paymaster, at intervals when private enterprise fails to provide him the means of doing so; and the only excuse imaginable for restricting the public works so offered to the unemployed industry of the artisan to so low a description of public requirement as the breaking of stones, appears to be that such work is supposed to be level with the capacities of *all* the able-bodied poor, and a good test, even from its general repulsiveness, and its liability to injure both the hands and the eyes, of the actual need of the applicant for it. But why should not a willingness to labour for his daily bread, under the moral stigma of the "workhouse," be a sufficient test in itself, without any further degradation or any personal injury to the poor man who applies for it? There are many forms of public works besides stone-breaking eligible to tests without its objectionable features. Such would be paving for macadam, drainage for bricklayers and navvies, and so on; and why should not the public authorities in towns be obliged, by law, as Queen Elizabeth intended by her institution of workhouses, to "set the poor to work" during just such a lull in the state of their respective trades as the present in the building trades of the metropolis. The demand which the unemployed as a mass are now making, that the authorities should "set them to work," is an honour to men who might have thrust their hands into their pockets and demanded of these authorities, under the circumstances, to fill their mouths for them with the bread of involuntary idleness. This is a vast question, we are quite aware, and leads to immense social as well as national consequences; but let us well consider the common sense and reason of the thing, and being satisfied of that, let us go ahead, in spite of imaginary fears of future and far-off consequences. So long as there is a stigma attachable to workhouse work, there is little fear of resolving all labour into workhouse employment and social communities. These few remarks occur to us, while, pen in hand, and about to note the circumstance that a writer in the *Sun* newspaper suggests this as a fitting time to push on the power of the Metropolitan Board of Works and local boards and vestries, by the 7th section of their Act, to carry out various sanitary works connected with house drainage for the owners, by borrowing the money and paying for the work as an improvement rate, or otherwise; employing the unemployed thereon, and so benefiting the whole community while providing for thousands of poor families at present without the means of subsistence. The suggestion is, in many respects, a good one, and we hope to hear more of it.

#### BALL FOR THE BUILDERS' BENEVOLENT INSTITUTION.

THE annual ball in aid of the funds of this very useful and growing Institution took place at Willis's Rooms, St. James's, on Thursday, the 19th inst. and passed off in a manner that must have been satisfactory to all concerned. The company was numerous (nearly 600 persons were there), and there is reason to believe it will prove as profitable to the Institution as many of its predecessors. Mr. Alderman Wm.

Lawrence, Mr. Jacob Bell, and a number of gentlemen connected with the building trade, were present, and the general feeling was gratification at the result.

The Institution is indebted, on this as on previous occasions, to the exertions of Mr. Joseph Bird as honorary secretary.

#### THE ARCHITECTURAL EXHIBITION.

THE series of lectures in the Suffolk-street Galleries closed on Tuesday evening, the 17th, with some observations by Mr. James Edmeston, jun. one of the honorary secretaries, on the Articles exhibited in the Department of Materials. An apology was previously read from the lecturer of the preceding week, for some most improper personalities in which he had indulged. We have received a considerable number of indignant letters on the subject from the officers, members of the committee, and others connected with the Exhibition, but will content ourselves on the present occasion with urging on the committee the absolute necessity of preventing the recurrence of such proceedings. If they do not, this excellent feature of their Institution, calculated to effect much good, is inevitably doomed. No man would think of attending a lecture-room with the possibility hanging over his head, that for some perhaps imaginary slight he would hear himself or his friends vilified. As the most obvious amongst the precautions, a chairman should be always appointed to whom appeal could be made. We have reason to believe that the committee fully concur in these views.

#### THE SANITARY STATE OF SHOREDITCH.

ANOTHER of those useful quarterly reports which we have before noticed has been made to the Shoreditch Vestry by their medical officer of health, Dr. Barnes, and printed for circulation.

Dr. Barnes expresses his satisfaction that for the future he will have the Registrar's weekly mortality returns from which to obtain some current light as to the causes and localities of death, and the use he already makes of these is the edition of certain conclusions in reference to the Thames and its sewage, to which we shall advert in his own words.

"It is held with great pertinacity in some quarters," says the reporter, "that the great preventive remedy of fever is the diversion of sewage from the Thames. That the dwellings immediately exposed to the exhalations from the mud-banks, left at every ebb, are especially unwholesome, is indeed amply proved. But we have seen from the preceding statistical analyses, that the deaths from fever in the East division, including Shoreditch, which was high and far removed from the river, were considerably more than in the south, which is within its immediate influence. It is, therefore, in strictly local conditions that we must seek for the disease-producing causes. Disease must be pursued in its abiding-places: it can only be expelled by the vigorous application of sanitary remedies at the very spot where it takes its rise. . . . Almost the whole of that matter which renders the river turbid is earthy detritus—clay and silt, washed down from its banks and water-shed; or raised from its bed and suspended in the mass of flowing waters in fine particles. This inorganic matter attracts and entangles the sewage-staleness as the mingling with the stream. It thus exerts a powerful disinfecting and decomposing action on the organic matter. . . . I think it has not been proved by distinct evidence that this unconverted organic matter exists in a form which is capable of producing disease, so long, that is, as it is not deposited on the banks. The conditions under which the sewage at present flows into the river are the most favourable for rapid conversion and disinfection, flowing constantly by thousands of natural out-falls and sewers into the Thames, along many miles of its course, the sewage is so sub-divided that speedy and perfect admixture with the stream is ensured. Very different are the conditions for the reception of the sewage by the Thames, in the plan adopted by the Metropolitan Board of Works, and very different would be the results. Concentrated in enormous masses, and discharged intermittently by two points of out-fall only, the entire sewage of London would not instantly mix with, and be diluted by the whole volume of the river, as has been unaccountably assumed. Like the Gulf-stream which flows across the Atlantic, like the Plata which carries its stream of fresh water unmingled many miles into the ocean; like the confluence of the Rhine and the Main, whose streams, one coloured red, the other green, run on side by side, two rivers in one bed; so would the great Sewage-stream hold its course, a concentration of pollution, undiluted by the waters of the Thames."

This special difference we ourselves pointed out at a time when it was argued in the daily press that the inhabitants of Erith had no real cause of complaint in reference to the new sewage scheme inasmuch as the whole quantity of sewage had all along passed by this very district, all the difference being that by the new scheme it was to issue into the Thames at a certain point above Erith. This, indeed, made all the difference; but it was a difference widely distinct from the present state of matters. Mr. Barnes refers to a matter often urged in our columns, the necessity of providing means of escape for the products of gas-consumption.

"The purest gas which it is possible to manufacture, must always be injurious to health if burnt in rooms where there is not a free escape for the products of combustion, or a free circulation of the diluted steam. It is possible, as we have seen, to supply gas free from carbonic acid,

but it is not possible, notwithstanding the pretensions of patent stove-makers, to burn it without creating that poison in volumes exactly proportioned to the extent of the combustion. Besides carbonic acid, during the burning of gas, a great and injurious quantity of sulphuric acid is also evolved. Many striking examples of the destruction of books, furniture, and goods from this cause, are given in Dr. Letheby's report. It cannot be enforced too emphatically, that it is quite as irrational and dangerous to burn gas in a close inhabited room without providing a vent for the vitiated air, and means for the supply of fresh air, as it would be to burn a coal-fire in a room without a chimney. There are invisible vapours far more poisonous than smoke."

As regards the "patent stove-makers," a serious case in point appears from the following paragraph to have recently occurred at Brompton:—"Two Men suffocated through Joyce's Patent Fuel."—An inquest was held on Tuesday, at Brompton, on the bodies of Thomas Barton and Alfred Rose, two farm labourers, employed by Mr. E. Dodd, of Gillingham, who died last night from the effects of inhaling the fumes of carbonic acid gas, emanating from an article known as 'Joyce's Patent Fuel.' The deceased men slept in the farm-house, and the weather on Sunday night being severely cold, Woolley, the bailiff, placed one of Joyce's portable stoves in the room in which the deceased were to sleep, some hours before they went to bed, for the purpose of heating the apartment. There was no pipe to carry off the poisonous fumes. Mr. Weekes, surgeon, was promptly in attendance, but all attempts to restore animation were of no avail, the deceased having been dead several hours. Mr. Weekes stated that the cause of death resulted from inhaling carbonic acid gas, given off by the patent fuel."

We cannot advert to such stoves as these without stating, that, scarcely believing it possible that they could be recommended for use without special warning as to the absolute necessity of "a pipe to carry off the poisonous fumes," we personally called at one or other of the several stove-makers in Newgate-street, and there, to our astonishment, we found that it was but too true, that not the slightest warning or even simple intimation of the necessity of such a pipe was given by the attendant employed to sell the article: on the contrary, we were confidently assured that the stove was a "self-consuming" one; and when we responded—"So much the worse, inasmuch as the fuel, if thoroughly consumed, is only all the more thoroughly converted into the deadly poison carbonic acid gas," what do our readers think was the fencing rejoinder?—"Oh but this is patent fuel,—purified fuel,—twice purified!"

#### RAILWAY MATTERS.

OUT of twenty-eight arches, of which the viaduct near Coventry, alluded to on a recent occasion, consisted, only five remained standing after the accident, and even these appeared to be ready to share the same fate of total destruction. The foundations are said to have given way. The river was turned from its bed and swamped adjoining property. The viaduct, says the *Coventry Herald*, was about a quarter of a mile in length, and consisted of twenty-eight arches, each 40 feet span, and 15 feet rise. The piers in the valleys, which averaged about 15 feet, were built of a stone obtained from a quarry near the residence of Mr. C. Bray. The first stone of the structure was laid in August, 1843, and the last stone was laid in its bed on June 29, 1849; so that little more than ten months elapsed in completing it. It was erected under the superintendence of Mr. Warriener, the engineer to the company; Messrs. Shaw and Hayton being contractors, and Messrs. Nowell, Robson, and Ainsworth, sub-contractors.

The Llandilo and Llandilo Railway is now opened for public traffic. Mr. J. Samuel, the engineer, states that the cost of the line, including land, works, stations, permanent way, sidings, law, engineering, and parliamentary expenses, the electric telegraph, and every item from its commencement to its opening for traffic, has not exceeded 6,800*l.* per mile. The line is seven miles in length, embraces 180,000 cubic yards of excavations, two over and four under road bridges, two parish road bridges, nine river bridges, one of which, over the river Towy, is of 160 feet clear span, and all the bridges are either of wrought iron, cast iron, or masonry. The line is laid with rails of 70 lbs. to the yard. The Vale of Towy line to connect Llandilo with Llandovery, and form the first link in the main line from Manchester to Milford, is now in an advanced state, and will, it is said, be completed for less than 5,600*l.* per mile.

The traffic returns of the railways in the United Kingdom for the week ending January 24, amounted to 392,668*l.* and for the corresponding period of last year to 365,886*l.* showing an increase of 27,882*l.* The gross receipts of the eight railways having their termini in the metropolis amounted to 183,796*l.* and last year to 156,854*l.* showing an increase of 6,942*l.* The increase on the Eastern Counties amounted to 1,563*l.*; on the Great Northern to



1,1107; on the Great Western to 1,5477; on the London and North-Western to 2,5937; on the London, Brighton, and South Coast to 6237; and on the South-Eastern to 361; total, 7,4777; and from this must be deducted 617 decrease on the London and Blackwall, and 47M on the London and South-Western. The receipts on the other lines in the United Kingdom amounted to 228,8727, and for the corresponding period of 1856 to 206,5327—showing an increase of 20,3407.

The following table exhibits the growth of the American railroad system:—

Years.	Miles.
1828 .....	8
1838 .....	1,543
1848 .....	5,682
1857 .....	24,476

Miles built 1st five years, 1828-32 .....	131
" 2nd " 1833-37 .....	1,281
" 3rd " 1838-42 .....	2,105
" 4th " 1843-47 .....	1,159
" 5th " 1848-52 .....	6,295
" 6th " 1853-57 .....	12,513

#### ILLUMINATED CLOCKS.

THESE clocks, which are now becoming more general, and are found to be most useful, have hitherto had this great disadvantage, *v.z.* that the dials are not sufficiently distinct during the daylight. This inconvenience may now be obviated. Sir Benjamin Hall has recently had an experiment made on the face of the clock on the north side of the lodge at Hyde-park-corner, in front of Rotten-row. This dial was made of the glass generally in use for such purposes. The figures were gilt, and by no means distinct; and the hands were also gilt. The figures and hands are now painted a dark colour, and the face is made of glass which is as white as a sheet of paper, and perfectly transparent. The clock has been lighted for three or four nights, and the time is indicated most distinctly. The experiment is thought so successful that the other face of the clock opposite Grosvenor-place is now undergoing alteration; and it is to be hoped that the owners of other clocks may be induced to adopt the improvement. It is understood that the dial of the great clock of the new Palace of Westminster is to be made of a similar description of glass, so as to be quite clear both by day and night.

#### LIABILITY OF SURVEYORS.

##### BIRCH v. JURY.

THIS was an action brought (and tried on the 16th instant) by the Liverpool and London Insurance Company, against Mr. Jury, of Dowgate-hill, surveyor, for neglect of duty when employed by the said company to report upon and value property at Mistle and Mannintree, Essex, belonging to Mr. Howard, for the purposes of a loan. The damages were laid at 8,5007.

It appeared that Mr. Jury was asked in the beginning of 1851, by Mr. Hubbard, of Bucklersbury, solicitor, to obtain a loan of 8,0007, on two granaries, two warehouses, workshop, and wharf at Mistle; also, five houses and six cottages at Mannintree (the adjoining parish), belonging to Mr. Howard, a fish-factor carrying on a very large business there, who himself occupied the granaries, warehouses, wharf, &c. at Mistle.

For this purpose Mr. Jury visited Mistle and Mannintree, and made a valuation. On his return he applied to the Liverpool and London Insurance Company to advance the money,—he being the company's agent for settling fire claims, but not their surveyor; which was agreed to at 41 per cent. provided his valuation was satisfactory. Mr. Jury then again visited Mistle, and on his return made a formal report and valuation amounting to 8,0007 sale value, and recommending a loan of 7,5007, which he laid before the secretary of the company, at the same time telling him that he was employed by Mr. Howard, that he could not act independently for both parties, and that an independent surveyor had better be employed by the company to value the property. The directors, however, signified they were satisfied to take Mr. Jury's valuation, provided he looked to Mr. Howard for payment, and agreed to lend 7,5007 on the property, if Mr. Howard would pay 5 per cent. interest, and insure his life for 4,0007. These terms were accepted by Mr. Howard, the money lent, and the insurance kept up for three years.

It was clearly shown that Mr. Jury never received a shilling from either party, not even his expenses: he told Mr. Hubbard his charge would be 207.

Soon afterwards, in consequence of the large trade carried on by Mr. Howard with London, he was induced, by the Great Northern Railway Company, on receipt of 5,0007, to remove his business from Mistle to Grimsby, where he afterwards failed.

The result of Mr. Howard's removal was to throw all the said property at Mistle out of occupation; this, with the opening of the railway to Harwich, which railway passes through Mistle, combined with the depressed state of all mercantile and warehouse property during the last three years, contributed to depress the value of the property in question, and on its being put up for sale in 1856, no biddings were obtained.

After some negotiation with Mr. Jury to take the property at his valuation, and 8007 arrears of interest, which he refused to do for this reason,—that he was not employed or paid by the company, nor had he been paid by either party; that the property was fully worth the amount he valued it at in 1851, and that he could not have foreseen the changes that had taken place,—this action was brought.

Mr. Cook, Mr. Penn, Mr. Thompson, the surveyor to the company, and Mr. Clarke (Farebrother and Co.), surveyors, were called on behalf of the company, who respectively put the present value at 2,7007, 3,4007, 3,5507, and 5,2007,—this being Mr. Clarke's valuation.

On the part of Mr. Jury, Mr. Charles Lee and Mr. Snook, surveyors, were called. They valued the property as it was in 1851,—which they maintained was the proper time to value it, as the property had since been much depreciated as before described,—at 8,1007, and 8,5807.

Lord Campbell, in charging the jury, held that the defendant was the agent of the company, although not paid, because he volunteered the valuation, and the company were induced to rely on it, and he so made himself liable. This he left first for the jury to decide; and if they decided it against the defendant, they then were to say what damages he (the defendant) would have to pay.

The jury retired, and after an absence of two hours returned a verdict for the plaintiff, with damages—one shilling!!

This case and ruling of the judge raises a serious question of responsibility, as it has always, heretofore, been considered necessary to pay for a valuation before making the party responsible for any error of judgment, or loss, arising from depreciation in the value of property.

The position of architects and surveyors is becoming anything but satisfactory.

#### SCHOOLS OF ART.

*The Penzance School.*—At a recent meeting a report from the School of Art Committee was read. A circular had been received from the Department of Science and Art, asking the opinion of the committee as to the circulation of books from the art library to local schools. The committee expressed their approval of the plan, with certain modifications applicable to distant schools. The Department having offered to lend—on easy terms and for a short period—two sets of photographs taken in the Paris Universal Exhibition, the committee resolved that the loan be accepted; also, that the Chancellor of the Exchequer be memorialised to purchase the Soulagues collection. The committee reported the invariably good attendance of the classes, but recommended continued efforts to augment these classes. The report was adopted.

*The Birmingham School.*—The annual meeting of this school took place on the 3rd inst. in the rooms, at New-street. Lord Ward presided, and addressed the meeting at great length. In more especial allusion to the state of the school, his lordship observed that he had looked round the room, and although the works were very carefully and beautifully finished, yet he thought it was not such an exhibition as should be found in the town of Birmingham. They must have a higher standard for their works, or the good to be derived from them would be very inconsiderable. In reading the report of last year he found that there had been a difficulty with regard to a modeller. Now, a modeller in the Birmingham School of Design was of the first necessity. He did not think it was sufficient to send a young man already under probation, who, to say the least of it, finished his own studies at the cost of those whom he ought to instruct. If a modeller had not yet been found worthy of being sent to a school of that sort, no peace should be given Mr. Cole, who had undertaken the management of these institutions, until that want was supplied. Mr. Wallis, the head master, afterwards spoke. He said that he had conducted the school for five years, and had never taken any part in the proceedings of the annual meetings. But he felt it his duty, in consequence of what had been said, to make a few brief remarks. The impression conveyed to his mind by the speeches was that there was a feeling that the people of Birmingham did not take sufficient interest in the school. Moving among the people as he did, he should be very sorry for his lordship to go away with that feeling. He believed sincerely that there was a very strong feeling existing in the town in

favour of the school, and it would manifest itself distinctly if the committee were to undertake a canvass to increase the number of subscribers. He could not but feel that the school had effected much good. Last year he was assured by the jewellers of the town on all sides, that reproach was scarcely applicable to their articles as it previously had been, and he noticed Classic forms and pure designs which, upon inquiry, he found had resulted from students who had worked in the school. He felt certain that if some effort were made, the body of subscribers would be very largely increased in the course of two or three months. In the Birmingham School, we may here add, there are under instruction and superintendence at present the following number of students:—

In the school, New-street .....	631
Parochial and other schools under the inspection of Mr. Wallis .....	678
	1,309

At the close of the exhibition of the students' works, on Friday in last week, Mr. Wallis delivered his usual lecture illustrative of the course of instruction pursued in the institution. The object of the address was to give those persons who might be desirous to enter the classes useful information as to the various stages of study, and thus to combat that impatience of results which so frequently manifests itself in the earlier attempts in drawing.

*The York School.*—The head master of this school, Mr. J. C. Swallow, delivered a lecture on Tuesday, the 10th inst., to an audience of 250 working men, on the importance of mechanical drawing. A working man was in the chair at this lecture. It was the introductory lecture to a class the master had formed, the first lesson of which he gave on the Thursday to a class of eighteen working men—engineers, foremen of works, and joiners—several of whom belonged to his free class, so that a practical result is following the free class: many more were expected to attend the next lesson.

#### ELECTRO-TELEGRAPHIC PROGRESS.

THE walls of the New York Exchange were lately adorned with an interesting map, prepared by Capt. Berryman, showing the profile of the bottom of the Atlantic on the route over which it is designed to lay the cable. We append the figures, showing the depth in fathoms, beginning at St. John's:—96, 150, 98, 120, 370, 460, 752, 1,060, 1,590, 1,827, 1,627, 1,600, 1,500, 1,564, 1,600, 1,650, 1,630, 2,070, 2,000, 1,830, 1,920, 1,812, 1,650, 1,590, 1,545, 1,750, 1,905, 1,513, 410, 255, 410, 715, 114.

The English and Irish Magnetic Telegraph Company have declared their dividend at Liverpool for the past half-year at the rate of 6 per cent. per annum, free of income-tax.

From the last half-yearly report of the directors of the Electric and International Telegraph Company, it appears that 7,0007 and upwards have been expended in extension of the company's lines of telegraph on various railways; and that the net earnings applicable for dividend give a per centage on the larger capital expended, at the rate of 7 per cent. per annum, against a per centage of 6 per cent. per annum (free of income-tax) for the previous half-year.

For the electric telegraph in Australia, according to the *Australian Gazette*, six tenders were sent in. The total cost by Mr. H. Butcher's tender, the successful one, will be 10,0157; the cost of the line from George Town to Launceston (40 miles), being 627. 10s. per mile; from Launceston to Hobart Town (120 miles) 527. per mile; Hobart Town to Mount Lewis (20 miles), 577. per mile. Apparatus, 7357. That of Messrs. Falconer and Fleming involved a cost of 12,5557, including apparatus. A tender was put in for Messrs. Henderson and Co. for 12,8477. Mr. Joshua Higgs tendered for the line from George Town to Launceston alone, at an estimate of 1487. per mile.

#### CASE UNDER BUILDING ACT.

##### DISTRICT SURVEYORS' FEES.

DR. JOHN FORBES WINSLOW, of Sussex House, Fulham, was summoned, on the 17th inst., before Mr. Ingham, at the instance of Mr. Aldred Mosely, the district surveyor, for refusing to pay the sum of 127. for building fees.

Dr. Forbes Winslow did not appear, but was represented by Mr. Martin, who pleaded not indebted; Mr. Clark attended for Mr. Mosely.

One of the items in dispute, a fee of 57. for alterations and additions to a building, was the principal subject of discussion. Considerable improvements have recently been made upon Dr. Winslow's premises, amongst which were some alterations and additions to a building used as a dwelling-house, having connection with the old Sussex House, and the surveyor held that he was entitled to charge for those alterations, as a fee, one-half of the fee charged for the whole area of the premises.

The words of the Act were "one-half the fee that would be charged in case of it being a new building."

Mr. Ingham contended that the construction upon the Act, and was of opinion that it meant one-half of the fee charged upon the area of the additions, and not the whole area of the old buildings. For instance, supposing the



## Miscellaneous.

Queen wished to build a pigstye adjoining Buckingham Palace, would the district surveyor be right in charging for his fee one-half of the fee that would be charged for the whole area of Buckingham Palace?

Mr. Mosely said that would be the case, and he produced a document from the Board of Works which went to that effect.

Mr. Clark said in the case of alterations the surveyor would be obliged to take the whole area to obtain an idea of his fee, and the words of the Act were, "alterations and additions." There was no difference made between the two words, and, moreover, there was a limit to the fee: the sum of 10*l.* was the highest fee that could be charged, therefore his client could not have charged more than the 10*l.*

Mr. Ingham said he agreed with Mr. Clark as to the fee charged for alterations, but for additions he could not agree.

Mr. Clark then said he could prove that in this case the works done were alterations.

Mr. Mosely was called, and proved that an entrance was made in the old walls for a communication with the new; and many other alterations were made.

Mr. Mansell, the builder, was called by Mr. Martin, to show that no alterations had been made; but he ultimately admitted that a window in the old premises had been taken down and made into a door.

Mr. Ingham held that was an alteration, and he must allow the fee.

There were some objections to the other fees, but an order was made for their payment.

## "THE REGULAR LINE OF BUILDINGS."

METROPOLITAN BOARD OF WORKS.

THE "Regular line of Buildings" question is getting precisely into the position we foretold long ago, namely, that the determination of the Board in such cases is altogether disregarded. A builder applies for leave to erect a building in a certain position, sometimes, by the way, when no consent is necessary, but the Surveyor of the local Board has forced him to apply. The Metropolitan Board refuse assent—sometimes with reason, sometimes without: the builder, nevertheless, proceeds. The local Board, who are the parties to enforce the decisions of the Metropolitan Board, think the decision wrong, and refuse to interfere. The building is therefore allowed to remain, and the law is brought into contempt, a number of persons having previously been much annoyed.

At a meeting of the Board on the 9th inst. the superintending architect brought up a report on correspondence with certain members of the vestry of Shore-ditch, relative to the general line of fronts in Kingsland-road, which he stated as follows:—It appeared from this correspondence that, in June last, the vestry of Shore-ditch refused their consent to Mr. Batey to erect a scaffolding and boarding, for the purpose of building a soda-water manufactory, which they considered would be a projection beyond the regular line of buildings in the street. Upon which Mr. Batey endeavoured to compel them, by a writ of mandamus in the Court of Queen's Bench, to grant permission of the same. The case was heard, and the rule discharged. Since then it appears that certain members of the vestry had taken a different view of the case, and had now granted to Mr. Batey permission to go on with his building; upon which Mr. Walker, one of the vestry, had addressed several letters to him, inquiring whether the Metropolitan Board had granted any permission for the extension of the said building, complaining of the course which the vestry had taken in the matter, as setting aside the authority of the Metropolitan Board. These were the main points of the correspondence, and it only remained for the Board to determine whether they thought fit to take any steps in the matter.

The Board refused to take any steps in the matter.

On the 12th instant, in the case of Broadwood's manufactory, of which we gave particulars, p. 52,

Mr. Leslie moved that "the resolution of the Board of the 19th December last (No. 21), refusing the application of Messrs. Edwards, for the consent of the Board to the erection of Messrs. Broadwood and Sons' workshop, in Horseferry-road, Westminster, 4 feet in advance of the regular line of buildings, be rescinded."

Mr. Ware seconded the motion, and urged that it could be no possible detriment to the public.

After a long discussion, the chairman put the question, when there appeared—

For rescinding .....	20
Against it .....	16
Majority .....	—4

The chairman ruled that the numbers, according to the Act of Parliament, must be two-thirds of the Board to rescind the order, and he declared the motion not to be carried.

Nevertheless, Messrs. Broadwood will doubtless erect their building in the position desired by them, as he local Board could scarcely venture to cause it "to be demolished" (the remedy given them) in the face of the opinion of Sir Fitzroy Kelly, and the above vote on the part of the Metropolitan Board.

SOMERSETSHIRE ARCHÆOLOGICAL SOCIETY.—The fourth conversation of this society was held on Thursday evening before last, at the Museum, Taunton, under the presidency of Mr. W. E. Surtees. Among the objects deposited were various illustrations of the excavations of Pompeii, with examples of frescoes, pottery, ashes, &c. by Mr. Surtees; oil paintings and drawings after Turner, by Mr. W. F. Elliot; &c. The president read a paper on Pompeii, after which Mr. Elliot followed with one on "Turner and his Works."

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.—A general meeting of this society was held on Wednesday night, the 18th, in the Gallery of British Artists, Suffolk-street, the Very Rev. the Dean of Westminster, one of the vice-presidents, in the chair. A large assemblage of ladies and gentlemen testified to the growing interest which is felt in this subject. The papers read during the evening were—"Middlesex at the Time of the Domesday Survey," by E. Griffiths, Esq. F.R.S.; "Walks in the City—No. 1, Bishopsgate Ward," by the Rev. Thomas Hugo, M.A.; and "Monumental Brasses of London and Middlesex, Part 2," by the Rev. Charles Bontly, M.A.

SOUTH AUSTRALIAN SOCIETY OF ARTS.—A meeting of persons interested in the formation of a society for the promotion of the fine arts, according to the *Adelaide Observer* of the 18th October last, was held on the previous Monday evening at the Adelaide School of Arts, when it was resolved unanimously,—"That a society, to be called the South Australian Society of Arts, be now formed." The annual payment of one guinea is to entitle the subscriber to all the benefits of membership, consisting in free admission to all lectures, meetings, and exhibitions of the society; and a donation of painting, sculpture, or other such grant of not less value than 10*l.* sterling, or of 10*l.* in money, entitles the donor to all the advantages of membership for life; the society reserving the right to decline any unsuitable object.

METROPOLITAN COMMUNICATIONS AND THAMES BRIDGES.—The article under this head in "The Companion to the Almanac," to which we referred in our notice of "The Companion," has been reprinted for wider circulation, with the name of the author, Mr. Edward Hall, F.S.A. architect. It is a very able paper, and should have the attention of the authorities in the case of Westminster-bridge.

MEETING OF WORKING MEN.—A meeting of working men was held on Friday evening, 13th inst. at the Temperance-hall, Clerkenwell, Mr. Neale Porter in the chair, when several resolutions were agreed to, having reference to the present distressed condition of the working men of the metropolis. The first resolution called the attention of Government to the "severe, wide-spread, and alarming distress existing in the metropolis and its suburbs, the result of a long stagnation in the building and other trades." The other resolutions spoke of the "acute and almost intolerable privations" now endured by working men, their wives and children, and stated that the only hope of the men who could not find employment was emigration to Australia, New Zealand, and Canada; and they therefore prayed the Government to grant them a free passage to the colonies. Petitions to both Houses of Parliament, based upon the resolutions, were agreed to. Ad. should be given.

OXFORD ARCHITECTURAL SOCIETY.—The first meeting for this Term was held on Wednesday, February 4, the Rev. Dr. Bloxam, president, in the chair. Mr. Freeman described a journey from Havre to the Pyrenees, and back again by way of Bolognese. He commented especially on the wide difference between the architecture, most conspicuously the Romanesque architecture, of Southern and of Northern France. Southern France, in fact, in every historical aspect, is a totally distinct country; without grasping historical differences of this sort, it is impossible fully to appreciate architectural ones. Mr. Freeman pointed out what he thought some errors of Mr. Ferguson's in this respect, arising from inattention to mediæval history; and contested both parts of the favourite Parisian dogma, that France was always in advance of the rest of Europe and Paris always in advance of the rest of France. Personal inspection had in no way diminished his old admiration for St. Ouen's as the nearest approach to perfection that the art had ever made, and he had only marvelled the more at the ineffectives of Mr. Ruskin in depreciation of it.

URGENT WANT OF LABOUR IN AUSTRALIA.—The Geelong correspondent of the *Australian and New Zealand Gazette* writes as follows:—"All that is needed to develop the advantages we possess is summed up in one word—labour; which is now so scarce that the progress of many important works is interfered with, and in some cases even stopped from the want of it. The supply of emigrants of late has been far too limited. When a ship-load arrives, the crowded depot is emptied in two or three days, and certain classes—single females, for instance, accustomed to town or farm services, agricultural labourers, married couples with small families—have tempting offers made to them of wages not dreamed of in the 'old country,' and may secure comfortable wages within one day of their being open to engagement. The current wages of mason- and carpenters are 15*s.* per day, and of common labourers 10*s.* to 12*s.* per day."

THE BURNING AND RE-BUILDING OF WALLASEY CHURCH, LIVERPOOL.—Wallasey Church having been destroyed by fire on the 1st inst. a public meeting was held at the Egremont Hotel, Liverpool, on Monday in last week, for the purpose of initiating a movement for the raising of funds to rebuild the edifice. The Bishop of Chester occupied the chair, and in opening the proceedings, expressed the gratification he felt at seeing so large an assemblage. His lordship then dwelt on the solid satisfaction that the church was partially insured for 1,700*l.* and 300*l.* upon the organ. Messrs. Hay, architects, of Liverpool, had been requested to submit slight plans and estimates of the probable cost of a restoration, and they had named 5,000*l.* as the probable amount for an erection adjoining the present tower, capable of accommodating from 700 to 800. Appropriate resolutions were passed by the meeting, and subscriptions, amounting to 100*l.* landed in, besides 100*l.* presented by the bishop. There are considerable difficulties, it appears, connected with a satisfactory restoration, from the circumscribed nature of the site; and the architects (Messrs. Hay), have suggested a new site in the adjoining field for a church of the size required for the increasing population, recommending that the tower be substantially repaired, and used as a bier-house and bell-tower for the curfew and funerals, allowing a portion of the adjacent walls on the north and east angles to become natural buttresses.

NELSON'S MONUMENTS AT TRAFALGAR-SQUARE AND YARMOUTH.—In reply to a question put by Mr. Warren, in the House of Commons, Sir Benjamin Hall stated that 4,000*l.* or 5,000*l.* more would be required to finish the Nelson column, but that he did not think it advisable for the House to make any further advances during the present year. As for Nelson's monument at Yarmouth, which is fast going to wreck, we hear that the collection of the small sum requisite to keep it in repair is now despaired of. Poor Nelson! His "glory" seems to be "departed."

BRITISH (OPERATIVE) ENGINEERS' BENEVOLENT ASSOCIATION.—The annual meeting of this society was held at the London Tavern, on Monday in last week. The objects of the institution are to exercise benevolence towards its members, and to cultivate the best feeling with the employers, who, on their parts, have responded to the appeal, and generously contributed to the funds. Among the employers who were present at the meeting or at the dinner which followed, were Messrs. H. Maudsley, R. Ravenhill, W. Hartree, J. Samuda, B. Donkin, T. Donkin, P. and C. Easton, C. Amos, &c. Mr. Sidney Smith, the secretary to the Employers' Association, was also present. The number of bond fide members had increased. The total receipt for the year was 2,145*l.* the liabilities amounted to 508*l.* The total capital invested in funds in the savings bank and cash in hand was 1,769*l.* Various resolutions were carried with acclamation. Upwards of 300 sat down to dinner, the number far exceeding the order given.

NORTH OXFORDSHIRE ARCHÆOLOGICAL SOCIETY.—A general meeting of this society was held at the Vicarage Hall, Banbury, on Monday in last week, when Sir Henry Dryden read a paper on the "Earth-works of the Earlier Inhabitants of this Country;" and the Rev. W. Wilson one on "The Geology of the Neighbourhood of Banbury." Some discussion took place, and on the walls of the hall were drawings illustrative of the papers read on the occasion.

TAUNTON.—A newly-erected dwelling-house in Taunton has recently excited attention there. It is soundly built by Mr. Davis. The style of architecture adopted is an adaptation of the Gothic of Italy to English requirements. An attempt is now being made to improve the art of brickwork, one of the results of which (if successful) will be that the manufacture of bricks will also improve. The chief difficulty in the erection of the house in question has been in obtaining bricks of different colours, so that in this respect all has not been done which might be wished for; but in another respect the house has not been unsuccessful. It is stated that the house exhibits an unusual amount of decoration, in character with the style chosen. Colour has been applied to doorways and arches, and effect has been obtained by the use of deal, varnished, without concealing the natural colours of the wood. The design was furnished by Mr. C. E. Giles, architect, of this town.

BEDFORD WORKING MEN'S INSTITUTION.—A lecture on the "Antiquities of Bedford" was delivered to the members and friends, of the Bedford Working Men's Institution on 6th instant, by Mr. Hurst. The Rev. R. W. Fitzpatrick, the president of the institution, was in the chair; and the attendance was a very good and attentive one, according to the *Bedford Times*, which gives a lengthened report of the lecture.

GAS REGULATION.—Mr. L. Young, of London, gas engineer, has invented a new method of regulating minutely the consumption of gas. The Admiralty are said to have ordered fifty-two of his patent machines for the use of Woolwich dockyard.



This beautiful, unique, economical, and elegant description of flooring, so extensively used in Paris and other continental cities, has now been introduced into this country: an extensive assortment of specimens and patterns commencing at 1s per foot surface, with every particular of its cost and adaptation, can be obtained of Messrs. H. P. BURT and CO. 2, Charlotte-row, M'gon House; or of Messrs. ARROWSMITH and CO. 80, 1, Bond-street.



# The Builder.

VOL. XV.—No. 734.



LOCKS and safes have been treated of in a large book by Mr. Price, now before us.\* The most ancient lock ever seen in modern times was that described by Mr. Bouomi, as having secured the gate of an apartment in one of the Khorabad palaces. Like those still used in the East, this lock was a wooden one, with a key so large, probably, as to require to be carried on the shoulder. Indeed, the carrying of keys on the shoulder is a practice which is still adopted, and has long prevailed, in the East. This practice is thus alluded to in the book of Isaiah: "The key of the house of David will I lay upon his shoulder." Primitive as such a key may very naturally be regarded in these times of lock-picking, lock-controversies, and lock improvements, the ancient and modern lock of Egypt and other parts of the East is by no means a despicable invention; indeed, it is a remarkable circumstance that some of our most celebrated modern locks are but an elaboration of the principle of the Egyptian lock, which is an invention of a superior order altogether in comparison with the warded lock of modern times, so far as real security is concerned. The bolt or bar of this lock when shot is fixed in its position by a set of pins or slides, which require to be lifted by the proper key with corresponding pins, in order to enable the key to shoot back the bolt. Doubtless our skilful modern lock-pickers could manage to pick such a lock, just as they have picked the lock of Braham, which is, in fact, essentially Egyptian in principle; but, for all that, it is a very notable circumstance that one of the most celebrated and approved of modern locks is but a modification of so ancient and primitive an invention. We have frequently pointed attention, however, to the fact that in many very ancient inventions we seem rather to have the effete or worn-out remains of a still more ancient and a still more advanced state of science or art than the mere germ or primitive form of such inventions. So does it seem to be in the present instance. Were we able to trace the progress of such a principle as this of Braham's lock, through such modifications as those of Mordan and Cotterill, onwards to its culminating point of perfection, and beyond that still through an era of deterioration and decay, in the extreme lapse of ages, we should expect to find it at length assume just such a vestigial shape as that of the Egyptian lock,—essentially the principle, but stripped of all elaboration, and of all other trace of high art advancement than that implied essentially in the very existence of the principle, as one in itself involving evidence of some previous state of high art development of which it was but the worn-out vestige. But is it not a circumstance still more notable than that displayed by the ancient wooden locks of Egypt and Assyria, that there is a *Chinese wooden lock*, of very superior character to the Egyptian, and, as Mr. Denison remarks, "exactly similar in principle to the long celebrated Braham lock, inasmuch as it requires a number of independent sliders to be pushed in to different depths before the lock can be opened."

This very interesting and remarkable lock, Mr. Denison says, was shown to him by Mr. Chubb, to whom it had been given by a gentleman who brought it lately from China. He did not know "how many years, or thousands of years, the invention had existed there, but probably," he adds, "long before Braham's time, just as the recent invention here of that very neat and useful instrument, the spiral or corkscrew drill, was found to have been anticipated long ago in India." That this Chinese "Braham" must be an invention of extreme antiquity, the stagnation of art and science for ages in China would seem to indicate; if, as is probable, it existed at all in China previous to Braham's time; and this is but one of scores of instances of a like order, in which the most modern and advanced, and apparently novel and original, inventions have been found to have been anticipated for ages amongst that wonderful people, the Chinese. As for the kindred Egyptian lock, it may here be noted that the figure of such a lock, sculptured among the basso-relievos of the great temple of Karnac, proves it to have been in use in Egypt for above 4,000 years, during which period it does not appear to have undergone any appreciable change. The same sort of wooden pin-lock, we may also remark, has for centuries been in use in the Faré Isles; and it is said that a lock similar in character has been in use from time immemorial in Cornwall, introduced thither, doubtless, from Phœnicia, by the tin traders of ancient times. Another Eastern lock had a key formed like a large sickle, and also worn on the shoulder, as the sickle itself is to this day by reapers in some parts of this country.

The earliest known English locks were the warded ones, and these are still the commonest of locks in this country, although, as respects security, they are of a very low order, and have long been superseded, for more important purposes, by locks of quite another principle. The keys of the old warded locks, however, were often very elaborate and beautiful art-works, as is proved by the fine examples of Early English keys now in the Museum at Brompton. The locks themselves comprise, besides the bolt and key pipe, a series of fixed or stationary obstacles, which are the wards, or wheels, in and about the key-hole, or between the key-hole and the bolt, and round which the key, with its correspondent slits, is turned, while any other instrument was supposed to be prevented by the wards from doing so; but in reality, a bunch of skeleton keys is but too likely to possess some one or more capable of giving the slip to the most cunningly-devised wards, and of turning the bolt as if there were no such obstacles in the way to it; and even failing such a contingency, it has always been open to the lock-picker to take an impression of the wards in wax, or smoke them out of their secret otherwise, and so to make a key that will fit the lock precisely "as if it were made for it." Warded locks, therefore, are much more suitable to keep out the prying eye of mere curiosity than the light fingered hand of the thief who seriously sets about the task of lock-picking. To the class of warded locks belongs the common padlock. There is a species of padlock, however, of a very different description, namely, the puzzle or letter lock, which, though of a far superior order, as regards security, to the warded padlock, is in fact one of the oldest locks in use in Europe. Not only so, but there is a curious affinity, which we have not seen adverted to, between its principle and that of the Braham lock, which, as already noted, is in principle akin to the most ancient of all known locks. The puzzle lock usually consists of rings strung on a barrel enclosing a spindle, with studs corresponding with grooves in the barrel, on which the rings can be set to different letters or figures engraved on them, so as to

produce a word or sum which will be the "open Sesame," by means of which the spindle studs are enabled to slip along the grooves, and so alone to open the padlock. One of these puzzle locks belonging to the first Napoleon remained in this country from 1815 to 1856 unopened, notwithstanding reiterated attempts to do so, but in 1856 it was at length opened by Mr. C. Aubin, who discovered the combination of figures to which it was set.

The puzzle lock has been regarded as involving one of three distinct principles of lock construction; but its analogy to the Braham principle, which admittedly belongs to another of the three alleged principles, tends to resolve the three into only two distinct principles. One of these is the ward; the other (in the words of Mr. Price) "consists in the insertion of such impediments to the retraction of the bolt as are not fixed or stationary like the wheels or wards, but moveable, and of various combinations, and which prevent other instruments than the true key from opening the lock." To this class belong all the locks which have been invented, from the first of Barron's, the patent for which was enrolled in 1778, downwards to the present year. To this class also belong the ancient Egyptian, Assyrian, and Chinese locks already referred to. Barron was the first to improve on this ancient principle, by the introduction of his double-acting tumblers. Most of this latter class are called either tumbler or lever locks. The two principles,—fixed or stationary wards, and moveable wards or tumblers,—are applied in combination as well as separately. To the warded lock the single tumbler was first of all added, this tumbler being merely a lever with a tooth or square pin in it, which drops into a notch in the bolt, so that the bolt cannot be moved until the pin is lifted out of the notch. In this, however, there is but little additional security beyond that of the common warded lock, as any kind of pick or false key that will clear the wards will readily raise the tumbler. The requirement of raising the tumbler to a certain height only, and neither higher nor lower, to let the bolt pass, introduced a new element of security; and this was managed very simply by putting the square pin in the bolt in place of in the tumbler, and by making a gating and two wider holes or chambers in the tumbler (more or less like the letter H as a whole), the gating just the width of the bolt-pin or *stump*, as it is called, and the wider holes intended, the one for the stump when the lock was bolted, and the other for it when the lock was unbolted. Thus, unless the tumbler were lifted exactly to such a height by the key, or its counterfeit, that the gating was exactly opposite to the stump, and neither higher nor lower, the stump could not pass from one of the wide holes or chambers, through the gating, into the other chamber, and thus the lock once bolted would so remain till this was done. But *presently* applied to the bolt by a wire through the key-hole while the tumbler was gradually lifted by another wire or picklock might effect the purpose: nevertheless, the gated tumbler was a decided improvement on the mere drop tumbler. The next advance was Barron's multiplication of the tumblers, since adopted in all lever locks, with any pretensions to security. Several levers or tumblers now required to be raised each to a particular height of its own, so that the gatings of all would coincide, and thus allow the stump to pass from the one chamber to the other. This is the principle of the Chubb lock, although, superadded to this principle, there is the detector, the great and peculiar feature in Chubb's lock, and to which it had mainly owed its celebrity. This detector is merely an additional lever, which lies over the tumblers, and locks fast into the bolt if any of them are lifted too high, and it can only be set free by overlocking the bolt a little with the

\* Treatise on Fire and Theft Proof Depositories, and Locks and Keys. By George Price. London: Simpkin, Marshall, and Co. Fifth Street, No. 11, Oct. 5, 1856.  
Lecture on Locks, by Mr. E. B. Denison, reported in *Dorchester Gazette*, 2nd January, 1857.



true key. Price is of opinion that the detector springs are of positive advantage to the lock-picker.

Security being added to security in course of successive steps of progress, it was till lately imagined that all these many-tumbled locks were impregnable, the difficulty of raising all the tumblers or levers so as precisely to open the gating being regarded as unsurmountable, and the bellies or lower edges of the tumblers giving no clue by means of wax impressions or smoked blank keys to indicate how high each required to be lifted. The idea that pressure could be so applied to the bolt through the key-hole, while the levers were being successively lifted, that the gatings of all could be made to coincide, seems almost never to have occurred to any one in connection with the picking of lever locks till it was announced in the Society of Arts in 1851 that this had actually been done in America; and shortly afterwards Mr. Hobbs came to London as an exhibitor at the Crystal Palace, and began picking the *crack* locks of English makers right and left, till at length his own "Protector" lock was picked by an Englishman, one of Mr. Chubb's workmen, named Goater, who, however, in attempting to pick an English lock of a new construction, invented by Mr. Parnell to meet and obviate the startling disclosures then being made, found it necessary to resort to practices reprobated not only by public opinion, but by judge and jury, to whom the circumstances were referred, and who decided hollow against Mr. Goater and his plea of having fairly picked Mr. Parnell's lock; indeed, it was shown that he had surreptitiously got possession of the lock, and tampered with it, so as to enable him to make a duplicate of its proper key, with which, of course, it was as easy to open the lock as with key No. 1.

These and other important proceedings, under the general name of "the lock controversy," led to great improvements in the construction of locks. But, first of all, Mr. Hobbs succeeded in picking both Bramah's lock and Chubb's, as well as others. And here it may not be amiss more particularly, to explain the construction of Bramah's lock, so far as that is possible without diagrams or drawings. The principle of it, as Mr. Denison lately remarked in his interesting lecture on locks,—

"Consists in a number of slides having to be pushed in to different depths by the key, which has slits of different lengths in it, and is resisted by a spring which pushes up the slides. These slides are set in a cylinder or barrel, which turns with the key, and can only turn when the notches in the slides are all brought into the same plane as a steel plate which surrounds the cylinder and has corresponding notches in it. This lock was pronounced by the inventor absolutely unpickable; but it was, nevertheless, picked within a few years, and, strangely enough, by a method identical with that used by Mr. Hobbs in 1851, when he gained the 800 guineas for picking the challenge-lock which had hung for years in Messrs. Bramah's window in London. It was supposed until then that the addition of what are called false notches had prevented that mode of picking; but Mr. Hobbs showed that to be a mistake."

And, finally, by way of proving whether Messrs. Bramah's present locks are easier or harder to open, Mr. Denison added, that he had lately seen Mr. Hobbs open one of their best and newest large locks in three minutes and a half! Mr. Chubb had also shown him a very neat little instrument which a man can carry in his waistcoat pocket, and by which anybody who gets hold of a Bramah key for half a minute may take an exact copy of it without your even seeing what he is doing.

Nevertheless, there is great scientific beauty as well as symmetry in the principle of Bramah's lock. That of Mr. Cotterill is very analogous, only the slides in this case radiate from the keyhole, as a centre, instead of lifting cylindrically. Mr. Hobbs, we may add, expended several hours in a vain attempt to pick one of Cotterill's locks. In allusion to this last and other locks, Mr. Denison says,—

"Cotterill's lock is a modern one substantially on the principle of Bramah's, only with the sliders pushed out radially by the key acting as a wedge. The consequence is that, whether that lock is secure

or not, the enormous thickness required for the key in order to get a moderate range for the sliders will be a fatal obstacle to its coming into general use. The action of pushing in the wedge-shaped key against the friction of the sliders is also unpleasant. It is remarkable that though the insecurity of the Bramah lock, without false notches, was known and published so long ago, it never occurred to anybody in England that Chubb's and all the other many-tumbled locks could be opened in the same way, and they were never made with false notches in the tumblers and stump until after Mr. Hobbs's exposure of them in 1851. N.Y., when it was stated some years before at the Institution of Civil Engineers that the Chubb lock was not regarded safe in America, and could be picked easily by this tentative method, as it is called, nobody would believe it. All the best tumbler locks are now made with false notches, and there is no doubt that they do add very considerably to the difficulty of picking by any but first-rate hands."

The tentative method of picking, alluded to by Mr. Denison, and which has lately acquired such celebrity, though actually published in the "Encyclopedia Britannica," nearly thirty years ago, consists merely in applying some pressure to the barrel of a Bramah lock or the bolt of a Chubb or other tumbler lock, which would make it open if the sliders or tumblers were all free; and then the sliders or tumblers are moved gently, one by one, never moving any except those against which some pressure is felt, and at last they are all got into the position in which the notches or gatings will allow the barrel or the bolt to move, and the lock then opens itself. *False notches* are notches shorter than the real ones, made in the sliders and the plate which surrounds them, and so when a slider is pushed down as far as a false notch, it allows the barrel to move a little, but no more; and for many years it was supposed to be impossible to feel whether a slider was to be a false notch or a true one. But Mr. Hobbs showed that that made no real difference; for whenever the lock cannot open it must be because there is a pressure upon some one or more of the sliders, and that pressure can be felt by gently moving or *ticking* them, and so one knows if it is in a false notch, and has only to work on till he gets it into a true one.

Some recent locks are very complicated; such as the paratopic lock of Messrs. Day and Newell, of New York: with this twenty-guinea changeable-keyed-lock Mr. Hobbs's name has been associated. Messrs. Day and Newell's lock, however, was also picked, and by a mere wooden key, and Mr. Hobbs had to add a kind of wiper to its revolving curtain, in order to frustrate the mode adopted of picking it, with what result we do not know.

The year 1851 was a grand turning point in lock construction. So much so, indeed, was this the case, that all locks invented previous to that year have been regarded as old locks, and only those since invented as the new order of locks. Of these latter, however, there are not many, besides the improved Chubb, Bramah, Hobbs, and other locks. But though not numerous, as Mr. Price remarks, they are "effective, to the purpose," and decidedly "good locks." In his preface, he remarks that, except in his own work now published, "the improved locks, which were the fruit of the 'lock controversy' produced by the Great Exhibition of 1851, have not been described, with two or three exceptions, although many of them are far superior in security to nearly the whole of the locks known prior to the year 1851." It was, therefore, to be expected that any one of these new locks which had in any way become distinguished, would be found described in Mr. Price's portly and rather diffuse volume of more than 900 pages. One of these very locks (patented in February, 1856) has just been selected by the authorities acting on behalf of the Board of Trade Department of Science and Art, as the most suitable for the new Museum at Brompton, and we naturally turned to Mr. Price's pages, in order to enable us to give our readers some account of a lock selected for such a purpose; but to our disappointment we find there not a word on the subject, although the patent is included in the list of those to which, as a class, Mr. Price refers in the favourable terms just quoted. We have therefore been at some trouble to obtain a few particulars as to this lock, and to study its peculiarities a

little, so as to enable us to give some account of it. The patentee is Mr. Parnell, to whose two previous inventions of a similar kind since 1851 (and which two he has since sold to his former partner, Mr. Puckridge), Mr. Price devotes considerable space, as well as to the notorious case of Goater, to which we have already alluded. The lock selected by the Board of Trade officials, however, is a third and still more recent invention than these, and is named "the universal lock," the patentee having aimed at such simplicity in construction and lowness in price, combined with new and effective modes of security, as would entitle it to be regarded as a lock for general and not for mere special uses. Mr. Parnell is known to have been in the van of those inventors who endeavoured to give that security which the controversy of 1851 so clearly proved to be desirable and necessary to restore the public confidence, which had been so sadly shaken in the use of locks hitherto deemed secure. The two first inventions of this patentee doubtless contributed, so far, to remove the feelings of insecurity and fear which the controversy had engendered; but, with all due acknowledgment to the merits of these inventions, something more was wanting to satisfy the most scrupulous; and the new lock just selected by the Board of Trade does seem to be capable of fulfilling its purposes, so as to obviate all idea of insecurity, at least till some new mode of lock-picking shall be discovered besides that by pressure on the bolt, with which so many wondrous have been accomplished. The invention, in fact, was expressly devised in order to obviate the possibility of its being assailable by pressure on Hobbs's scientific and celebrated principle of lock-picking. The lock appears to be so constructed that pressure obtained against the bolt, without the proper key, entirely stops the action of the levers, an end accomplished by giving the lock or bolt two actions, namely, a forward and a backward one in the simple act of locking or unlocking. This is done by a single revolution of the key as in locking any ordinary lock. The levers are adjusted twice by a simple mechanism ere the lock can be unlocked; and this must be done in the first place before any pressure is applied. The stump of the bolt is original and peculiar, and is propelled into a special or third chamber, formed in the levers, and which the stump enters in locking: this is effected by the back action already mentioned. To make this important feature clear, we may add, that after the bolt of the lock is shot out, and held there by the levers, the bolt, in the further revolution of the key, recedes, and locks down the levers; thus entirely frustrating the *modus operandi* of the scientific and experienced lock-picker, as also does the safeguard of a shield supported upon a high circular ward, upon which it revolves; also revolving in the cap-plate of the lock; which entirely closes the key-hole during the operation of locking or unlocking. This shield being connected, by a stump, or notch, with the lever, must be turned; thus shutting out the lock-picker even from attempting to raise the locked levers.

Mr. Price's book, although its leading title relates to fire and thief proof safes, mainly treats of locks and keys, inasmuch as only the first 170 of its 900 pages relate to safes, with which, as a tradesman, he appears to be personally more interested than with locks.

In the outset the author enters upon a brief history of iron safes and chests, which are of quite a modern date, having had their origin within the present century. "Our forefathers," he observes, "in the simplicity of their arrangements and requirements, were satisfied to place their valuables in an oak chest, secured by one or more locks in front, or in a brick or stone closet, with either a wood door studded with nails, or a plain iron one; in either case secured by a common warded lock, or a lock without any wards at all, or with the usual iron bands with hasps and staples and padlocks." These simple contrivances, however, were effective, for in those days robbers were less adroit than now, and Mr. Price adds that "the oak chest was quite as safe as the iron one now, because the strength of the chest itself would generally resist violence, while a lock of the most simple construction afforded sufficient security, from



the circumstance that at that early period the means of picking such locks were not understood." Descriptions are afterwards given of the various patents taken out for the manufacture of iron safes, and of Mr. Price's improvements upon them, for the nature of which we must refer our readers to the work itself. Among the other topics discussed are the requirements in an iron safe to make it secure against thieves and fire; the construction of those in general use; the two principles on which safes are made fireproof; the preservation of parchment deeds from destruction by steam and damage by water; fireproof closets and strong-rooms; the best places for fireproof safes to occupy; powder-proof locks; and the comparative prices of wrought-iron fire-resisting and thief-proof safes,—on all of which much useful information is given, although some of it doubtless must be taken *cum grano salis*, since one cannot close his eyes to the fact that in this practical treatise, by a practical man, there is not a little of the nature of advertisement involved. Nevertheless, Mr. Price's "little work," as he rather oddly calls this bulky volume, contains a large amount of interesting matter on the subjects regarding which he writes, and the whole is fully illustrated by engravings of locks, keys, and safes.

With one observation of practical application we close our remarks. The majority of the locks used in our ordinary dwelling-houses are of the most trumpery description, being usually out of order within the first six months. A good serviceable lock at a moderate price is much wanted; but, beyond that, there must be a determination on the part of buyers of houses, and occupiers, not to put up with such locks as are now too often used, and which prove a constant annoyance and cause of expense.

#### THE MEMORIAL CHURCH AT CONSTANTINOPLE.

We have already announced that forty-six designs were thrown in by architects, in this one of the lotteries, or *little-goes*, which are offered to aspiring talent. The "prizes"—as they are called in phraseology revived from days of other lotteries—were drawn, as our readers know, by Messrs. W. Burges, G. E. Street, and G. S. Bodley, and it was recommended that an "extra prize" of 35*l.* should be presented to Mr. W. Slater. The other designs have not yet been exhibited.\*—Such grounds of objection as we have to architects' competitions in the aspect in which they are just now being presented to us, belong less to the question of the intended good faith of adjudicators—concerning which we have here no doubt—than to the question whether the sort of decision calculated upon by competitors, can be expected,—whether chance, or showy drawings, or anything rather than design and constructive skill, has not more to do with a selection than actual merits,—and whether, in short, gain which there may be to some competitors—styled, as it happens, *successful or unsuccessful*—includes any of a pecuniary nature. If on the evidence of such cases as the present, it appear that adjudication can be made according to merits, or if any adequate object, such as mutual improvement, is served by the system, architectural competition may be defended; but if it affords, in the majority of cases, none of these advantages, it becomes precisely that which it is often designated, mere gambling, and as such, a vice delusive and injurious to those who are possessed by it.

That the tendency is now towards delusion and unfairness, we tried to show in our recent remarks on what are called "Instructions." The giving anything more than *suggestions*, is for the committee, or adjudicators, to tie their own hands; and after having placed a limit upon freedom of design, is almost invariably the forerunner of some injustice.

The judges in the case of the Memorial Church, possibly have chosen designs, one of which may be the best for the purpose; or they may have rewarded such as were the best of those submitted; but they have certainly re-

warded designs which were inconsistent with their "instructions." These were by no means perspicuously worded. The style to be adopted was "a modification to suit the climate, of the recognized ecclesiastical architecture of Western Europe, known as the 'Pointed' or 'Gothic';" and it was added, "the neglect on the part of any architect of this provision will absolutely exclude from competition;" and further (though after a reference to "the numerous and beautiful instances existing in Southern Europe of this modification of Pointed architecture," as amply justifying "the preference thus given to it"), it is stated,—"*Any approximation to the specific features of Byzantine architecture is prohibited, as being objectionable in many respects;*" and,—"*Still more must the competitors abstain from the imitation of any forms connected with the religious architecture of the Mahometans,*" which, as it is correctly said, is "at Constantinople based upon Byzantine models," and which indeed everywhere, was an offshoot from the same style. Lest these and other stipulations might not be sufficiently clear, it was added,—"*Non-compliance with the above regulations will absolutely exclude from the competition.*"

Now we apprehend that from these words there follows some little inconsistency. The examples of the Italian Gothic exclude, indeed, much of the Greek symbolic sculpture and decoration; but they are Byzantine in some of their chief features—Byzantine from the influence of the Greek art as transplanted through Venice and Ravenna, and Byzantine-Saracenic from the influence which likewise spread from the south. The surprising development of late Greek art, even to the remote borders of Europe, is a subject which deserves the particular attention of every architectural student.

Therefore, the "instructions" of the committee were contradictory,—or at least, we should say, were calculated to *embarrass* the architects who had to prepare designs;—as similar interference with the logical process which is that of all *design*, must inevitably do. The judges in the present case have rejected, perhaps with reason, designs which introduced "forms which too much resemble those of Byzantine or Greek architecture;" but they have awarded their chief premiums to designs which every one at first sight pronounces to be Byzantine. Thus the design to which they have given the second place,—looking at their "instructions," is that which might have been expected to stand first. Compared with the design which is first, and with that by Mr. Slater, it makes limited use of coloured materials externally. The tendency of the "instructions" was obviously to interdict the use of coloured materials in horizontal bands, to the extent to which they are applied by Messrs. Burges and Slater. The horizontal bands are a feature most marked in the Saracenic styles. That they are emphatically a Mahometan feature, will appear to those who inquire into their origin. The rich dresses of the Arabians, and the manufactures of Damascus, were so greatly influential in the forms and colours of architectural detail, that no student can acquire a proper knowledge of the Eastern styles, without taking them into consideration; and Professor Semper, if we remember rightly, traces all such polychromatic architecture as that which prevails both in the mosques of Cairo and the Christian churches of Italy, to the hangings of coloured drapery used by the nomadic races, of which so large a number became Mahometans.

There are particular symbolic forms and sculptural details in Byzantine works which certainly should find no place in a Protestant church,—though we are not sure that some of them have not been adopted in English edifices. But there are other details, equally Byzantine or Mahometan in their origin, which there was no intention to exclude in the present case, and which lend themselves most advantageously to architecture where colour in materials is used. So much, then, for the tendency of an attempt to bind and trammel the expression of design by needless mandatory "instructions."

A considerable excess in external colour, over what we would consider to be satisfactory in England, is rightly enough introduced in a

building at Constantinople. The climate is supposed to favour it: and the adjacent buildings; costume in the crowded streets still retaining much of its former party-coloured appearance; and the whole character of the scene, establish a different key-note of colour to that which we hold might be satisfactory with us at home. That these differences of chromatic scale exist, will be obvious to any one who has noticed the changes produced upon himself in passing from place to place, by the local materials, even in England.

The party-colouring, therefore, which gives the main character to Mr. Burges's design, although it may be in excess, is not so much so as might at first be supposed. In Mr. Slater's design the effect is injured by the execution of the drawing.

The church of St. Andrea at Vercelli, on which the designs placed first and third are regarded as founded, is certainly a very good example of the development of the Italian Trecento architecture,—where some of the essential Byzantine elements of the earlier styles were excluded and is one which well deserved to be studied. What precise use has been made of it, in the absence of the memoirs, to which the judges refer as accompanying the designs, we are not aware of,—but the designs are obviously much varied from the supposed model.\*

Competitors may do themselves real injustice by an attempt to fortify their case by quoting a precedent. It is the misfortune of the present system, that judges being afraid to go wrong, are still sometimes influenced by a named example: designs, therefore, are submitted by architects, on a basis even inconsistent with genuine art, and the proper use of precedent. Something which is of most value is sacrificed, and a lower level is sought as acceptable to the men in authority.

Mr. Burges's design has, indeed, as the most prominent feature in its plan, a *semi-circular* apse, springing directly from the intersection of the transepts, with an ambulatory carried round, suitable for monuments. The open pier arches to this ambulatory from the choir proper, evidently owe more to the study of Beauvais Cathedral than another building. The general plan has nave and aisles, and transepts, and a detached campanile, placed askew with the south front. There is a groined stone-ceiling and timber-framed roof, of low pitch, covered with red tiles. Flying buttresses, it is to be observed, spring mainly from the roof covering, instead of from a base of greater apparent sufficiency. The west front has a rose-window, and three deeply recessed doors. To the latter there is a broad pent-house roof, covered with tiles. The piers and arches on each side of the nave, are coupled; that is to say, the bay between the external buttresses occupies the width of two arched spaces internally, the main ribs of the groining being arranged accordingly. Iron ties are introduced, as in many of the Italian buildings,—with doubtful advantage in point of taste. In the exterior, as we have intimated, colour in bands and patterns, plays an important part in the design.

Mr. Street's design has few, if any, Italian features. It is a cross church, without aisles; but in their place, along the nave, there is a cloister, with which the projection of the buttresses resisting the thrust of a stone groined ceiling (said to be nearly equal in span to that of King's College Chapel, Cambridge), corresponds; and the same cloister continues along the west front. Thus the church is lighted altogether from windows in the upper part. These generally are grouped in three narrow lights, with externally, arches,—coupled so that there is a central shaft—and, further, a bold arch, from buttress to buttress, forming a deep shadow. The depth of the windows allows of the intro-

\* In a note to us Mr. Bodley says, on this matter:—"Will you allow me to state that, as far as I am aware, the only point of resemblance between my design and the church of St. Andrea, at Vercelli, is in both having a square east end. My reason for adopting this especially English feature was the fact that, as a 'memorial' church, the building should bear evidence of its history, and I remarked, in my report, that when in the Middle Ages a church was built at Vercelli under English influence, and therefore under similar circumstances to the proposed church at Constantinople, the square east end was adopted. I do not think there was any other point of resemblance whatever. The church at Vercelli, indeed, is a large cross church, with apsidal chapels, and altogether of a scale and character distinct from the proposed church, and for which the prescribed estimate would have been inadequate."

\* With reference to the design marked, "In Te Dominie S. Mari," given to the list of those especially mentioned (see p. 81 *encl.*), without the architect's name, we are asked to say that it was by Mr. William White.



duction of an external passage-way round the nave. There is a good moulded cornice, with which the weatherings of the buttresses are conjoined by the introduction of an elegant foliated enrichment. At the east end is an octagonal apse, with long windows, the groining internally being partly supported by the shafts of the inner order of tracery. The building has two octagonal turrets, one on each side the intersection of the cross. The design is put forth as for a memorial chapel rather than a church. Parts may be found which resemble continental models; but there is great merit of design in this production. In the internal details, more colour is introduced; and some of the fittings, as might be expected, display much care and taste.

Mr. Bodley's design had made a less marked impression upon us, during the short time we had for examining it at first, than it has since done. Perhaps justice is not done to it in the drawings. It is, as will have been already inferred, Italian Gothic; and the chief study seems to have been given to the interior, which is rightly praised by the judges, who also say that the design is "remarkable for great simplicity of plan." It has a tower at one angle of the building, with a high-pitched roof; and generally has the plan of an ordinary church, with the addition of a long narthex or porch at the west. A waggon-headed vault, of timber, with principal arches of stone, covers the central division,—similar construction being adopted in the aisles, which are without windows. The principal arches are stilted, in the manner more frequent in Sicily than the north. The decorative character is expressed mainly through surface decoration.

Mr. Slater's design has the regular cruciform plan, two western towers, with tiled roofs, is in manner approximating to Early English, and has many of the details of the masonry and ornament of very good character. Its chief external effect is derived from its bands of coloured masonry, and tiling to the roofs and spire cappings, and the boldness of its flying buttresses. The wall buttress, we may observe, in this design, and that first on the list, appears to be studiously made of very slight projection externally. One feature which is attempted in this design, it is singular has not been introduced in any other of the instances before us. We refer to the true stone roof, so appropriate to the climate, and so often found in Eastern buildings. Mr. Slater, however, we rather think, has not applied the principle in the best form. His roof—of low pitch—both in the case of nave and its aisles, is formed of blocks of stone, which in the aisles might exert considerable thrust upon the walls in the bays, where unresisted by buttresses. The better system would, we think, have been to use thin slabs though joggled together in much the same good fashion as the blocks—bedded upon a considerable thickness of pumice-stone, or other material of the lightest description. The vaulting is all waggon headed, the diagonal ribs and others being planted on the surface, and we believe this arrangement—simulating the other where the diagonal of forces is directed to the position of the buttress—and where the latter has a distinctive use in Gothic architecture—was held by the judges to lessen the merit of the design. The design, however, appears to us deserving of study.

Altogether, even with the limited opportunity for examination which has been afforded, we may pronounce the designs as marked by much beauty of effect, although, as must necessarily happen, each one of the competitors may derive something from the observation, of which now he has the chance, of what is done by others. Of the justice of the selection, it would be necessary for us to see the other designs before speaking; but we have already said something of the difficulties which committees make for themselves in addition to those which are inevitable.

The designs were exhibited at a conference at the rooms of the Society for the Propagation of the Gospel in Foreign Parts, on the 13th inst. when Messrs. Proby and Wilks, covered an address, chiefly descriptive of the design, and supplying not many particulars of the competition beyond what we have previously gathered,—as we have noted them here. He began by stating the character of the

problem which had required working out,—namely, to design a building suitable to congregational purposes and public worship, yet suitable for a memorial, and for the reception of monuments. Towards the attainment of the object, the committee had determined upon a competition. A chitinous competition was not new things; and, as he said, had led to the best results,—as in the case of Canterbury Cathedral, when a foreign architect brought over ideas which we new to England. By such fresh elements applied with local materials and details from the hands of the native workmen, new combinations were formed, and steps of progress were the result. In similar manner constantly, features of architecture were transplanted,—by mediæval architects—who as priests had no particular nationality. Lincoln Cathedral, and its points of resemblance to the Burgundian churches, afforded illustration of this sort of influence. The present project would lead to results of the like character. He then referred to the church at Vézich, adopted as a study by two of the successful competitors, and which had been erected, as it was said, by English workmen and English money, or, at all events, for one who had lived in England, where he held as a benefice the priory of St. Andrew, at Chester.

In considering the style for the new church, the professor said it was thought desirable to allow of no features which were Byzantine, or which were derived from the Byzantine, in order that the new edifice might have a distinctive Christian character. The architecture of the churches of Justinian was shut out, edifices of that character being now appropriated as mosques; and other buildings such as those used by the present Greek church, were conceived to be likewise inappropriate. The Lombard style of Northern Italy also was not suitable, as partaking of the Byzantine, as well as from its heaviness of appearance. Thus the field of selection became a narrow one. The character appropriate for the edifice, was also much governed by the materials,—such as were available at Constantinople, including red marbles,—the use of which, having regard to sunlight, would dictate flat surfaces, supplying the place of deeply-cut mouldings, which, indeed, were comparatively speaking, inadmissible. The judges, therefore, had not been surprised at the particular choice made of models.

In the course of his explanatory description, he referred to the feature of the apse and ambulatory, as not general in Italy, though one church, that of Saint Antonio, at Padua, might be named as having an apsidal termination; and with reference to the tower which the architect of the first design had shown wholly as an adjunct,—it was doubtful whether they would be allowed the use of bells in Constantinople. The professor also particularly directed attention to the ambulatory in the design, as suitable for the monuments, and carrying out the intention of a memorial; yet at the same time he spoke somewhat disparagingly of the propriety of the treatment in the second design (in which a considerable portion of blank wall under the windows is provided, with a similar intention), and which was less a church than a monumental chapel. He, however, praised highly the artistic conception exhibited in the drawings.

Expressing the pleasure which it had been to the judges to find that the first and second awards of premiums had fallen to architects who had held similar places in the Lille competition, where Messrs. Clutton and Burgess gained the first premium, and Mr. Street the second, he said the committee in that case had not fairly carried out their intentions, but he hoped that here they should act with greater justice. He also hoped that those who had not gained premiums, would not find their labour valueless, but that their designs might be turned to account in the case of some other church.

This advantage, it is needless that we should remark, is not very likely to accrue. Anything that can be gained is more likely to result from a firm talk of amongst some of the competitors, for lithographing the whole of the sets of drawings, and providing each competitor with a copy of each set. This would effect what was proposed in our pages in the case of the barrack competition, but not then carried out. Why, in that case, should not the thing still be done, or photography be called in to aid. The designs and particulars are, we suppose, lying stowed away somewhere, whilst a new set amongst the competitors on that occasion, we can discover, has been employed in any of the barrack-buildings for requirements of the line, that have been lately erected,—erected, too, as we must infer, with many of the defects of the old condemned system. As we urged on the memorable occasion, by following such a course as we have now advocated, great mutual benefit might be made to accrue from every competition. It should be especially urged in the forthcoming Government competition.\*

\* A correspondent suggests, that in exhibiting the designs, several separate divisions should be made, the Classic and the Gothic should not be mixed up together, but form two separate divisions.

#### MR. SYDNEY SMIRKE'S FIRST LECTURE ON ARCHITECTURE, AT THE ROYAL ACADEMY.\*

By the kind permission of the council, I propose to address you, the students in architecture of the Royal Academy, on the subject of our common profession. On this occasion I occupy, for a while, the place of one who for many years has won your respect and esteem, by his thorough knowledge of our profession, and by the freedom and perspicuity with which he imparted to you that knowledge, and generally by those elevated views of the nature and mission of our art by which he invited ingenuous aspirants to join him in the path of meritorious exertion which he has trodden so successfully himself. I feel, therefore, a deep sense of the difficulties of my position, and of the disadvantage I labour under in following my distinguished friend.

Nor would I have contended against the conviction of my own comparatively limited powers, did I not entertain a belief that on this, the only subject with which I can pretend to any intimate acquaintance, by an honest and disinterested expression of opinion, I might contribute, in some slight degree, to advance the interests, and, may I add, to sustain the character of that profession to which I feel it a great honour to belong. I have, therefore, undertaken to address you on the subject of architecture, and to impart to you my experiences and the result of my reflections on some of the matters to which it is allied.

The task of a lecturer on architecture, some thirty years ago, would have been an extremely light and simple one. When dealing with the history of our art, he would have probably been content to repeat the oft-told tales of the paternity of Greek art, and of her less distinguished offspring, Roman art, and, hastening through the mists of the Middle Ages, passing by, with hurried steps and half-averted looks, the forms of a period in which the types of classic ages appeared to have been well nigh lost, he would have emerged, with rekindled delight, into the daylight of Palladian art, when he seemed to breathe again the atmosphere of returning sense, reason, and taste.

Then, in dealing with the principles of our art, the lecturer would have arrayed before you the five orders; nor would he have failed, like a true disciple of Vitruvius, to point out for your admiration the matronly curls of the Ionic, the virgin delicacy of the Corinthian, and the manly dignity of the Doric; nor have forgotten the time-honoured fable of Kataktes and his horticultural studies.

Such would have been assuredly the sum and substance of his discourse; and if, for the purpose of completing his subject, he had indulged in a passing notice of Mediæval art, it would have been probably to treat it as a transient fashion, as little to be regarded as the evanescent caprices of a modern nodist.

Great, indeed, are the changes that thirty years have effected! Our art has taken her stand upon a far wider base and a loftier platform; and from this more elevated point of view, the horizon of our art has become greatly extended;—with these changes, the chiaroscuro of her wide domain has also changed: objects hitherto lost in obscurity and neglect have been brought to light, revealing beauties hitherto unnoticed, and kindling renewed feelings of admiration, whilst a cold shade has been cast over some of those objects which once took rank among the fairest of architectural forms.

I am quite conscious of the enormously increased difficulties of the task of him who ventures, in these changed and still changing times, to treat of the principles of our art and their practical application. But, with these increased difficulties, the task acquires increased honour and a new dignity; whilst the comparative novelty of the course which lies before us awakens an interest which it would be vain for me to attempt to excite in you whilst pursuing the trite path amidst the old familiar scenes.

But other difficulties beset the path of him who, in these present times, would venture to assume the office of a teacher. We are dazzled by the excess of light that is being thrown upon

\* Read on Monday evening, the 2nd inst.



our art. Expositors of art, issuing from all ranks and professions, are as numerous as our students; and such grandiose terms as "first principles," "fundamental truths," "general laws," and the like, have become almost household words. These attractive terms are caught hold of as the keys to open to our view the mysteries of the art we seek to acquire; to reveal the hidden sources of harmony, and to introduce order, symmetry, and certainty, into the domain of taste.

I am sorry that I cannot promise to feed your yearnings for truth, by announcing any such unerring criterion of taste, any such authentic formula, that shall command the approval of every observer, or satisfy the requisitions of every critic. I shall lay before you principles and systems with a very cautious parsimony. I will tell such truths only as I think I can find vouchers for, and give you such opinions as I feel well assured have their foundation in common sense; but I beg that you will not be disappointed if I do not even attempt to take wing, and plant you, *per saltum*, on the acropolis of art.

The student must be the artificer of his own fortune: the teacher may, according to his ability, arm the student with the appropriate weapons of his profession, point the way, and administer some facilities for advancement; but the art-student must expect progress only in proportion to the toil of his own hands, and the inspiration of his own genius.

The literary student has, doubtless, as wide a field to cultivate, but his labours are wholly mental; whilst the student in our department of practical science has to exercise his hands as sedulously as his head, and to make himself as intimately acquainted with the material as with the moral elements of his art. He must unite that essential constructive knowledge from which the very name of architecture is derived, with a perception of those graces of form and decoration to which architecture owes its place in the circle of academical fine arts. Our profession is peculiarly complex, and comprises obligations essentially different, nay, sometimes apparently discordant.

We have not only to conjure up a thought, and express it on paper; but we have also to make it a reality, and in that task we are liable to be embarrassed by a thousand difficulties—of cost—of construction—of deficient material—of limited and prescribed site: a weight of serious and lasting responsibility lies heavily on us; and we are not seldom sorely tried by those whose tastes we find ourselves called upon at once to submit to and to control.

Such are the difficulties which await you—which beset your path with pitfalls and with thorns. But I offer them to your notice, with no fear that they will dismay or discourage you: to a mind of energy and spirit, difficulties to be overcome tend but to strengthen the resolution and heighten the courage.

You will ever let it be present to your minds that the study of our profession is no light thing, and you will not fail to enter upon that study with a becoming earnestness and a thorough appreciation of the gravity of your vocation. I need, however, scarcely remind you, that the utmost diligence will be of little avail unless that diligence be wisely directed. That a proper direction be given to your studies is indeed absolutely and obviously essential to their future success. There must be no impatience under the restraint of rules: the mind must be disciplined and reconciled to subordination, for he who would command must first learn to obey. Our great master, Reynolds, has said, with his wonted sagacity,—“The impetuosity of youth is disgusted at the slow approaches of a regular siege, and desires, from mere impatience of labour, to take the citadel by storm: they wish to find some shorter path to excellence, and hope to obtain the reward of eminence by other means than those which the indispensable rules of art have prescribed.”

We often hear “rules of art” condemned as leading to academic coldness, and to a tame, lifeless formality. True it is that no mere rules—no prescriptive teaching—can supply the want of that innate perception of grace which is not made but born, which must come uncalled for,

if it comes at all; but let us by no means be led hastily to infer from thence the inutility of such rules. They will not suffice to give life to a school copy any more than they will animate a lay figure; yet sound rules of art serve to inspire the best artist with confidence, and, above all, will curb the erratic tendencies of even genius itself, ever prone to overlook the line which distinguishes the bold from the extravagant, the sublime from the ridiculous, even the right from the wrong. Let no student suppose, in whatever amount of conscious strength he may indulge, that he can with safety trust himself to the trackless wastes of his own imagination, and shut his eyes to the lights that have been set up by long experience, or to the landmarks which the past has left for the guidance of the future. It is a false and vulgar opinion that rules are the fetters of genius. “He who begins by presuming on his own sense,” says Sir Joshua, “has ended his studies as soon as he has commenced them.” Now, the orders of architecture are instances of such rules of art, and have been instituted, not as fetters to embarrass, but rather as helps to strengthen the judgment.

It is no uncommon thing to hear these orders spoken of with disparagement, as tending to inculcate a servile adherence to arbitrary rules, destructive of originality and of inventive talent. I think that this impression is founded on a misapprehension of the nature of these orders; a misapprehension I am ready to admit likely enough to arise from the dogmatical tone in which the proportions of the five orders are often laid down.

The truth is that the artists of ancient Greece, in its best days, endowed with an unmatched perception of beauty, and of the most refined cultivation, were led by their observation and experience to adopt certain general forms and proportions, and students, struck with their beauty, have sought to trace it back to its original sources by an analysis of those forms and proportions—that is, by their exact measurement and delineation,—a very legitimate, natural, and indeed necessary process.

In thus deducing a system of proportions from the practice of the best architects, we are surely acting as reasonably as the student who would deduce rules of poetical composition from the poetry of Milton or of Pope.

It is thus that the orders of architecture have been instituted; but it is an error to regard them as composing an infallible standard of taste from which any deviation must be heresy. With a praiseworthy adherence to truth, the travellers who have measured and delineated these works, in giving us their transcripts of ancient examples, have figured for our information minute fractions—very hairs’ breadths,—and thankful we should be for their laborious exactness; but it would be a gross mistake to represent that to these fractions we are to pay a superstitious reverence: this was far from the practice or intentions of the great authorities themselves.

Vitruvius tells us of the diversity of practice that prevailed even in his own times. In truth, many wide diversities exist even among the best examples.

In the relation of the diameter to the length of the shaft of the Greek Doric order there is a difference of 33 per cent. between the heaviest and lightest examples even in the best times. In the Ionic order a similar, though perhaps not so great, diversity prevails; and every tyro is aware also of the extreme variety in the form and character of the details existing between even pure examples of these two orders. Similar comparisons might easily be multiplied, abundantly sufficient to show that the best masters of Classic times held the reins with a loose hand: indeed, under the easy sway of these five orders, we recognize a regimen so mild as to satisfy any reasonable love of liberty.

The value of these great exemplars has been not unfrequently tested and proved by the fantastic variations which have been sometimes boldly grafted upon them. In these attempts at new or amended orders (some of which may, perhaps, suggest themselves to your recollection), we find little to encourage any wide departure from the parent forms, but, on the contrary, we recognise in them more clearly the convenience

and wisdom of adhering pretty closely to *known standards*, which the eye has learnt to appreciate as acutely as the cultivated ear distinguishes the intervals of scientific harmony. To set at naught the architectural forms which the age of Pericles has bequeathed to us, is about as idle and undiscerning a task as to contemn the rules of counterpoint, or the musical scale which has descended to us from Guido of Arezzo.

If we turn to the other great system of architecture, that which grew up in the Mediæval period, we shall find artists still acknowledging certain general and leading principles; singularly differing, indeed, from those which guided their predecessors, but still rules of art.

It is true that, so far at least as relates to ecclesiastical structures, these rules have been influenced in a material degree by the dogmatic teaching of the Christian Church, which, if it has on the one hand inspired many very striking and sublime conceptions, so on the other hand it has imposed some restraint on the erratic tendencies of Mediæval genius.

I confess that I am unable to assign to the favourite symbolism of the early Church many of those forms and features which were in truth of earlier growth. We recognise in the Romanesque church the familiar forms of the Roman Basilica, and no ambiguous tendency to Roman architectural decoration: yet we cannot fail to see that a symbolism, grafted on pre-existing forms, which sought to appropriate, and to sanctify, the most admired features of Pagan art, did in fact gradually pervade the whole system of Christian architecture, and impressed upon it a character which departed widely from the types of ancient art.

Thus it is that architecture has ever submitted itself to a wholesome control, without opposing any impediments to the exercise of inventive genius. No art has stagnated less than our art: perpetual change has rather been the law of her existence. The student, therefore, as I have already urged, should learn to reconcile himself to the discipline of the schools, and use it as the safest foundation to receive the superstructure of his subsequent education and practice.

An important portion of his preliminary studies should be the acquisition of a comprehensive knowledge of the works of past times. A large and conscientious survey of such works exercises the judgment, forms the taste, and fertilises the mind, of the observer, and promotes the growth of new thoughts and new combinations.

Sir Joshua, with his usual felicity, says—“The student unacquainted with the attempts of former adventurers, is always apt to overrate his own abilities, to mistake the most trifling excursions for discoveries of moment, and every coast new to him for a new-found country,” and “to congratulate himself on his own arrival at regions which they who have steered a better course have long since left behind them.”

It may perhaps be superfluous to urge these considerations on you now, when, I fear it must be admitted, that the leaning of the present day is rather towards an excessive admiration and a somewhat indiscriminating revival of a bygone age. Of course it would be a very serious error to stop short at the acquisition of such knowledge, which should rather be regarded as the means and materials for further development, and the bases of your future operations.

Our art has been often subjected to the reproach that it has not advanced *pari passu* with other branches of human knowledge; and it is useless to deny that æsthetics have not kept pace either with physics or the exact sciences.

We must, however, bear in mind, that there are important heads of human knowledge which are not in their nature susceptible of indefinite extension, and in which it is idle to expect progressive discovery.

There is every reason to believe that the works of nature supply, and will ever supply, an inexhaustible field for the research of human ingenuity. We can hardly contemplate the time when the facts, which lie concealed beneath the surface of created beings and things, will become revealed to all mankind. The Omnipotence that made can alone fully make known the infinite wonders of his own creation. But as it certainly is in morals, so in æsthetics it



may be, that no new important principles remain to be discovered, and that we can look only for new combinations, for the employment of new materials, and for the discovery of new constructive inventions. A hasty retrospect will, I think, confirm this supposition.

Upwards of 2,000 years ago a more refined and delicate taste, and a more thorough mastery of the power of representing beauty, existed, than the world has since been able to acquire; nor was that extraordinary æsthetic development confined to a few rarely-gifted artists, for there is not wanting good ground for believing that it pervaded the general mind of the Greek people.

Again, 1,700 or 1,800 years ago, the grandeur of the Roman empire was well typified by a corresponding grandeur of architecture, which has never since been equalled.

We are compelled to acknowledge that 500 or 600 years ago workmen wrought with a freer spirit, a bolder genius, and a more genuine artistic ardour than distinguishes the workmen of the present day. We find, 1,200 years ago, in the Gregorian chants, musical compositions conceived of a grander character and deeper feeling than the music of the modern school can lay claim to. It seems to be in accordance with these general views, which I have ventured to express in extenuation of the supposed tardy advance attributed to our art, that a great musical composer of the present day has attempted to account for the admitted want of originality in modern musical composition, by expressing his opinion, or at least his suspicion, that all the material changes of which the notes of music are susceptible may have been already rung out. I cannot indeed adopt this theory, even in respect to music, and I am still less disposed to damp the aspirations of young architects by countenancing any such doctrine of exhausted originality.

I believe, indeed, that the fundamental principles of architecture leave but little room for important future discovery; but the combinations which the component materials of art permit—their variation, composition, and decoration—are practically infinite and inexhaustible.

May we not discern some relation between the progress of fine art and the corresponding development of the individual man? Our first pleasures are all sensuous: our earliest efforts are limited to the exercise and gratification of our senses. The eye and the ear are, I believe, as acutely sensitive in early youth as in the after man: it is not until the faculties of the mind are somewhat matured that it begins to discriminate; to survey nature with a more intelligent observation; to take a deeper interest, and to recognise a more pregnant meaning, a more mysterious harmony, in its forms, its sounds, and its colours.

And so it may be that, in the earliest ages of civilization, men mainly cultivated those arts which address themselves to the senses.

It seems, indeed, to be conformable with our ideas of the Divine will, to suppose that we should be instinctively supplied with the power of enjoying the pleasures arising from these simple elements, whilst purely intellectual pleasures, such as are derived from acquired knowledge and matured experience, are left to be gradually attained by the slower process of self-culture.

These inquiries, however, are scarcely fitted for the present occasion, and must not be here pursued; but the fact can hardly be disputed that not in this country only, but elsewhere, and everywhere in our hemisphere,—whatever may be the cause, whatever the remedy—the fine arts, or at least our art, has not kept pace with time; and, I may add (although I hope that there is no inherent connexion between the two phenomena), that those countries in which, in modern times at least, political and commercial improvements have been most remarkably developed, have been perhaps the least fortunate in the cultivation of æsthetic talent.\*

EXHIBITION OF THE SCOTTISH ACADEMY.—This exhibition is now in form after some delay. The *Scotsman* says it will probably not be inferior to any of its predecessors.

\* To be continued.

#### CHURCH-BUILDING NEWS.

**Norwich.**—A new congregational chapel is about to be erected at Norwich. It is understood that the design of Mr. James (a son of the Rev. J. A. James, of Birmingham), has been accepted for the building.

**Bury.**—A painted window has been placed on the north side of the communion-table, in St. Mary's Church, Bury. The subjects of the six principal compartments are Christ's Entombment, Resurrection, and appearance to Mary; and groups representing the three Acts of Mercy—"I was in prison, and ye came unto me;" "Naked, and ye clothed me;" "Sick, and ye visited me." In the tracery of the head of the window are the figures of Moses, Aaron, Samuel, and Joshua; David, Gad, Elijah, and Solomon; surmounted by the monogram of Christ. At the foot is the inscription.

**Aylsham.**—At the parish church, Blickling, on removing the old window at the chancel, it was deemed advisable to erect a new gable for the reception of the present one, and to Mr. John Freeman, of Aylsham, was entrusted the rebuilding of the east end and furnishing the stonework of this window. Messrs. Hardman and Co. of Birmingham, supplied the window, which was sent to the Paris Great Exhibition, and there obtained a silver medal. The style is Decorated, divided by four mullions with a multifoil heading, in which is represented the Resurrection of our Saviour: in each division surrounding are angels, &c. The five lights are divided into two compartments, with St. Andrew and the Evangelists. In the lower the subjects are, "Bearing the Cross," "The Crucifixion," "The Dead Christ;" the two outside divisions having the armorial bearing of the Hobart and Harbord families. Underneath is the inscription.

**Lee (Kent).**—The enlargement of the Baptist chapel, together with new school-room and vestries, have just been completed and opened, the former buildings having been found too limited for so increasing a neighbourhood. Messrs. Piper and Sons were the builders, from the designs, and under the superintendence of Messrs. Bidlake and Lovatt, architects.

**Exeter.**—The Roman Catholic church of St. Nicholas, Exeter, which has been enlarged by the addition of a transept, 54 feet 6 inches, by 17 feet, also of an angular apse, was re-opened on 19th inst. The original building was Italian, and its sash windows have been replaced with Norman two-lights, of Bath stone. The west front, stripped of its stucco, wood cornice, and classic doorway, and having undergone the extinction of three circular "Christopher Wren" windows, now replaced by legitimate Norman apertures, and surmounted by a new gable, exhibits a façade of the real red stone. The flat ceiling, carried on into the transept, is ornamented with polychrome, skillfully done by Mr. Dipstall. The interior is re-seated with stained deal open benches. Mr. Morton, of Exeter, has carried out the work, Mr. Ashworth being the architect.

**Westleigh.**—Mr. Wilmshurst has finished and fixed a memorial window in the church at Westleigh, near Bideford, North Devon. It is a perpendicular window of three lights, and contains the figures of Faith, Hope, and Charity, beneath which are the armorial bearings of the family, and in the tracery emblematic devices. At the base of the window is an inscription, stating that it was erected to the memory of the late Jane Torr (widow), of Eastleigh, by nine surviving children, of herself and the Rev. John Torr who was thirty-two years vicar of Westleigh.

**Burghage.**—A memorial window has lately been erected in the church of Burghage, Wilts, to the memory of Dr. Denison, late bishop of Salisbury. The quatrefoil contains the arms of the see, and a text (Philippians ii. 29), in oblique bands, runs across the two principal lights, commemorative of the bishop's conduct when the cholera raged at Salisbury. There is a subscription on foot, it is said, for the purpose of erecting a painted east window.

**Hereford.**—A Bill for the restoration of Hereford Cathedral has been brought into Parliament. Having fallen into grievous dilapidation

and decay, the late Dean Merewether devoted his energies for many years to procure its restoration and repair. He succeeded in raising contributions, with additions from various sources, amounting to something like 26,000*l.*; and the result was the partial restoration of the edifice. But the funds proved sadly inadequate to the contemplated purpose of a complete restoration. A sum of 15,000*l.* or 20,000*l.* more is absolutely necessary; and the Dean and Chapter have resolved to raise a loan for the requisite purpose, on the security of the Chapter property.

**Birkenhead.**—The congregation for some time past worshipping in the Congregational Chapel, Grange-lane, Birkenhead, are about to erect a more commodious edifice at the junction of the Woodchurch and Oxtou roads. The new church will be built of white Stourton stone, and will be 100 feet long, 45 feet wide, and 60 feet high, and will accommodate 500 adults on the ground-floor, and about 100 in the gallery, provision being made for subsequent enlargement either by galleries or transepts, or both, so that, while retaining the harmony of the design, the building may be increased to twice its present capacity. There will be vestries, and a lecture-room which will seat 250 adults. It is proposed at first to erect only enough of the steeple to provide for the principal entrance at the front of the church. The estimated cost of the edifice, including the first part of the steeple and the land, comprising 1,800 square yards, is about 3,000*l.* Towards this amount about 1,700*l.* have been subscribed. The architect of the new building is Mr. N. Cole, of Birkenhead. It is expected that the foundation-stone will be laid next month.

**Leyland (Preston).**—The Catholic chapel at Leyland has lately had a new sanctuary added to it. The addition comprises a large reredos consisting of three compartments of decorated Gothic work, and a large centre with two small ones, one on each side. Under the arches on each side of the altar it is intended to place large statues of St. Andrew and St. Benedict. The work has been executed by Mr. G. Swarbrick, of Preston.

#### THE LAW UNION INSURANCE OFFICE.

THE Law Union Fire and Life Insurance Company, which numbers, we believe, upwards of 500 members of the legal profession among its shareholders, have taken on lease from the City of London a spot of ground in Chancery-lane, within one door of Fleet-street, a locality better adapted to their peculiar requirements than the present place of business in Pall-mall. We present our readers with a view of the new offices just completed by the company. The front is entirely of stone, and Elizabethan in character, which gives an opportunity for producing attractive effect, aimed at in erections of this description, without vulgarity.

The building, though possessing a frontage of nearly 40 feet to Chancery-lane, is, owing to the narrow and inconvenient shape of the ground, somewhat cramped as to its internal accommodation, and has required study to make the most of so limited a space. The arrangements comprise, on the ground-floor, the public office and secretary's room; on the first-floor, the board-room, 28 feet by 20 feet, and 15 feet high, and ante-room; on the second-floor, securities, committee-room, and waiting-room; on the third-floor, clerks' office and housekeeper's rooms; and in the basement are placed the strong-room, porter's-room, and bed-room—cellars, clerks' lavatories, &c. The architect's estimate, exclusive of fittings and fixtures, was 2,800*l.*; and the cost, we are told, will not exceed that sum. The works have been carried out by Mr. Geo. Myers, under the superintendence of the architect, Mr. J. Wornham Penfold.

**Salopian Society for Improving the Condition of the Industrial Classes.**—This is a new society just established under the Limited Liability Act. Calls of 1*l.* per share only are made at regular intervals of six months, thereby allowing a period of two years and a half for the payment of a 5*l.* share.





THE LAW UNION INSURANCE OFFICES, CHANCERY-LANE.—MR. J. W. PENFOLD, ARCHITECT.



## PROVINCIAL NEWS.

**East Dereham.**—The new corn-barn here has been opened. Old shambles and slaughter-houses have been cleared away, and the space appropriated to the new building is in the most central and open part of the town. Mr. J. B. Goggs, of Swaffham, was the architect; and Mr. Hubbard, of Dereham, the contractor. In May last the building was commenced. It consists of four walls and a flat glass roof, the principal front presenting a colonnade of Corinthian columns, with projecting cornice, and surmounted by pilasters and cornice of the same order. The whole of the columns, pilasters, and archivolts are of Ancaster stone, and the panels of red brick. A peculiar feature in the front is a space forming an entrance lobby, which will be enclosed by a pair of cast-iron gates, and covered by an arch, intended to carry the proposed base and statue of the late Earl of Leicester. This statue is to be of colossal size, in stone, and will be the work of a London sculptor. The whole area of the hall is covered in by a wrought-iron roof in one span, formed with semi-circular ribs and principals. Outside, the roof is covered with Hartley's patent rough plate-glass. A panelled ceiling of obscured glass, of which the ribs are formed by the tie-beams, is placed at the springing of the arched ribs of the roof. In summer, the ceiling will prevent the direct action of the sun's rays into the hall. The internal dimensions are 80 feet by 50 feet, and the height 27 feet from floor line to glass ceiling. The floor is of hard timber. The cost of the building has been about 1,800*l*.

**Waterhampton.**—The plans of Mr. Banks for the new library building have been selected. The directors now require tenders for the building.

**Bradford.**—The foundation-stone of the aqueduct (under Contract F.) was laid on 10th inst. at Draughton, near Addingham. The total length of tunnelling will be 17½ miles. The contractor for the Draughton portion is Mr. Baker, of Wakefield: the sub-contractors are Messrs. Boocock and Benson, of Bradford. The sub-contractors and friends afterwards celebrated the occasion at the Sailor Hotel, Addingham. The first portion of the tunnelling was keyed on the following day.

**West Hartlepool.**—The new market-place has been opened. It is 470 feet long from east to west, and 138 feet 6 inches broad from north to south, and contains an area of about one acre and a half. It has large entrances, and is fitted up with small shops, sheds, &c.

**Shields.**—The pier on the south side of the Tyne is making perceptible progress, and already extends as an arm into the sea. A wharf is nearly finished on the south side of the Narrows, for shipping stone into lighters and small craft.

**Alston.**—A town hall or public building has for some time been a desideratum in this town, and a committee has been formed for the collection of subscriptions. The Commissioners of Greenwich Hospital have granted a piece of ground for a site, at the Vicarage, in the low part of the town. The building will be commenced early in the spring, and will contain savings' bank, public room, mechanics' institute, news room, &c. The subscription list has, within a few days, reached 440*l*. and the estimated cost is about 1,200*l*.

**Edinburgh.**—Captain Fowke, R.E. was here lately, examining into the propriety of acquiring Argyle-square as a site for the Scottish Industrial Museum, on which subject he was to report to the Board of Trade. A new street is about to be constructed from the High-street to the railway terminus at Waverley-bridge. It is to be called by the name of the late Lord Cockburn, in commemoration of the interest which he always felt in the improvement of the city.

**Montrose.**—Plans of the proposed new markets have been received by the treasurer's committee from four architects, two belonging to the town, and two residing elsewhere.

**Guernsey.**—The tenders for another section of the new harbour-works were opened by the committee on Tuesday before last. Report, says a local paper, states that four tenders were sent in, and adds that all the competitors were very close to each other in their estimates. One of the tenders, we hear, requires three years and four months to complete the work.

## CHIMNEY CONSTRUCTION.\*

CHIMNEY construction may appear to many a very humble theme, and if we examine most of the structures erected to pass smoke and foul vapours into the atmosphere, we shall find such structures are as bald as the theme is humble. To be "as hideous as a factory chimney" has passed into a by-word, or proverb of comparison; and most certainly huge piles of brickwork, without break in line or contour—bare, bald, and grimy—cannot be said to present to the eye much to admire. For the most part, factory and other tall chimneys have one form—a vertical base finished with a plain string-course; then a uniform batter, finished at the top by a plain stone string-course, or coping. Some few tall chimneys have heavy, over-hanging cornice finishings, cramped and bound in place. Many of these are, however, lumpy and painful to sight, and dangerous to the structures.

It is not my wish to throw censure broadcast, or to recommend any suggestion now made by reviling existing structures. I rather state opinions widely entertained, namely, that factory and other tall chimneys, as now erected, cannot be considered eminent for beauty. If the question "Who is to blame?" is fully sifted, I expect the great mischief-worker "nobody" designates all the tall chimneys; for I presume it rarely enters into the mind of a cotton lord to employ an architect of known reputation to design a chimney. There are, however, exceptions, and it is to be hoped that which is now exceptional may become the rule. It will be no new thing to add design to a tall chimney. This fact may have weight with some minds. In Italy and throughout the East, towers and minarets have had the best architects of the day for their designers. They have stood for ages monuments of beauty, and have been admired by countless thousands. If "a thing of beauty is a joy for ever," then have such towers and minarets given joy incalculable.

Campaniles, watch-towers, and minarets exist as tall and as slight in sectional area as many of our tall chimneys.

In Italy and throughout the East, a bare or positively ugly chimney-shaft or group of chimneys is rarely to be seen. I do not remember to have seen such, but I saw hundreds which in design and form pleased the eye. A first vision of British chimneys, as contemplated from our railways, must, I fear, have caused many a nightmare to sensitive foreigners. Our house chimneys are for the most part brick abortions, made more frightful by pipes and cowlings of pot, zinc, and iron. To be ugly is an evil; but such chimneys are not only ugly, they are also dangerous.

It has been said, "there is a time for everything."

In Italy during the Middle Ages, there was a time of building tall towers. In 1159 there were about 10,000 tall towers in Pisa,† and a proportionate number had been erected in most of the principal cities of Italy. The towers of Asinelli and Garisenda, at Bologna, show how tall chimney-like they were in appearance. The Asinelli tower remains almost entire, and is 376 feet high. Mr. Gally Knight designates it "a standing monument of pride and absurdity"—an Asinelli folly. The nobles of Italy built these towers first as a means of defence, but subsequently in rivalry, as a symbol of illustrious birth. They were fashionable; and what will man not do to head a prevailing fashion? The trade requirements of modern times necessitate the building of tall chimneys; and Manchester can match the 10,000 tall towers of Pisa, as the manufacturing towns can match the other cities of Italy. I sincerely hope it may become fashionable to strive after grace and ornament. A tall chimney need not be ugly.

## Medieval Chimneys.

The chimney constructions of medieval times are only named for the purpose of directing the attention of the student members to their beauties. Examples are to be found in castles, baronial residences, and in mansions, dating from 1400 downwards. Britton may be consulted relative to brick constructions and chimneys in the second volume of "Architectural Antiquities," page 95: engraved representations are also to be found in other well-known architectural works. Old English mansions may also be inspected, but there are many modern imitations in pot, in terra-cotta, and in cement. Few are worked out as they were worked out in the honest old times.

## Tall Chimney Construction Foundations.

The foundation of any building must be the first constructive care of an architect. The foundation of a tall chimney may require extraordinary precautions. Rock will be excavated and dressed off to a level and even bed. Clay, marl, gravel, sand, or varying mix-

tures of these may tax all the resources of the engineer or architect. An unequal or uneven foundation, part soft and part hard, is most to be dreaded. A compressible foundation is also unsafe—that is, clay, marl, or shale, compressible by weight. Many of the oolitic and tertiary marls are compressible to considerable depths, and ought not to be trusted, however solid they may seem to be. The probability is that most of the leaning towers of Italy are founded on such strata. Some of them may stand as designed—architectural tricks—but most of the leaning towers are no doubt foundation failures.

The modern architect has at his command means and appliances of the greatest utility, which were unknown to men in former times. Steam can be brought to aid in driving timber piles, and simple applications of water or air will sink hollow iron piles with comparative ease. The old Eastern plan of forming deep wells and then filling them up with concrete has been too much neglected. Modern well-sinkers will go down in any strata almost to any depth—certainly to any depth required in practice; and a secure foundation may thus be made for the loftiest structure in the most difficult ground. Masses of concrete or of brick or stone work placed on a compressible substratum, however cramped and bound, may prove unsafe. Solidity from a considerable depth can alone be relied on.

Enlarging the area of a base or foundation by footings can be resorted to; but mere enlargement of area may not in itself be sufficient. A lofty structure which is to stand secure must have solidity sufficient to maintain each part in the position in which it is first placed.

Foundations are too frequently slighted, or labour and material are wrongly applied. The compressibility of oolitic and tertiary clays can only be overcome by piling, deep sinking, heavy ramming, or heavy weighting. The point of bearing must be carried below any possibility of upward reaction. A heavy embankment or heavy pile of building frequently disturbs the surface ground at a distance of many yards, the subsidence causing a corresponding rise around on either side, as the case may be. A tall chimney or tower of like proportions, built on such a foundation, if not made safe to a sufficient depth, would most likely become a "leaning tower," if not actually a falling tower. Probably the depth of a foundation is compressible ground ought not to be less than one-fourth the intended height above ground: that is, for a shaft of 200 feet the foundation should be made secure to a depth of 50 feet. This could easily be done by piling, or by well-sinking and concrete.

## Bricks and Mortar.

The lofty towers of Italy and the minarets of the East are for the most part constructed of bricks and mortar. I have examined the bricks, and I have tested the mortar, and found that neither the one nor the other is better than, if so good as, the modern architect may have at his command. The proportion of brick to mortar in the foreign structures differs, however, most materially from modern practice.

The bricks of Italy and of the East are very thin in proportion to area of bed—9 inches square by inch, or at the most inch and a quarter, in thickness. These bricks, or (as we should almost designate them) tiles, are frequently set or bedded in mortar as thickly spread as the brick, so that there is almost as much mortar as brick. From my examination I have no hesitation in saying that the permanence of the work is in a great measure dependent on this liberal use of hard-setting, tough mortar. The tornado's sweep and the earthquake's shock have alike failed to overthrow these slender and lofty piles; though many times they must have shaken, vibrated, and bent under the furious effects of the contending elements and dread tremblings of the earth. The elasticity and tenacity of the mortar have, in my opinion, alone preserved the structures from sudden overthrow. It is a modern practice to stint the use of mortar. Specifications generally set forth that a bed of mortar shall not exceed one-eighth of an inch. It will be a new clause, but not any less useful one, if at times we specify that a bed of mortar shall not be less in thickness than half or quarter of an inch. In tall chimneys or towers the mortar should be of the best quality: it should be ground by horse or steam power, and should be used liberally.

Those who wish to ascertain the quality and power of mortar have only to visit the Liverpool docks, and inspect the works of Jesse Hartley. They will there find river and dock walls having in their composition almost as much mortar as stone, and the one as enduring as the other, although that stone is the hardest and best granite.

With thin bricks and thick beds of mortar the Italians used iron bolts for bond, and some of the Eastern minarets have poles of timber enclosed vertically in them. Timber cannot, of course, be used in tall chimneys, but hoop-iron for bond is well known to the profession, and its aid is highly desirable

\* The following is the paper by Mr. R. Rawlinson, read at a meeting of the Liverpool Architectural Society, as mentioned in a previous number.

† My authority is Gally Knight. But I think there must be some mistake: 10,000 towers in one town is a large number. Upon investigation, the old anecdote may be equalled. We know, however, there were more than two.



for many purposes. Rods or bolts of wrought iron, to give vertical tie, may be used; but all tall structures should depend on the strength, cohesion, and gravity of the materials, for stability and permanence, rather than on iron or other aids.

Tall chimneys have elements of destruction to contend with which are absent in Italian tower and Eastern minaret, namely, great heat, and gases which may affect and destroy both bricks and mortar. The only remedy against these elements will be so to design and construct the chimney as to have an inner lining of the flue, which may be cut out, taken away, and be replaced without endangering the structure. A space or air chamber betwixt the true shaft and lining will be of great service in preserving the whole.

Towers and minarets have, for the most part, internal stairs, or means of access up them. Our largest and tallest chimneys may easily have means of access provided, as also means for erecting temporary scaffolding for examination and repairs, should repairs be required. This hint will, I doubt not, be sufficient. An architect or an engineer should provide for all contingencies, and not build a tower or chimney 300 feet in height, and remove his scaffolding, without having considered the means of future examination and repairs. A recess, with step and hand-irons, and put-lock holes at regular stages, properly formed for easy use, may furnish means within the shaft. Openings through the shaft may form part of the design, such openings having the character of sun's spaces, the formed space being filled in, but affording means for the removal of the filling without fracturing the main work of the shaft. All tall chimneys or towers must have proper electric conductors, secured in the best manner.

#### Colour and Ornament.

Colour and ornament may be used in tall chimneys: contrast of colour may be made to produce ornament. The common bricks of almost any district may be sorted so as to produce contrast in tint or tone—red, and yellow or cream colour. This tint of the bricks may be preserved and heightened by using mortar of the same tone or tint. Furnace ashes and lime will produce a dark mortar; powdered red brick or red tile mixed with lime will give a red tone to mortar; and cheap mineral colours may be added to mortar for pointing. The colour of mortar is sadly neglected, as the same white lime and sand are used for all tones of colour in bricks, and not unfrequently white putty mortar is used for jointing the reddest as well as the lightest-coloured bricks; the light-coloured work having harmony of breadth and keeping—the red brick portion being frittered and broken up by the contrast betwixt bricks and beds and joints.

If precedent may be our guide in outline it may also be a guide in the use of coloured contrast; and although the use of marbles of various colours with stone and with bricks is designated "strange and preposterous," I must confess to a leaning in favour of colour, and most strongly advocate its use where dingy monotony may be relieved. There are plenty of brick and stone fronts dreary and wearying to the imagination. The oppressive feeling produced by a red brick-built town—if I may judge by my own sensations—is one of lasting disappointment. My earliest sensations were matured in Lancaster, a clean stone-built town. My first journey was to Preston, a town of red bricks. At this distance of time I do not forget the disagreeable feelings which came over me, and which I suppose I never shall forget.

I would earnestly recommend all architectural students to study the best brick structures of England and of the continent, as also the buildings in which alternate courses of bricks, stone, or marbles are used. I would not shrink from using "white, black, red, brown," or any other colour, if monotony could be prevented, and the eye and mind gratified. The classical man may call me a Saracen if he thinks proper—I hold to the use of colour.

In advocating colour, I need scarcely say that at the same time I advocate breadth and harmony, that is, "keeping." The laws of colour must be well understood, and these laws must be attended to. As in music so in outline and in colour, the student must learn well the gamut, and attend to his thirds, fifths, and octaves, or discord will be the result of his labours,—and discords in architecture are quite as disagreeable to the feelings as discords in music.

In recommending the use of moulded and coloured bricks, as also terra-cotta, I would direct attention to the Architectural Exhibition now open in Suffolk-street, London, where specimens of these materials may be seen. The catalogue furnishes full information both as to makers' names and places of manufacture.

The time is ripe for originality of design in the use of brick, if our young architect will only grapple boldly with existing difficulties. Manufacturers may be found who will second his wishes if his plans and sketches are only practicable. They must be practi-

cable, not only to the maker, but also to the brick-layer. Any new form of brick must work in bond, or in course, with common bricks. The dimensions of any new forms in brick or terra-cotta should also not exceed the easy manipulation of the material from the clay state to the finished and burned brick or tile; and the form in all cases should be one of strength, both before use, and after it has been set in any building. The form and dimensions of a common brick are perfection: there are strength, facility of handling, and adaptability to work any useful bond. Common bricks may also be arranged to form a vast variety of ornament.

Mr. Rawlinson submitted a series of very clever designs, in illustration of his views. In his description of these, he said:—

In the designs now submitted, vertical lines are, for the most part, used where existing structures (tall chimneys), invariably batter. There is, I conceive, great beauty in a vertical line used as proposed. For precedent I must refer to Italian examples, the chaste campaniles and towers, which I would fain see more studied.

Most of the designs are for detached structures, and it is desirable that tall chimneys should stand detached on their own bases. A special foundation must then be prepared, and the chimney will not depend on any building for support, nor injure or be injured by vibration, or partial settlement in the foundation, or in the materials used. The vertical form adopted almost throughout may be objected to, as offering a larger area for the wind to set upon. My reply is, the wind will not injure a sound structure standing on a good foundation. The force of the wind in our greatest storms rarely reaches 30 lb. on the square foot; the gravity of any chimney is much greater than this. Eastern minarets and Italian towers stand not only storms of wind, but also shocks of earthquake.

In no case are quoins shown, either in plinth or shaft, and their use is repudiated to the uttermost. Whatever material is used must be set in course, with the bricks, or must form entire courses round plinth or shaft. This rule must have no exception, but must apply from foundation to summit. An external band of stone may be backed up with brick to resist the action of fire for heat, but in no case the stone must not be set in bond with some exact number of courses of bricks, so that the whole may be grouted and lashed into solidity.

In arranging courses and roofs on chimneys, it may be necessary to use iron bond and iron cramps. In such case great care must be taken so to use the metal as to run the least risk from contraction or expansion. It is practicable to combine iron with stone and brickwork so as to ensure strength and safety, but the combination must not be lightly undertaken nor carelessly made.

There should not be any cutting of bricks, if possible; but all face-work should have the fire-brick preserved. In proposing contrast in colour by brickwork I do not contemplate the necessity of obtaining costly bricks from a distance; but for the mass of the work the common bricks of a district may be so assorted and set in mortar of the same tone of colour as to effect all the contrast required. Moulded bricks for ornamental purposes, being required in small quantities, may be obtained from a distance without adding very much to the whole cost of the work.

Thought and judgment in the design and care in the execution of any work will tell more than mere expense in ornament. To the student I must reiterate the necessity of thought. Examine all the prints and drawings of buildings you can find access to. Examine all the buildings you see with the greatest care, to understand, if possible, the meaning of the architect or builder; and, above all, never put a line on paper at random, nor because it is to represent a form taken from some other building, and the reason for which you have not thought about. There ought not to be any chance flims or chance effects, but one uniform, clear, and distinct result of thinking.

#### BUILDERS' BENEVOLENT INSTITUTION.

A SPECIAL meeting of the directors of this excellent charity was held on Monday, 23rd inst. for the purpose of taking into consideration the necessity of holding another election of pensioners in May next; the treasurer, Mr. George Bird, in the chair. The secretary reported, that the state of the funds would not allow of more than two pensioners being added to the existing number, thirty-six, viz. twenty-one males and fifteen females. At the last election, in November, 1856, there were nine unsuccessful candidates, and to which number, no doubt, more would be added in the shape of new applicants.

The committee, therefore, deeply regretting their inability to elect more, appealed to the builders generally, but more particularly to the members of the numerous trades who had not yet contributed towards the support of the Institution, to aid them at the present moment, and by their support enable them to increase the number of the pensioners, and extend the benefits of the charity. The ball, it was stated, would produce about £50. On the motion of Mr. John Newton, jun. seconded by Mr. R. Richardson, it was resolved that an election of two pensioners, one male and one female, should be held at the London Tavern, on Thursday, 28th May next.

#### NATIONAL ART COLLECTIONS.

I READ in your last number a well-digested report from a committee of the society of architects, strongly recommending the purchase of the Soulaiges collection. Is it not wonderful that our Government, admitting, as it must, not only the advantages of art education with reference to the industrial welfare and the social and moral improvement of the people, but its necessity, if we are to keep pace with the progress of other nations, should yet grudge the means, especially when it is considered how very little, compared to our enormous expenditure, would satisfy all the claims of art in its widest sense? Should the purchase be declined, and a smaller sum be granted, we shall see, as at the Bernal sales, some of the most important objects carried to Paris, others fiercely contested by the indignant collectors, and perhaps a

renewal of the stand-up fight between the British Museum and Marlborough House. What proportion of our national art-treasures has been supplied by collectors is shown by the statement lately made in the House of Lords, and the records of the British Museum, much as they are often disgusted by the conduct of Government and trustees. Their patriotism has been of late sorely tried by the refusal of the trustees of the British Museum to purchase for a small sum, the interesting, genuine, and English collection made by Mr. Faussett, notwithstanding the entreaties of the public; in consequence, some say, of their officers having too zealously pressed it upon them: there may be other and better reasons for their decision, which has deprived the country of more than one valuable donation. The spirited purchaser of the Faussett collection has very properly, in the title-page of the catalogue, registered the decision, the error of which is established by the text and illustrations of his beautiful volume. May it be a warning for the future.

Q. P.

#### PROPOSED NEW ROAD IN SOUTHWARK.

At the meeting of the Institute of Architects on the 9th, Mr. Donaldson gave a description of the streets proposed to be formed by the Metropolitan Board of Works.

With reference to Southwark, he adverted to the importance of a direct communication from the western parts of London to the Borough, the railway termini at London-bridge, &c. in order to avoid the difficulties of the route through the city. He called attention to the fact, that the existing line, on the other side of the river, of the York-road and Stamford-street, constituted the greater portion of the communication now projected by the Metropolitan Board; and that a continuation of the latter street eastwards to the Borough would complete the line. It commenced at a point north of the Town-hall, Southwark, and terminated opposite the east end of Stamford-street. This line is necessarily curved, in order to avoid, whilst closely infringing upon, the College, Almshouses, Messrs. Barclay's premises, Messrs. Potts' Vinegar Works, Hopton's Almshouses, the premises and market of the Hop Planters' Company, Messrs. Eiston and Amos's Foundry, &c. The estimates for this line were as follow:—

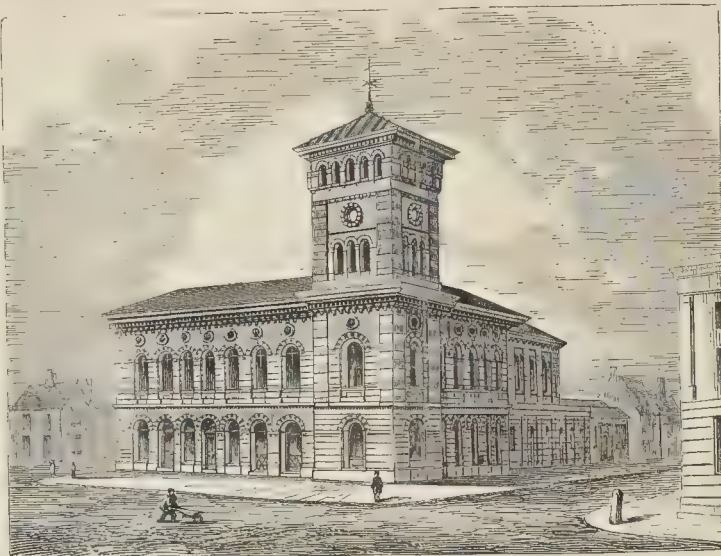
OUTLAY.	
Purchase of property .....	£510,549
Sewer .....	8,375
	£519,424
RETURN.	
Sale of ground-rent .....	£165,390
Property re-sold, and sale of old materials .....	33,363
	198,753
Difference, or net cost .....	£320,671
	£519,424

But towards this cost there were already about 90,000l. in the hands of the Government. Contrasted with the above plan, Mr. Donaldson described (referring to a map) the route laid down by Mr. Pennethorne in 1853, being a straight line from a point near the Lambeth side of Hungerford-bridge, which it is proposed to widen to a carriage-way, passing close to the north side of Surrey Chapel, direct to the Town-hall, in the Borough. This line it was also proposed to continue eastwards to Bermondsey, and westwards by a curved line to the Surrey foot of Westminster-bridge. The main portion of the line passed through a very inferior description of property. The estimate made by Mr. Manable was as follows:—

OUTLAY.	
Purchase of property, good-will, and cost of sewer .....	£895,104
RETURN.	
Property re-sold, sale of ground-rent and old materials .....	£631,794
Difference, or net cost .....	£263,310

Mr. Donaldson briefly referred to another project by Mr. Pennethorne, in 1844, for a line direct from Westminster-bridge to St. George's Church, in the Borough, on through Bermondsey, which would then be opened up to general traffic; as also to another scheme for widening the existing line of the New Cut and the streets beyond Surrey Chapel westward to the Borough, as a cheap method of meeting the required object. He concluded by impressing upon the meeting the superiority of Mr. Pennethorne's plan over that about to be submitted to Parliament, as being shorter, more economical, and as bringing into more direct play and communication Westminster, Hungerford, Waterloo, Blackfriars, and London bridges, an opinion in which we fully coincide.





Bridgnorth New Market Buildings.—Mr. Griffiths, Architect.

#### BRIDGNORTH NEW MARKET BUILDINGS AND HALL.

THE new market building, which is composed entirely of bricks, in colours of red, white, and blue, is in the Italian style, after a style by Mr. Griffiths, architect, of Quatford. The main block of the building is square, with a tower at the north-west angle. The markets extend down Listley-street. Being a corner building, it presents two façades, the one in Bank-street, the other in Listley-street, with the tower at the angle. The general walling is of blue brick, banded with white; the quoins, strings, and plinths being also in brick of the latter colour. The building is two storied. In the main body the ground-floor consists of shops and entrance-hall; the tops of the windows and entrances presenting, in the exterior, a line of seven circular arches, the middle three having a pier of double width on either side, thus making them central. The arches are in alternate blocks of blue and white brick, springing from piers also in blue, banded with white. The annexed rough view must be considered as simply indicating the arrangement. The base of the tower, which is divided into two compartments by the continuation round it of the string of the building, projects slightly. The compartments from the ground to the string are carried up in white brick, banded with blue, and have a window with circular arch in each of the two faces. From the string to the main cornice—which is also continued round the tower—are pilasters of white, banded with red, with a window between them corresponding with those below, but rather narrower. Above the cornice—which is continued from the main building—is a blocking of white brick, from which the tower is raised to a considerable height, with the pilasters of red and blue continued at each angle, leaving in the four faces a receding panel of blue. Each of these panels has three light circular-headed windows, with a circular opening for the clock face above them. The public hall being built over the centre of the markets, and not being so wide, leaves two side aisles in the latter, which are roofed in with rough-rolled plate-glass.

The principal entrance to the building is in Bank-street, through two archways, fitted up with ornamental iron gates, opening into an entrance-hall, the floor of which is laid with encaustic tiles of plain design. There is a central stone staircase, with cast-iron balustrades, conducting

to a landing, from which are reached the various rooms above the shops. This upper story contains a reading-room and library for the new Literary and Scientific Institute, a magistrates' room, and clerks' office, and the large public hall, the latter being situate at the back, and, as already stated, over the centre of the markets. The hall is a parallelogram of 80 feet by 32 feet, and is lighted by six windows on each side.

The markets, which are at the back of the building on the ground-floor, are approached either from the principal entrance or from Listley-street. They contain fish-stalls, general and butchers' markets; the whole of which are paved with brick, fitted up with stalls, counters, &c.; and have the gas and water laid on. The general market is divided into side aisles and central avenue by piers and arches, which support the public hall.

#### SURVEY OF THE THAMES.

IN the leading article in the *Builder* of last week, you ask, "Can the statement be correct, that there has been no survey of the river since that of Telford?" Allow me to say that in 1852 the Navigation Committee of the Corporation of London caused a survey to be executed, extending from Battersea-bridge to Woolwich. The special object they had in view was to have an authentic record of the existing state of the river, so that future comparisons could be made, in order to ascertain the extent of the deepening of the bed of the river which is in progress from a variety of causes. This survey was executed under my direction by Mr. T. Macdougall Smith; and as the utmost attainable accuracy was required, every sounding for the longitudinal and the numerous cross sections was taken with the spirit-level; and, by a process originated I believe by Mr. Smith's assistant, Mr. May, the precise position of each sounding was observed in such a manner that it can be exactly found at any future time.

S. W. LEACH,

Engineer of the Thames Navigation and Port of London.

#### COMPETITIONS.

*Chapel, Leeds.*—Mr. William Hill, architect, Leeds, is the successful competitor for the proposed Methodist New Connection Chapel to be erected in Woodhouse-lane, Leeds, at a cost, with boundary walls and iron railing, of 3,000*l*.

*Sunderland Cemetery.*—In answer to advertisements offering 20*l*. for the best design for chapels, lodges, and laying out ground, forty-four sets were sent in, and from these the committee have selected a

design by Mr. Matthew Thompson, architect, of Newcastle and Sunderland.

*Liverpool Wellington Monument.*—Will you allow me to call attention to the competition for a monument proposed to be erected in Liverpool to the Duke of Wellington? It is now rapidly approaching four months since the drawings were sent in to the committee for their consideration, and they have been sitting upon them sufficiently long I think to have enabled them to have hatched something out of them long ere this; but I have not yet heard of there being anything definitely come to in the matter. Three or four weeks ago an advertisement in your columns met my eye, calling for the address of "Delta X," and as I do not happen to be that individual, I made up my mind that the affair had been settled in favour of "Delta X." However that may be, I have heard nothing further of the matter since I sent in my drawings on the 1st November last.

A COMPETITOR.

#### Books Received.

*The New Palaces of Administration.* By A. CAMBRIDGE MAN. Cambridge: Macmillan and Co. London: Bell and Daldy. 1857.

THE object of this pamphlet is "an earnest appeal to the competitors, the public, and the committee," in favour of Gothic, as the style to be adopted in building the proposed Government Offices. On the ground of unity and harmony, putting aside Whitehall, the Horse Guards, and the Privy Council Office (which latter, moreover, may come down), the writer urges, as they will be most viewed in connection with the new Houses of Parliament and Westminster Abbey, Gothic should be the style. But when so vast a pile of building is about to be erected, the very best style should be adopted irrespective of neighbourhood,—and this, with strong feeling, he declares to be Gothic:—

"If formality [he writes], tameness, method, squareness, be most beautiful, then is Italian architecture most beautiful; but if boldness, freedom, grace, if buoyant life and freshness be beautiful, then is Gothic the queen of styles. In short, if a straight line of rails be more lovely than the wild woods and the dancing sea, then is Gothic more lovely than Pausanias, for the one glows with the force and spirit of nature, while the other is squared by the formal rules of man."

The appeal falls upon us rather as an echo than a voice; and, coming thus late in the day, can operate only as advocacy for those of the competitors who have adopted a Medieval style. It is to be hoped that the judges, whoever they may be, will enter upon their task without any prejudices as to style, and, with the conviction that "whatever is best administered is best," look for those who have best expressed the best thoughts.



## Miscellaneous.

**SOCIETY OF ARTS: STREET TRAM AND RAILWAYS.**—At the meeting of the Society of Arts on the 11th inst. Mr. W. Bridges Adams read a paper on a subject which we have frequently treated of, namely, "On the Application of Rails for Horse Transit in the Streets and Environs of London, and also for Railway Branches." The paper was illustrated by diagrams; and a discussion ensued. Some idea of Mr. Adams's mode of treating the subject may be gathered from his reply to the observations advanced in course of the discussion, and which we quote from the report of the whole in the *Journal of the Society of Arts*. Mr. Adams said, "It had never been contemplated by him to cover all London at once with this system of railways—nor did he think it practicable to introduce them into narrow thoroughfares, although perfectly practicable in some localities. He thought, as regarded the traffic of London, they would ultimately have to make streets on the first floor—the first floor for the light traffic, and the lower level for the heavy traffic. With regard to the railway itself, he looked upon it only as another mode of paving, and a strip of iron rail passing down a street would occasion no more obstruction than the iron gutters through the pavement to carry off the water from the houses. With regard to the rails, there was no occasion for a deep channel—a very small one would suffice to keep the wheels in their place. He believed the plan needed only to be seen in operation to be appreciated, and his object in the present paper was to draw attention to the subject. He thought it desirable that it should be tried over a short distance, and when proved to be practicable there would be no difficulty in following it up. He saw no reason why the experiment should not be tried in such thoroughfares as Oxford-street or Holborn. With regard to stopping the carriages at any required moment, there was no difficulty in adopting mechanical appliances to effect that object. He thought the rails ought to be laid upon the simplest plan, so that a length requiring to be replaced could be removed with facility. He thought the cost of repairs would be small. The load upon the rails would be so much less than that on ordinary railways, that the abrasion of the rails would be very slight indeed."

**THE ARCHITECTURAL INSTITUTE OF SCOTLAND.**—At a meeting of this Institute, held last week, Mr. Charles G. Reid, W.S. read a paper on "Primeval Architecture and its Remains"—Mr. Cousin, architect, in the chair. The lecturer said it could not fail to have occurred to men's minds, pondering upon the Antediluvian period, to consider under what a totally different economy to ours men then lived, breathed, and acted. His opinion was, that the people of that age had reached an infinitely higher degree of progress in science, mental and natural philosophy, and particularly mechanics, than now-a-days commonly entered into the imagination of most who had written on this subject. If this was so, on what possible ground could it be assumed, as it had often been assumed, that the first great diluvian patriarch and his family had lost all recollection of and acquaintance with the knowledge and accumulated experience previously acquired by himself, his family, and his contemporaries? Was it to be supposed that all knowledge and skill possessed by the antediluvian world had perished in the Flood? This, in his opinion, was impossible. They must, therefore, fairly conclude that when the ark rested upon the mountains of Armenia, Noah and his family descended into the plain fully equipped and provided for the accomplishment of the great mission entrusted to them, and that they did not enter upon that mission as barbarous savages beginning the work of civilization. Their great work would be to revive and embellish and to improve the ruins of those cities and mechanical works which the Deluge had thrown down. They had thus the means of accounting for some of the loftiest specimens of architecture, and the remains of advanced civilization discovered in ancient cities disintegrated by the moderns.

**COLOURED WASHES FOR OUTSIDE WALLS.**—A correspondent, signing himself "Cæsariensis," says,—"As a Member of the 'Jersey Working Men's Association,' which takes in your excellent publication, I would feel greatly obliged to you to give the name of any firm or manufacturer of any liquid (if there be any), which, being applied to outside walls in the manner of an ordinary wash, has the power to retain them permanently of any desired tint." No such name occurs to us at present; but we may refer our correspondent to the description, by Mr. Wentworth Scott, of his "labcoric paint," more than once given in our pages. Might not soluble silicate of soda form a basis of coloured stains? An old chemical author, who seems to know what he is writing about, states that this silicate "extracts colours from all minerals." How this is done he does not say, but the hint may suffice for new experiments.

**UPWARDS OF 150 LIVES LOST BY A PIT EXPLOSION.**—At Lund-hill colliery, near Barnsley, on Thursday in last week, a dreadful explosion took place, while nearly 200 persons were in the pit. After the explosion the pit took fire, and burning masses were projected even then 20 yards above the pit mouth. Measures were taken to subdue the fire, but it was anticipated that it would be some days before the pit could be entered. Sixteen persons had been brought up alive, but some of them seriously injured, and about a dozen dead bodies were picked up in the tramways; but as to the fate of the remainder, there is but too much reason to fear the worst. The pit, it is said, was considered one of the best ventilated in the district, and had just been pronounced perfectly safe before the poor miners had descended.

**LIVERPOOL LABOURERS' DWELLINGS SOCIETY.**—At a general meeting of the shareholders held last week, a report of the progress of this society was read by the secretary. It stated that the company's buildings in Northumberland-street had been nearly completed, from the plans by Mr. Williams, the architect. The total amount of subscribed capital, including the forfeiture of 170*l.* on shares conditionally relinquished, was 20,970*l.* Of this amount the sum of 8,340*l.* had been paid up; 5,335*l.* had been paid on account of the buildings in Northumberland-street, leaving about 1,000*l.* still to be paid. The Chairman stated that of the forty houses of the society, nineteen were already let. He had had an application from Hull, and from Salford, asking for plans and information as to the mode of conducting such a society. The report was unanimously adopted.

**LIVERPOOL ARCHITECTURAL SOCIETY.**—At a meeting, on the 18th, a copy of the protests from the London "Architectural Association," in the case of the Museum and Middlesex Schools competitions, and a suggestion that the Liverpool Society should interfere, was received. According to the local papers, some discussion took place, in the course of which Mr. Picton said, in reference to the letter so far as it alluded to the Liverpool competition, that it proceeded on two assumptions, both of which were incorrect. The assumptions were, that the rewarded design was being carried out, and that the committee of the Liverpool Free Library had the control over it. That design was not being carried out, but another plan had been adopted which would make the building much less expensive. It had been selected by Mr. Brown, and was under his control. On the motion of Mr. Horner, it was agreed that the communication be acknowledged with thanks, and that the Architectural Association be informed that, after a full discussion of the question, the society, under all the circumstances of the case, did not feel it desirable to interfere in either of the matters alluded to. A paper, by Mr. Leeds, entitled "Modernism or Mediaevalism," was read.

**MODELLING CLASSES AT BIRMINGHAM.**—In your notice concerning the Birmingham School of Art, published in the last impression of your journal, you have reported certain remarks delivered by Lord Ward at the late annual meeting relative to the master of the modelling classes in that institution. As a president may reasonably be supposed to speak the sentiments of a committee of whom he is the head, and as, therefore, the speech of Lord Ward, by the wide circulation which it will now obtain, is calculated to do me serious injury, I trust you will be good enough to spare me space in your columns for the insertion of this letter. Some time previous to the annual meeting I had tendered my resignation, but it has since, notwithstanding the president's speech, been unanimously voted by the committee, that it is highly desirable to retain my services in their school. The following extracts are from the principal local papers. [We need give only one].—"At the public meeting remarks were made deprecatory of the modelling class and its tutor. From an inspection of the specimens exhibited, and considering that the class was only revived nine months ago, after becoming almost extinct, we are bound to say that considerable credit is reflected upon the master, Mr. —, who, whatever may be his youth and inexperience, unmistakably knows his work." The subjoined is an extract from a report of the public lecture delivered by Mr. Wallis, art superintendent of the district. Speaking of Lord Ward's speech, he remarked,—"If he had heard what was said, he should most certainly have defended Mr. —, for, as far as he was concerned (and he believed he spoke also for the pupils of the modelling class), he was well satisfied with the result of the seven months' work. \* \* \* Although the specimens exhibited did not display that high perfection which some people seemed to expect in a class recently established in a school of art, still there was that in the work which plainly testified that the teacher knew what he was about."

THE MASTER OF THE MODELLING CLASSES,  
BIRMINGHAM SCHOOL OF ART.

**IRELAND.**—A large ragged school-house has been recently built at New Combe, according to the *Dublin Newsletter*, and was opened last week. It is of stone. Mr. Maguire supplied the design, and Mr. Bolton erected the building, on a contract for 1,070*l.* of which 670*l.* have been realised by subscription. Steps are being taken, according to the *Belfast Newsletter*, for the erection of a public hall at Belfast, capable of holding 1,500 to 2,000 persons, the want of such a building being much felt. For the new town-hall of Coleraine, according to the local *Chronicle*, four tenders were received, two from townsmen, Mr. S. Kirkpatrick and Mr. James H. Coyle; one from a Derry man; and the fourth from Messrs. M'Laughlin and Harvey, of Belfast. After a careful examination of the tenders, it was found that the two latter were nearly equal, and on a division of the Board of local Commissioners, Messrs. M'Laughlin and Harvey were declared the successful contractors at 3,021*l.*

**THE DEMAND FOR LABOUR IN AUSTRALIA, AND THE SUPPLY IN ENGLAND.**—Mr. William Howitt urges, in the *Times*, that Government ought to be asked the plain question,—"Are there not funds in your hands to send out the labour so called for in Australia? And if so, why are these starving bricklayers, masons, plasterers, &c. who are so greatly needed, not sent out?" The fact is that the proceeds of the sales of lands in Australia are appropriated (or profess to be so) to this very purpose. The public ought to be informed, therefore, where the hitch is which prevents the demand in Australia from being immediately met by the surplus supply in England, whether it be a mere "circumlocution" hitch, or one of a more onerous description. "With this want of labour here and this pressing demand for it there,—with starvation on this side of the water and 10*s.* a-day for even working on the roads there, with all kinds of workmen connected with building out of work here, and there offered 14*s.* and 15*s.* a-day, what is the reason," Mr. Howitt asks, "that our destitute men and women cannot get to this land of promise—from this purgatory and destitution to that paradise of labour? There are abundant funds provided for this very purpose." Meantime there is another sort of "circumlocution" at work, as a hindrance to this great good to our unemployed, besides that of Government. It does not suit the purpose of certain political demagogues that the starving population should obtain employment: they are therefore busy in the endeavour to persuade them, by all sorts of circumlocutory arguments, not to emigrate: the unemployed, however, appear to be awake to the real motives at work with such advisers, and have treated them with the contempt which a total disregard of the best interests of the unemployed deserves.

**TUNSTALL NEW MARKET HALL.**—I shall feel much obliged if you will favour me with a short space in your columns, to state as briefly as possible what I consider to be most unfair conduct on the part of the contractor for the above works. In compliance with an advertisement which appeared in your paper, I sent in a tender to the Local Board of Health at Tunstall, for the ironwork required in the erection of a new market-hall, which I undertook to supply and fix for 1,750*l.* At the request of Mr. Chapman, of Newcastle, the contractor for the building, I also sent him an estimate of the same amount for the ironfounders' work; and on learning, through your paper, that the Board had accepted his tender for the ironwork, which was the same amount as my own, I, of course, supposed that he had made use of my estimate, and that he would give me the job. His reply, however, was, that he intended to reserve the wrought-iron work to himself, and that my price for the cast-iron work was too high. Feeling strongly the unfairness of such treatment, and believing that all was not straightforward and above-board, I wrote to the clerk of the Local Board on the subject, who said,—

"In reply to your letter of the 14th instants, I beg to inform you that Mr. Chapman's original tender was 1,900*l.* for ironwork. It was accompanied by a letter addressed to the architect, dated January 14, 1857, in which Mr. C. says,—'In consequence of an offer which I have only this morning received, I am enabled to reduce the amount of my tender for the ironwork contract to the Tunstall market, by the sum of fifty pounds.'"

You will observe that Mr. Chapman's original tender to the Board was 50*l.* above mine, and that he addressed a letter to the architect, offering to reduce it 50*l.*; thereby bringing it precisely to the same amount as mine. It is for you and the public to judge whether Mr. Chapman has acted fairly in throwing me overboard, after having obtained the contract through the medium of my tender. For my part I think the Board ought not, in fairness to the parties tendering, to have taken cognizance of a private letter sent to the architect, but should have decided upon the estimates sent in to them upon their printed forms, and in compliance with their public advertisement.

Derby.

JAMES HAYWOOD, Jun.







# The Builder.

VOL. XV.—No. 735.

ON Monday evening last, as our readers will find in a notice of the proceedings on another page, the Institute of British Architects resolved unanimously to recommend to her Majesty, that the Royal Medal for the present year should be conferred on Mr. Owen Jones, for his published works, including the "Alhambra" and the "Grammar of Ornament." The recommendation, we have no doubt, would be endorsed by the profession, not only in our own country, but throughout Europe. In the production of his magnificent work on the Alhambra, Mr. Owen Jones expended his fortune, 7,000*l.* it is stated, with little prospect then of a pecuniary return, and, probably, in opposition to the opinions of his friends, who may have thought that he was devoting his time in an unprofitable study. Strong feeling and determination, however, carried him through it, and the results have fully justified his course as respects the services rendered by it to art, while personally, he has now probably no reason to regret it. The value of his labours in inducing a feeling for colour, and elucidating the principles of decoration, has long been felt by his professional brethren, and it has been wisely thought that the completion of his last work, "The Grammar of Ornament," made the present a fit moment for the bestowal of the highest reward they had to offer. We most cordially concur in the compliment paid to him, and will take the opportunity to make known the scope of "The Grammar of Ornament" to those of our readers who do not already know the work.\* We have already expressed in warm terms our admiration of the book. It divides itself into,—Chapter 1. Ornament of savage tribes, with three plates: 2. Egyptian ornament, with eight plates: 3. Assyrian and Persian ornament, three plates: 4. Greek ornament, eight plates: 5. Pompeian ornament, three plates: 6. Roman ornament, two plates: 7. Byzantine ornament, three plates: 8. Arabian ornament, five plates: 9. Turkish ornament, three plates: 10. Moresque ornament, from the Alhambra, five plates: 11. Persian ornament, five plates: 12. Indian ornament, seven plates: 13. Hindoo ornament, three plates: 14. Chinese ornament, four plates: 15. Celtic ornament, three plates: 16. Mediæval ornament, five plates, and illuminated MSS. three plates: 17. Renaissance ornament, nine plates: 18. Elizabethan ornament, three plates: 19. Italian ornament, five plates: and 20. Leaves and flowers from nature, with ten plates.

The leading principles in the composition of ornament of every period enunciated by the author, have been already set forth at some length in our pages.† In the prosecution of this work, and the study of ornament, he says he has gathered these main facts:—

"First. That whenever any style of ornament commands universal admiration, it will always be found to be in accordance with the laws which regulate the distribution of form in nature.

Secondly. That however varied the manifesta-

tions in accordance with these laws, the leading ideas on which they are based are very few.

Thirdly. That the modifications and developments which have taken place in one style to another have been caused by a sudden throwing off of some fixed trammel, which set thought free for a time, till the new idea, like the old, became again fixed, to give birth in its turn to fresh inventions.

Lastly. He has endeavoured to show, in the twentieth chapter, that the future progress of ornamental art may be best secured by engraving on the experience of the past the knowledge we may obtain by a return to nature for fresh inspiration. To attempt to build up theories of art, or to form a style independently of the past, would be an act of supreme folly. It would be at once to reject the experiences and accumulated knowledge of thousands of years. On the contrary, we should regard as our inheritance all the successful labours of the past, not blindly following them, but employing them simply as guides to find the true path."

His great object is to aid in arresting the unfortunate tendency of our time to be content with copying, but in the first instance the work will probably have a contrary tendency, and will be used by many as a dictionary rather than a "Grammar,"—a storehouse of available examples, instead of materials for reasoning. The Manchester manufacturers, we have no doubt, will, amongst others, put many of the Egyptian patterns, in plates, 9, 10, and 11, on to dresses for all the world.

It is curious to note the use of the fret as an ornament by so many nations. Although popularly viewed as a characteristic of Greek art, it is to be found in every style of architecture, and amongst the first attempts of ornament of every savage tribe. Perfect specimens will be seen in some of the patterns from the ceilings of Egyptian tombs, resulting, apparently, from their being representations of mats—formed by plaiting together straw, reeds, or bark—with which tents in earlier times were covered. The Arabian, Chinese, and Mexican frets, although strongly resembling those of the Greeks, may have had this same independent origin. From a twisted rope, again, we get the guilloche.

In what is known as the Greek honeysuckle, our author finds it difficult to discover any attempt at imitation, and is induced to believe that the various forms of the leaves of a Greek flower have been generated by the brush of the painter—according as the hand is turned upwards or downwards in the formation of the leaf would the character be given,—and that it is more likely the slight resemblance to the honeysuckle may have been an after recognition, than that the natural flower should have ever served as the model. The prevalence of a precisely similar form, however, in Assyrian ornament, might be quoted as affording a more immediate suggestion to the artists of Greece.

Mr. Jones is so satisfied that all ornaments on the mouldings were coloured by the Greeks in a manner to render them distinct, that he has supplied the colour in several patterns which have hitherto been published only as gold or brown ornaments on the white marble.

Greek art "carried the perfection of pure form to a point which has never since been reached; and from the very abundant remains we have of Greek ornament, we must believe the presence of refined taste was almost universal, and that the hand was overflowing with artists, whose hands and minds were so trained as to enable them to execute these beautiful ornaments with unerring truth."

The selection of Greek (painted) ornament is very full and beautiful. The chapter on Roman ornament, and the illustrations of it, are less satisfactory than some others. The amount of design in Roman ornament, consisting universally of a scroll growing out of another scroll, encircling a flower or group of leaves, is shown to be small.

"The Romans ceased to value the general proportions of the structure and the contours of the moulded surfaces, which were entirely destroyed by the elaborate surface-modelling of the ornaments carved on them; and these ornaments do not grow naturally from the surface, but are applied on it. The acanthus-leaves under the modillions, and those round the bell of the Corinthian capitals, are placed one before the other most unartistically. They are not even bound together by the necking at the top of the shaft, but rest upon it; unlike in this the Egyptian capital, where the stems of the flowers round the bell are continued through the necking, and at the same time represent a beauty and express a truth."

Until this principle of leaf within leaf and leaf over leaf was given up for "the adoption of a continuous stem throwing off ornaments on either side," pure conventional ornament received no development.

In the mosaic pavements of the Romans we find the types from which may be directly traced all the variety of Byzantine, Arabian, and Moresque mosaics.

The examples of Arabian ornament contributed by Mr. James Wild, from the mosques of Cairo, are very interesting, exhibiting, if the date given to them be correct, types of those forms which reached their perfection in the Alhambra. One feature introduced by the Moors into their surface ornament should be noticed, namely, the number of planes, sometimes three, on which the patterns were drawn, the ornaments on the upper plane being boldly distributed over the mass, while those on the second interwove themselves with the first, by which arrangement breadth of effect was given when viewed at a distance, and beautiful decoration obtained for closer inspection.

The chapter on Moresque ornament, illustrated mainly by the Alhambra, is, as might be expected, one of the most complete and discriminating, involving many of those points which were set forth by Mr. Jones in his paper printed in this Journal, already referred to. It was, indeed, a wonderful system of ornament, in proof of which nothing more is needed than a journey to the Crystal Palace, at Sydenham.

Of Indian ornament, a number of elaborate and admirable specimens are given, and our author refers, as a matter of course, to the wonder which was excited on the opening of the Great Exhibition in 1851, by the gorgeous contributions of India, exhibiting, amid the general disorder every where else apparent, so much unity of design, skill, and refinement.

"Whilst," he says, "in the works contributed by the various nations of Europe there was everywhere to be observed an entire absence of any common principle in the application of art to manufactures,—whilst from one end to the other of the vast structure there could be found but a fruitless struggle after novelty, irrespective of fitness, that all design was based upon a system of copying and misapplying the received forms of beauty of every bygone style of art, without one single attempt to produce an art in harmony with our present wants and means of production,—the carver in stone, the worker in metal, the weaver, and the painter, borrowing from each other, and alternately misapplying the forms peculiarly appropriate to each,—there were to be found, in isolated collections at the four corners of the transepts, all the principles, all the unity, all the truth, for which we had looked elsewhere in vain, and this because we were amongst a people practising an art which had grown up with their civilization, and strengthened with their growth. United by a common faith, their art had necessarily a common expression, varying in each according to the influence to which each nation was subject;—the Tunisian still retaining the art of the Moors, who created the Alhambra; the Turk exhibiting the same art, but modified by the character of the mixed population over which they rule; the Indian, uniting the severe forms of Arabian art with the graces of Persian refinement."

\* The Grammar of Ornament, by Owen Jones. Illustrated by examples from various styles of ornament. 20 folio plates drawn in stone by F. Bedford, and printed in colours by Day and Son. Published by Day and Son, Lithographers to the Queen &c. &c. &c. Lincoln's Inn-fields, London.

† See Vol. xiv. pp. 688 and 694. Also in previous volumes.



We must take another occasion to refer to this beautiful book, which, we may add, is admirably printed and bound. The ornament on the outside of the cover is an illustration of eclecticism worth notice. The Egyptian lotus and papyrus plant form the centre: on each side of these opens the Greek honeysuckle, with, farther to the right and left, the Gothic trefoil and cinquefoil and Moresque scroll-work, with Roman acanthus-leaves as a base to the whole.

Mr. Bonomi and Mr. James Wild (in the Egyptian section), Mr. C. J. Richardson (Elizabethan specimens), Mr. J. B. Waring (essays on Byzantine and Elizabethan ornament), Mr. J. O. Westwood, Mr. Dresser, Mr. Digby Wyatt (by an admirable essay on Renaissance ornament), have rendered aid in the production of the work. The drawings have been chiefly executed by Mr. Albert Warren and Mr. Charles Aubert, the author's pupils, and by Mr. Stubbs; while Mr. Francis Bedford and his assistants, with their accustomed skill, have drawn the whole upon the stone, and have executed the 100 plates in less than a year. To Messrs. Day and Son, the printers, and at the same time the publishers, of the work, we cannot give too much praise: their own energy and enterprise, and the great resources of their large establishment, are shown by the rapidity and excellence with which so vast an amount of colour-printing has been executed. It is necessarily a costly book, and should be bought by the directors of public libraries as a matter of duty. The Government should also purchase copies for all the provincial schools of art, and to present to foreign libraries.

#### THE CHURCH OF ST. ANDREA, AT VERCELLI;

AND THE GOTHIC ARCHITECTURE OF ITALY.

THAT version of Gothic architecture which is found in Italy is becoming the subject of more attention than it has hitherto received. We are led to hope that the study of it may not be limited to its mere forms, as through their delineation, or to a simple effort after reproduction, such as has in many another case militated fatally against *art* viewed in any aspect. The circumstances of the introduction of the style into Italy, and its position there, deserve to be viewed for the lessons which we may now derive; and a fair comparison of the merits of the English and Italian manners should be made, that we may discern where is the highest art and the best exemplification of the value of the Gothic principles. If the Gothic style is to be a system of architecture for use during the future, should we not consider whether in importing what is called the Italian Gothic, we might not repeat a passage in the recent history of architecture of too frequent occurrence,—when the style in favour has been abandoned just as its forms and principles were becoming understood, and the course pointed fair for extending the domain through the region of *art*? Such a prospect as this last, surely now is open to the systems, the forms and principles of which have become—during the improved resources for study lately—more familiar to the sight and responsive to the grasp of our architects.

The new love of the Italian Gothic indicates a proper want, but likewise offers a snare. After allowing all importance to the inducements of an archaeological sort—and those which even there are beyond question, pertaining to fresh production in art,—and after admitting what may be due to the language of some writers, there still is, if not a justification, an explanation, of the use by some of our best architects, of features which are common in Italy, but which may be found in bad rather than in good Gothic in England. Such explanation we take to be the growth of the feeling that reproduction—as especially in church architecture, of forms in which the first impression conveyed is one of their exact similitude to others—is an object which is not entirely worthy of artistic labour, or, indeed, one which is properly that of true architecture. And we apprehend that it is impossible that any race of artists should deter-

mined, or during a long period, avert their eyes from the soil of Italy,—from which—with the early-exception—as that may be due to Byzantium—has sprung every phase or fashion of beautiful form in all architecture which has any classical elements, and details structural and decorative of even the Northern Gothic. For the architect to pass by anything that such a country could produce, would be to deny himself proper material of his art,—as also to manifest himself unsusceptible of impressions which should be those of artists.

But it may happen that neither the discovery of the fact of the want, nor the admiration of beauty elsewhere, suffice to supply the precise thing wanted. Passing by the difficult question—“what old style has most claim to attention as the base or the vehicle of art?”—a question which would sink in importance were art properly estimated,—we may venture to say that the course is not through the subversion of current practice,—as in the matter of style,—which may be called the language of art. In the English Gothic system (as, indeed, in the Italian Classical) we have a copious and a productive language,—one which need only be enriched, as all language may be, consistently with itself, by the importation of foreign materials. The analogy between language and style may not be complete; but it is sufficiently so to justify our use of it for present purposes. Thus, we say, it is when the study of the language is ended, that we are ready to begin to use what we have gained. If the moods and phrases of English Gothic have been used up, so much better ought it to be for architecture. Instead of progress, will not the change to Italian Gothic merely shift the basis or vehicle, and place us once again at the bottom of a new and different course?

Do we conceive that style chosen is a matter unimportant? Compare the Gothic of England with that of Italy. Settle the question of “Classic versus Gothic,” either way as to merits,—the English Gothic affords a successful expression of the principles of the general style, in regard to which, although we may not have the fragment of a sublime cathedral like that of Cologne, or a choir with the altitude of that of Beauvais,—if, in short, we have less grand though executed designs, less vastness in parts and less intricacy in detail, we have what is of more value towards progress, namely, the perfect use and demonstration for us of what has been referred to—the “true principles.”

The Italian Gothic is, we believe, vastly inferior as architecture, or as the foundation of new art, to the English,—and for the reason, that it pursued no self-consistent or determined course. Neither the Gothic principles, nor the garb in which they are placed, were ever dominant in Italy,—either the true principles, or the particular style. Italy exhibits the spectacle, so remarkable to one acquainted with their contemporary English architecture, of several concurrent styles,—of exotic or native styles taken up, and laid by, and again taken up and relinquished. When the church at Vercelli was commenced, the Romanesque and Byzantine styles, under various forms, were in use. Yet after the introduction of a Gothic style in that church, the building was completed in the Romanesque,—which, indeed, is the style of the whole exterior, the buttresses hardly excepted.

The high-pitched roof, with gable, was, we might almost say, never, fairly used; the architects of the Italian Gothic churches, with exceedingly few exceptions, adopted a low pitch,—not as the present advocates of the style might argue, from considerations of climate, but manifestly from the impossibility of divorcing themselves from the accustomed classical type of the pediment. Sometimes there are gables of high pitch, but it does not follow that they correspond with the slope of the roof.

The Gothic manner was introduced by the help of foreign artists, at Vercelli; it was again introduced by foreign artists—Germans; and these remained till the end, the recognised masters for the style. It was always spoken of as the *Tedescan* manner,—a fact sufficient itself to raise doubt of any special value in “Italian Gothic.”

The reproduction of a style and manner is ever a practice of doubtful propriety; but lessons of peculiar value may, we think, be learned from

the interference with regular progress which was effected by the partial and temporary acceptance of the Gothic in Italy. To achieve great works in art, as in every other course of exertion, the line of action must be direct, and the guidance resolute. It is impossible to accept a leading principle in part, or to pursue contemporaneously several courses, each claiming to be placed as principal. Judgment must be exercised; but action and the result equally require that selection *should be made*; that objects should be placed in an order of relation; and that the course should be taken with determination and self-reliance. The English Gothic and the Italian classical styles each have leading principles, some of an opposite character—but the relative value of these last is of less moment so long as the principles are directly acted upon. The choice of a style should be made mainly as to what is most in unison with existing taste.

Thus, whilst all materials should be known to the architect, good art may be served in the very act of rejecting some of them. We do not mean to say that the buildings which are called examples of Gothic architecture in Italy, are unworthy of attention, or that they are absolutely wanting in some character of their own. But we would show what we believe was the fact, that the style operated in the manner of interference with the development of architecture in Italy, and that it did so simply because the true Gothic was neither boldly chosen, nor absolutely rejected, as principal or fundamental in the buildings which were designed.

In short, in every work of architecture, a guiding principle, say that of style, should be present; but on this, modifications may be grafted from other styles, and might or should be viewed as infinite. When, however, opposite principles contend for *prominence*, the result is what has ever been discountenanced as example by all the best writers. Hybrid and non-descript works are produced, and if the result in these is often a really new style, of a certain merit, no artist would recommend an effort to do that designedly which results rather from accidents. It is essential to art that there should be defined principle dominant.

The two principles which are opposite to one another in the Classic and Gothic systems, are those of the horizontal and vertical line; and it is curious to observe how, in distinct parts of the same building, the two may be found, yet how they war against each other when it is sought to mingle them in equal proportions. Such intermixture is thought to constitute one source of the decadence of the Gothic style in England. In the Italian or rather English forms of the bell-tower in classical Italian architecture, any considerable interference of the horizontal line with the verticality which is the required leading feature, is felt to detract from the composition. In fact, the arrangement of elements in a work, as principal, secondary, and subordinate, is a requirement in architecture, of whatever style,—just as Reynolds pointed out that it should be, in other species of composition. It is such a want of a dominant and defined principle which makes the defective character, as it appears to us, of Italian Gothic as compared with the Gothic which we have in England. The Gothic of Italy is, in many details, similar to that of Wren, and is defective as Gothic for much the same reasons. Comparing it with the Gothic of the last century, or that for which Battista Langley has the credit, it is impossible to avoid the idea of a certain resemblance. It has a greater likeness, we think, to these than to the best Northern Gothic contemporary with it.

Looking at the history of art in Italy, there is much in this which would tend to fortify the opinions here ventured on. The Italian Gothic was a style which grew up concurrently with the first germination of the Renaissance under Nicolo Pisano, and to that circumstance it owed its chief features of interest, those of the sculpture. It owed much, especially of ornament and colour, to Byzantine and Saracenic influence. But its use at all in Italy is due less to immediate considerations of art than to others—such as may in a majority of cases have made the sole difference between prevalence of one style and another. The influence of the Crusades, which brought many Eastern forms and



inventions to Western Europe, the foundation of the orders of mendicant friars, preparations for the building of Salisbury Cathedral, and the chief monuments in a style which was imitated, though in an exceptional case, in Italy, may all be said to have had more or less concern with the new innovation. Of all these causes, the chief was the rise of the Franciscans and Dominicans, who, especially the former, sought to effect an entire reformation in the Church. By them the pointed style, first introduced at Vercelli, was re-introduced, as in the church of San Francisco, at Assisi, bearing date 1228; and the same order retained an especial regard for the style which they adopted in that building.

Vercelli is in Piedmont, and is situate at about equal distance from Turin and Milan. The first stone of the church was laid in 1219 (or one year earlier than the dates of the commencement of Salisbury Cathedral, the rebuilding of Westminster Abbey, and the cathedrals of Amiens and Eriburg), and the church and the monastery were finished in 1222. The plan is a regular cross, with aisles, a central tower, and two western turrets, four chapels to the transepts, and an atrium before the western end. There is placed askew, near the angle of one of the transepts, a detached bell-tower. The features which are those of pointed architecture, are those of the piers, arches, and groining, and the buttresses so far as the presence of them may be deemed important. The choir or chancel is not apsidal in its termination, but has the square end usual in England.

There seems to be, we may observe, some error in the statement reported in our pages last week, that the majority of the Italian Gothic churches have not the apsidal termination. We think the reverse would be the case. The chapels at Vercelli have polygonal ends. But the choir has the square end and lancet windows of the English Gothic; and the round piers and clustered shafts with moulded bases of Early English character, and the quadripartite groining are sufficiently near in their resemblance to disclose their origin. The imitation, indeed, is markedly such; the work is not one of fresh and life-like art, and therefore may not deserve all that has been said of it favourably. The nave arches have a small chamfer, or something of that nature, but otherwise are not enriched, and in place of vaulting shafts in the usual English manner, the face of the pier itself is carried up—which gives the appearance to the clerestory of being built in subsequently. But the central tower—octagonal above the square of the intersection—which has a diminished stage and pyramidal capping; the lofty turrets at the west, square with pyramidal cappings; the three western doors with shafts, but circular heads; the small circular-headed windows in the aisles and elsewhere; the circular window in the west front, and the small arcade along the clerestory, repeated in two stages at the west; the low-pitched roof, and the atrium—are all features characteristic of the earlier, or rather the then existing style,—though they were completed after the Gothic portion of the building.

The story of the origin of this structure is interesting. There was born at Vercelli, at the end of the twelfth century, one Guala Bicchieri, who, after devoting himself to the study of ecclesiastical and civil law, and adopting the clerical profession, removed to Rome, where he was at length raised to the purple by Innocent III. Guala was sent as legate to France in 1208, and again in 1215, when the pope was trying to dissuade Philip the Fair from attempting the conquest of England. When the invasion under Louis took place, Guala went at the same time to England, and was energetic in the support of King John. On the death of the latter, he took an active part in establishing Henry III. on the throne, for which the king gave him several benefices, and amongst them the priory of St. Andrew, at Chester. Guala afterwards returned to his native city, and passing through France, engaged as his architect a French priest, Thomas, afterwards at Vercelli the first abbot of the convent, and at Vercelli he founded the Collegiate Church, which he dedicated to St. Andrew. There is sufficient evidence, besides the dedication and the style of the church at Vercelli as

commenced, that Guala had acquired English habits and prepossessions. He makes bequests in *sterlings*; relics of English saints were amongst his gifts to the church; and a collection of Anglo-Saxon poetry which belonged to him is now in the cathedral library, the chief piece being the metrical legend of St. Andrew, well known to Anglo-Saxon scholars, and which may have been published.

The church at Vercelli, we may thus see, was a building wholly exotic in its style. As an example of the Northern Gothic, it is of no value beyond the interest of the story connected with it; and an exemplification of Italian Gothic it is not,—being in another version, and not leaving any impress behind it. But even at a much later period, the German Gothic cathedral of Milan was built, and was coeval with a style very different to it—the classical architecture revived by Brunelleschi.

During the interval between the date of this last building, belonging to the close of the fourteenth century, and the building of the church at Assisi, previously mentioned, a considerable number of Gothic churches were erected, and amongst these was the cathedral at Siena, in the thirteenth century, as to which we believe there is some positive evidence of its having supplied a suggestion for the octagon at Ely Cathedral, and thereby for the similar arrangement of the piers and arches in our present St. Paul's Cathedral; the Campo Santo at Pisa, completed in 1283; the small chapel or oratory of Santa Maria Della Spina, at Pisa, by Giovanni Pisano, profusely enriched with canopies and sculpture; the church of Sant' Anastasia at Verona; the church of Sant' Antonio at Padua, by Nicolo Pisano, dedicated in 1231, and having domes modified from those of St. Marc's; the interior of the church of Santa Maria Novella, at Florence (1279); the cathedral at Orvieto commenced in 1290, and remarkable for the mosaic of its exterior; the church of Or San Michele (1284); the church of Santa Croce, at Florence (1294); the cathedral of Florence, founded in 1296, or 1298, of which the dome, designed by Arnolfo, and executed by Brunelleschi, probably with little variation, may be regarded as a better application than those at Padua, of the form to a Gothic building; and many others.

We should also name the town-halls of many of the cities, some of them with marked Saracenic features, and the noble Loggia dei Lanzi, by Orcagna. The last of these has circular arches, the form of which had never been laid aside. But, perhaps, it has little beyond a few details to characterise it as Gothic.

The Italian Gothic exhibits, we think, bad treatment of those details, which are mainly architectural, though something which may be of value in the use of coloured materials. The sculpture and the architecture were in an union of position, but not of association and relationship. The architects were sculptors who practised as architects,—men indeed, the Pisani, studios of the antique, and constituting a noble school,—yet rather by accident than by study, architects. They came too early for the union of their real art, with the architecture of the Revival, and joined their sculpture to the architecture which circumstances, political or religious, gave to their hands.

#### MR. SYDNEY SMIRKE'S FIRST LECTURE ON ARCHITECTURE, AT THE ROYAL ACADEMY.\*

In this country, architects are not unfrequently asked, in a somewhat disparaging tone (and the same inquiry may be made in other countries), "What is the style of the nineteenth century? We know with precision the distinguishing style of the eleventh, and of the thirteenth, and of the fifteenth; but what is the style which is claimed as distinguishing the nineteenth century?" This is a question which I am bound to admit it is extremely difficult to answer; for buildings from every climate under the sun, and of every period since the Pyramids, are candidates for our admiration, and find spectators willing to be pleased. After making every allowance for the charm of variety, and the

monotony of uniformity, especially in street architecture, I cannot but think that the Englishman's claim of right to do what he will with his own, and adopt the style that may seem good in his own eyes, is to be lamented as tending to make our architecture motley, and our buildings incongruous with each other; causing our gables to be of every conceivable angle, and our columns of every imaginable proportion. But so it must be until the republic of taste shall submit to a dictator, or the vision of an eminent writer of the present day shall be realized,—who dreams of some happy future when we shall all, by common consent, agree to build in accordance with the canons of the thirteenth century.

But there is another class of enthusiasts with whose views it is impossible not to sympathise. Full of hope and confidence, they watch day and night, in the full assurance that a new style will one day spring up, fresh and bright from the mint of genius, ready for the current use of the remainder of the nineteenth century.

I have already said enough to show that I can hold out little hope of such a new birth, or that the effort to generate such a phenomenon would be productive of any creditable result. The experience of all ages shows that the fluctuations of style are the result of causes over which man can exercise but slight control. The varieties of soil—of climate—of available materials,—are among the obvious causes of diversity in architectural style: the discovery of a new material, or of a new region,—the requirements of religious, political, or commercial movement,—these have been the chief agents that have given birth to those modifications of style which mark the history of our art.

It may not be unprofitable to occupy a few moments in noting some instances of the operation of these external influences.

The style now known as Byzantine owes its real origin not to the inventive labour of any individual artist, but to the struggles for imperial power in Rome, which led Constantine to establish the seat of his government on the Bosphorus, and so brought Eastern and Western art into such combination,—each imbuing the other with many of its peculiarities,—that this "Tertium quid," the Byzantine style, came into existence.

The style known as that of the Renaissance is traceable not to the mere ingenuity of artists, but to the extraordinary growth of the power of the Turks, who, sweeping before them the degenerate remnants of Roman power, pillaged Constantinople, and scattered its comparatively polished inhabitants over Europe, there to sow the seeds of a taste for Classic literature and art.

The style of architectural decoration called Raddollesque, after the great artist who first practised it, really owes its origin, not to the inventive powers of that master, but to the eager excavations in search of Classical antiquities, which led to the accidental discovery of the Baths of Titus.

Then, if we turn to another class of architectural design, we shall find that castellated structures, with their lofty towers and frowning machicolations, totally altered their style and aspect at about the fifteenth or sixteenth century,—not from the caprices or ingenuity of artists, but because some unknown person had chanced to discover the chemical effects of combining in certain proportions nitre, sulphur, and carbon.

If we descend to times nearer to our own, we shall find like examples of the influence of accidental causes over the fate and fortunes of high art. Napoleon for awhile found it his policy to take Imperial Rome as his model, and to obliterate as far as possible the reminiscences of the ancient regime: hence Percier and Fontaine, following out, not an aesthetic law, but a political necessity, inundated France, and by consequence, Europe, with representations of curule chairs and the lictors' fasces; and at once the florid school of Louis XVI. was superseded by the severer forms of classical antiquity.

If I could safely venture on such tender ground, I might draw further illustration from the ardent revival of Medieval art in our days. An enthusiasm which all the labours of a Carter, a Lysons, a Britton, and the elder

\* See page 116, ante.



Pugin failed to kill, burst, blazed forth at the call, not of archeology, but of a class of religiousists, who sought to lead the eye and the imagination with the materials of a more objective worship. But I have adduced enough to show how secondary a part man's inventive powers seem to have played in bringing about the revolutions that mark the history of art. He may seek to lead, but he finds himself condemned in no small degree to follow: he may catch the favouring eye, but the helm is held by other hands; he may cultivate, and graft, and train, but the seed lies in our own hand.

In saying this, I would not be thought to depreciate individual aspirations to originality, but I would dissuade you from being misled, by the specious cry for something new, to tempt the dangers of that wild and perilous pursuit.

Seek rather to become thorough masters of the styles of our forefathers. Seek rather for that which is good, than for that which is new; and in this search you may perchance fall in with something new which is good.

The genius of our forefathers has conceived two great styles, into which all architecture, as hitherto developed, may be ultimately resolved, the Classic and the Mediæval. These are the two great mines in which you have to work; they are not only not exhausted, but they are practically inexhaustible. These two systems, which, however gradual in their growth, have ever originally intermingled, have now become perfectly distinct and widely different. Yet both are alike true and shapely; both are alike rational and consistent, for both are based, more or less, on the laws of nature, and the rational wants of man.

The spirit of man, which is apt to enter into most of our speculations when the mind is free, enters somewhat too largely into the republic of art; and architects, as well as connoisseurs, are too apt to range themselves as partisans of this or that style. So long as this spirit tends only to promote emulation, and to raise up zealous patrons of art, it is not to be lamented; but when, as such a spirit is apt to do, it narrows our view, or warps our judgment, the effect becomes injurious to the cause of art and of truth.

At all events, you shall find in me no exclusive partiality. I see no reason why both styles should not flourish together in like honour. There is no monopoly of style in the works of nature. She excites our admiration—awes us—delights us, with every possible variety of means, with all the magic of colour, figure, and dimension.

From certain laws, it is true, she never departs: certain principles are with her fixed and immutable, but beyond those of truth and of aptitude, what bounds does she submit to? She loves to resort to a thousand expedients: she is fain to adopt a thousand different modes of doing the same thing, surprisingly varied. Why, then, should we, though humbly following her, as becomes us, at a remote distance, why should we conceive ourselves under any obligation to adopt, as our rule of design, one special system? We see her exulting over the whole material world, importing beauty from endless sources; why should we run in a groove, and hold our own to be the only orthodox line in which true taste can be permitted to run?

Other more suitable occasions may present themselves for a detailed comparison of the two styles just referred to, but there is one point of distinction so broad, and so unquestionable, that I cannot refrain from here adverting to it,—I mean the subordination of horizontal lines to vertical lines in Pointed architecture, and of vertical to horizontal lines in Classic architecture. If we regard the latter in its whole range, from the primeval forts of Egypt, down to the latest vagaries of the Borromini school, we find horizontal lines always dominate: the entablature, in some shape, is scarcely ever wanting; cornice, coping, balustrade, string-course, all have a horizontal tendency; and, when vertical lines are resorted to, there appears to be a perpetual eagerness, as it were, to interrupt their continuity:—whilst, when we turn to Mediæval architecture, from its earliest distinct development to its final extinction, a never-failing tendency to vertical lines and up-

ward extension is manifest. When a constructed necessity occurs for a horizontal feature, it is kept insignificant by faint projection and frequent interruption. Height, in fact, appears to have been the dominant thought of all Mediæval architects.

This striking and fundamental distinction is the chief cause of that impassable line of separation which now exists between these two great systems of design—each so beautiful—yet so different.

I should be ill expressing my own feelings if I were not to urge on you a close, diligent study of both these styles; for both are alike deserving of our attention. The younger style we may pronounce, as compared with the elder, more free and picturesque; more plastic and manageable; more varied and copious in its details; more intimately associated with our habits of six centuries have interwoven it with our religious feelings. On the other hand, the elder style we may regard as more symmetrical, solid, and severe; more polished, and in some of its later phases more applicable to festive and cheerful purposes.

The great aim and object of all style, as such, is to produce certain forcible impressions on the mind, which impressions are usually classed under the two leading heads of the sublime and the beautiful. I shall not launch out into any metaphysical inquiry on the nature and sources of these two wide topics. The field of inquiry has been so often and so ably trodden, that it would be difficult to gather any new flowers in such a search. The subject has been amply discussed: from Longinus to Burke and Alison, the sublime and beautiful have been favourite topics with the highest intellects and the profoundest thinkers.

To such sources, then (if you should have the curiosity to pursue an inquiry from which I cannot promise you very much fruit), I would refer you for the study of the two great instruments by which our art is supposed to acquire its power to affect the spectator's mind.

On some future occasion I may be called upon again to refer to these great qualities of art; but it will be for the philosopher, and not for the artist, to trace out the nature of these affections of the mind: enough for me, the humbler task of pointing out some of the means by which these mental emotions are physically produced.

I hope, however, it may not be held presumptuous in me to say, that amidst the profusion of written learning lavished on these topics, not a few fallacies may occasionally be encountered.

You must, therefore, read with thought and attention, remembering that what is well said is not always truly said. Thus, Alison, too eager to prove his favourite dogma, that there is no such thing as inherent beauty in any object, will advance opinions to which all the refinement of his polished pen will scarcely avail to command our assent. He states, for example, that "what we call beauty in colour is not due to any original or independent beauty in the colours themselves, but to associations we connect with them." When we enter upon the subject of colour, it will, I trust, be clear to you that this is an unfounded theory.

He tells us, too, that "no forms, or species of forms, are themselves originally beautiful; but that their beauty, in all cases, arises from their being expressive to us of some pleasing or affecting qualities." Against this theory we have but to set up the very opposite theory of another writer, that great and original genius, Hogarth, whose whole book is devoted to prove the inherent beauty of one particular line—the one, curvilinear, line of beauty! As if the sources of beauty were not endless! as if a line had an intrinsic beauty independent of the use to which it was applied, or the nature of the object of which it forms the external boundary!

With no greater violation of truth, we might attempt to define the *luc* of beauty, in painting; or the *note* of beauty—in music. Again, it is a prevalent and plausible story, that the true beauty of an object consists solely in its fitness for the purposes for which it is destined.

I readily admit that unfitness for its purpose

is a fundamental defect to which nothing ever can, or ought, to reconcile us.

But to urge that utility is all that is required to impress us with a sense of beauty, would surely be going too far.

In nature, the mother and mistress of all arts, there are many illustrations to which I might appeal.

The legs of a peacock, for instance, are surely more directly useful than its tail; but how unseemly are they, when compared with that gorgeous appendage. No doubt there is great beauty in the fitness of the leg for its purpose, but there is a beauty in its plumage,—of another kind it is true,—yet I conceive more effective in producing lively pleasure in those who contemplate it. The beauty of the leg speaks rather to our reason than to our feelings, whilst that of its plumage needs no exercise of reason to command our admiration. It is that latter kind of beauty which the Germans, borrowing from Greek sources, have taught us to call *æsthetic*; and which, I think, needs your chief study; for it is a kind of beauty far more difficult to understand, or define, or hold in our intellectual grasp. The beauty of fitness may be measured and weighed by the easy standard of common sense: the other, more subtle—more immaterial—may be perceived, and yet not measured, or even explained. Like a wreath of mist—the rainbow—the mirage, or the northern aurora—it is a reality—it is there, before us, in a thousand forms of loveliness, yet the vision eludes that closer scrutiny we desire, and refuses to submit to the test of a stricter investigation.

Unfortunately for the teacher of art, it is far more easy to say what is beautiful, than to say wherein that beauty consists. A sense of what is beautiful in the physical world operates like the conscience in the moral world, which impels or deters, often without the intervention of reason. We often, perhaps, indeed, usually, perceive what is morally right or wrong at once and without any process of examination. So the recognition of beauty is an intuitive result, at which we ought to be able to arrive, before we have formed any definite idea of the cause, or have sought to investigate the motives upon which our judgment is founded.

A true student, however, will not rest satisfied with this vague impression, but will endeavour to search out its causes; and whatever may have been the errors into which men of genius may have been misled by their confident reliance on some favourite theory, the student should be thankful for the hints which philosophical inquiries have afforded to aid them in their search.

It is of course an essential part of the task of a lecturer on our art, to bring before your notice examples of the highest qualities of the art, practically presented to us in the masterpieces which time has spared. Our art may boast a proud pre-eminence among the sister arts, in its capacity to present such examples. In addition to the durability of its monuments, it has been truly said of architecture, that she alone is able to excite emotions similar to those excited by the contemplation of the great works of nature. If such be true, it is, indeed, a very noble incentive to genius, that it should be permitted to the architect so to distribute and deal with mere inert matter, with fragments of rock or pieces of burnt clay, and so to pile them up as to make them the source of a high intellectual pleasure.

Besides the two primary qualities of sublimity and beauty, a claim has been set up for a third attribute, or quality, as worthy to be classed with them, as forming one of the great aims of art, though I am by no means satisfied of its claim to be treated on a footing of equality with them. I allude to the picturesque—a word of modern Italian origin, designating that which is well suited for the painter's art. I believe it was Uvedale Price who first attempted to define distinctly the attributes of the picturesque, and claim for it an independent position.

Picturesqueness seems to be a term, in our art at least, more applicable to a combination of forms than to any one form. A single object, as a cornice or a column, may be said to be beautiful, or even sublime, but it can hardly be



said to be picturesque. There must be a variety of lines, or of tints, or of chiaroscuro, in order to constitute the true picturesque. One of the most eminently picturesque single objects I know is the Pharos at Genoa; but even here the structure itself can scarcely be so designated: it is its position, its substructure, and its accessories, which impress it with that peculiar character.

It is this dependence of the picturesque on a happy combination or grouping of forms, rather than on the artful design of any one form, which renders it a dangerous object of pursuit with the architect. It can rarely be the result of premeditation: it should come unbidden. Certainly the happiest and most charming instances of this quality of art have been the result of accident. Perhaps the castles of the Middle Ages, especially those of the thirteenth and fourteenth centuries, abound more than any other class of buildings in the ingredients of the picturesque. Which of us, for example, could ascend the long flight of steps leading to the higher and inner gateway of the great castellated monastery of St. Michel, near Avranches, without fancying that some sublime genius, pregnant with all the poetry of architecture, had designed that gate and moulded its scenic turrets with no other object than to fill the spectator with awe? Yet we may be sure that nothing could have been more remote from the mind of these builders than to make a picture. The barbarian, the keep, the menacing machicolation, the deeply-recessed archway, the varied outline, the broad chiaroscuro, are all features happily incidental to the *military wants* and exigencies of those times, and yet who is so utterly and almost necessarily regardless of the picturesque as the engineer?

Even in domestic architecture, if we examine any highly picturesque buildings—Haddon Hall, for example,—we shall not fail to find that the agreeable effects in which it abounds are by no means the offspring of studied irregularity, or of any finesse of art. The embayed window is thrown out just where the view invites one. The fireplace projects in bold relief, and its smoke-tunnel is carried quaintly off to one side, simply because the ease and comfort of the occupant required that these objects should be placed in these situations. The result happens to be highly picturesque, but it is so, as it were, by accident. There is no reason whatever to doubt the ability of the old builders fully to appreciate the effect of all their arrangements; but there was no straining after that effect: a bold and almost careless freedom of design characterised all their works.

I need scarcely repeat that a laboured imitation of these happy results would be sure to lead to failure and disappointment.

I do not counsel the young practitioner to disregard those superficial arts of design which please the eye; but it should be his chief aim and first consideration so to do his work that each part should answer its purpose thoroughly well; and it is very doubtful whether he can adopt any process better calculated to secure a pleasing result.

Before quitting these general views, I think it incumbent on me to advert to one of the dogmas of our art, the soundness of which is undeniable, but which is attended with some difficulties.

Painting and sculpture are so fortunate as to have in nature a standard of excellence for ever before them, a frequent recurrence to which keeps them on their true course.

But architecture is less able to draw her inspirations from that pure source: her wants are too artificial: she is too dependent on the requirements of man to enable her to look implicitly up to nature.

But architecture still has a ruling principle, which is truth. From Vitruvius to Pugin this has ever been taught, although in practice it has often been grievously disregarded.

There is an honest simplicity, a plain manliness, about truth, which wins our regard, whether in ethics or aesthetics. But whilst we recognise truthfulness as a cardinal virtue in our art, as well as in morals, we must take care not to allow that analogy to carry us too far.

We often meet in the practice of our art with necessities utterly inconsistent with beauty,—

hard lines, unsightly angles, heavy, graceless forms, imposed on us by structural requirements. It would be a mischievous error to suppose that, because in our social conduct there should be no deception or concealment whatever, we are therefore bound to expose to view these mechanical deformities from which we cannot escape; whilst to depart from the form that is mechanically right and expedient, only to make it more agreeable to the eye, would be a still graver error.

That there should be a politic concealment sometimes studiously resorted to: some ingenious art practised occasionally, seems, therefore, an unavoidable condition of our calling. Even the painter, who has both subject and materials more completely under control, cannot with safety trust entirely and exclusively to the mere correctness of his transcript. If it were so, photography would take a higher place in the rank of fine art than, with all its wonders, it is ever likely to win.

In the most natural schools, nature is not, and never has been, copied with a stern adherence to exact truth. The simplest leaf requires treatment to fit it for the purposes of decoration, and treatment implies some modification of form or of colour,—in short, some departure from nature.

Nearly allied to this is another principle of our art, which, although by no means universally acted upon, justly claims our most respectful submission. We should have a care how we design anything which does not serve some useful purpose.

I do not mean that mere utility would justify a deformity; nor do I mean that every architectural feature in our design should be a structural necessity, nor even of structural utility; but that, although it may not be to add strength, or to afford support, it should at least have its appropriate purpose: a valid reason should be assignable for it; some good end must be sought to be attained by it; some offensive angle or feature to be removed; some unsightly blank to be relieved; some monotony of line to be broken; some needed light or shadow to be introduced; some discord in form or colour to be allayed.

Doubtless it is a maxim worthy of all acceptance, that utility is one of the most important elements of beauty; yet those who recognise architecture as a fine art will admit that simple bare utility is not the sole aim of our art. This qualification of the really valuable and important principle of usefulness will, I fear, scarcely meet with general sympathy: the utilitarian current sets in so strongly in some minds that it will nigh carries all other considerations before it.

It is enough to say that neither poetry, nor music, nor letters, nor any of the arts which embellish life, can lean for support on that class of intellect which refuses to assign to them a footing within the domain of social usefulness.

In the estimate of such minds architecture must be content to take rank with boot or buttonmaking.

With all respect for so inestimable a guide in the common business of life as utility, I will venture to encourage you by pointing out to you the prodigal munificence which has arrayed the lily of the field, which neither toils nor spins, in a raiment of surpassing glory; which has given to the birds of the air not merely their needful feathers, but a plumage of infinite beauty; has lavished on the shellfish of the deep seas tints which no art can reproduce, and the pearl which princes are proud to wear. Nay, virtue itself has found a fit companion in the beauty of the human form.

"Gratior pulchro veniens in corpore Virtus."

Why, then, should architecture be forbidden to indulge, moderately and wisely, in some graceful inutilities?

It is the fear of excess and abuse that alone renders this indulgence dangerous; and to arm the student against such danger is one of the foremost duties of the art-teacher.

Truthfulness and usefulness must indeed be taken as our guides in the highway along which we may travel unwarily and without danger. It is when we diverge into the by-paths and inviting lanes of mere æstheticism that we must need to be on our guard against failure.

I have now detained you quite long enough on these general views. Our art is a peculiarly practical one, and needs to be dealt with in details rather than in generalities.

The mind of the true student is soon impatient at these distant views, and he longs for a closer, clearer, and more practical survey of his subject. I shall therefore now *close* my present discourse by addressing to the student a few parting words.

You are set out on a pilgrimage which will need much preparation and a large fund of enthusiasm to cheer you on your way. Set out on it with a conviction that an abundant store of knowledge is the best provision you can make for the journey.

Besides obtaining a thorough mastery over your own art, cultivate an acquaintance with the sister arts. It will be wholesome to bear in your memory the very intimate relation which subsists between all the departments of high art which find their home within these walls. Together they will ever flourish or decay. Each needs the aid of the other. It is for Architecture to build the sanctuary: it is for Painting and Sculpture to spread out their treasures for its perfection. It is for them to give life to its inanimate walls by peopling them with the story of past times; by refreshing us with the charms of natural scenery, and by making them the depositories of those memorials which link the living with the dead.

Above all things, in your pilgrimage, be especially anxious to dismiss and discard for ever from your minds all petty feelings of personal jealousy. Pull at no man's skirt: outrun him, if you can, in the race of honourable rivalry; but, depend upon it, your progress will be impeded, not promoted, by the indulgence of professional jealousy or censorious criticism. Let not your spirit be weighed down, nor your course turned aside, by any such sinister, unworthy objects.

The rivalry in labour is the best and only useful rivalry. You will find the buoyancy of self-reliance wonderfully assisted by that lightness of heart, and cheerfulness of spirit, which never fail to accompany an habitual goodwill towards others.

#### A BRIEF MEMOIR OF THE LATE ALEXIS DE CHATEAUNEUF, ARCHITECT.\*

ALEXIS DE CHATEAUNEUF was born 18th of February, 1799, at Hamburg, where his father, one of the old French nobility, had taken shelter at the Revolution, and married. His only son, the subject of this memoir, after completing his school education, was, by his own desire, afforded an opportunity of learning the practical part of his future profession in the workshop of a builder, while he devoted his spare hours to the study of mathematics. In 1816 he acquired the rudiments under M. Wimmel, town architect, and in the following year went to Paris to pursue his studies at the Academy, but finding that he did not derive the advantages expected, he removed to Karlsruhe, where he applied himself assiduously for three years in the atelier of Oberbaurath Weinbaur.

Having thus thoroughly grounded himself in the elementary knowledge of his art, he commenced, in 1821, a tour through the south of Germany and Austria to Italy; where he visited all the most important remains of antiquity, and devoted himself to their study, remaining in Rome above a whole year.

In 1823 he returned to his native city, and commenced his professional career by carrying out the town residences of Syndic Sieveking, and his brother, the senator, besides minor works. He also spent much time at the neighbouring Hanse town, Lübeck, the interesting old buildings of which he appears to have studied very carefully.

In 1828 he visited England and France, and part of Germany. On his return he devoted and carried out the Town Post-office, the country seat of the Syndic Sieveking, and other works. In the first-named building, which abuts upon one of the principal canals, he made a bold experiment by omitting the foundation of piles, universally used in the old town, and substituting an arrangement for floating the structure on the soft boggy ground. This, though not altogether successful, at least shows that M. de Chateaneuf was not content to plod on in the beaten track, but that he endeavoured to adopt all modern advances in scientific construction.

\* Read at the ordinary general meeting of the Royal Institute of British Architects, on the 20th ult. by Mr. Charles Fowler, Jun.



In 1832 he again visited Italy, and soon after his return (about 1835), while the impressions of his visit to that classic ground were fresh, he designed the residence of Dr. Abendroth, an eminent connoisseur and liberal patron of the arts. This building, although not on a very large scale, may be considered his chief work, as it affords evidence of great skill in adapting a very effective arrangement of plan to an irregular site, and of refined taste in combining Greek purity of style with the structural forms of Italian Renaissance. In the interior especially, every part, even the smallest detail, bears the impress of a master hand.

In the years 1838 and 1839, M. de Chateauneuf passed much time in England, engaged, in conjunction with Mr. Mee, upon a competition design for rebuilding the Royal Exchange, to which the second premium was subsequently awarded. He was also, I believe, assisted by the same gentleman in the publication of a 4to. work, "Architectura Domestica," London, 1839. To another small work, "The Country House," by Lady Mary Fox, published in 1843, he contributed some excellent designs for a country mansion. The letters which accompany these designs contain many remarks showing how carefully he had studied the general principles of his art, and the correctness of the views he entertained of the vexed question of style in architecture.

The great fire, which, in May, 1842, destroyed a large portion of the old town of Hamburg, opened a wide field for the labours of the architect, and it may be safely affirmed that no one strove more assiduously or successfully than M. de Chateauneuf to carry out the restoration of his native city. A commission having been appointed to remodel the plan of the destroyed quarter, he was nominated president, and many of the important improvements effected were originated by him; among which may be specially mentioned the arched porticoes by the side of the Alster Canal, and those flanking the square of the Exchange: the former were also subsequently carried out from his detailed plans.

From this time to about the end of the year 1850, M. de Chateauneuf was largely engaged in the erection of numerous buildings, both public and private; among them the rebuilding the great Church of St. Peter's, in which he was associated with Professor Petersenfeldt, the residences for the clergy, and other buildings connected with this church, the new post-office, the large warehouses, with residences for Messrs. Schulte and Schenmann and for Mr. Davenport, the Hall of the Tailors' Company, a large warehouse for the Cabinetmakers' Company, and numerous private houses in the town and suburbs. Many of these buildings show great originality in arrangement, and particularly in the details of the mouldings and enrichments, for which M. de Chateauneuf always made numerous studies. The beautiful details of the English Medieval architecture appear to have made a strong impression upon him, the influence of which may be clearly traced in the works executed subsequently to his visits to this country.

In 1846 he married a Norwegian lady of Christiana, and, on paying a visit to that city, the restoration of the "Church of The Redeemer" was entrusted to him: he was also employed to prepare a design for another church, which was subsequently carried out from his plans by a former pupil. Although still in the prime of life, he began now to feel the effects of constant application upon his naturally earnest and somewhat excitable temperament, which, combined with some domestic afflictions, caused his health visibly to decline. His mind, however, another great effort, and produced one of his grandest architectural conceptions in the design submitted in competition for the Storting Haus, at Christiana, which, however, was not carried out, as the estimated cost exceeded the proposed expenditure. This was his last work, and it formed a worthy termination to his professional labours.

In 1850 it was found advisable to place him under the care of Professor Sessen, in a private asylum near Kiel, which had been erected from his designs: he subsequently, however, returned to his native city, where he died on the 31st of December, 1853.

Throughout his life his energetic character led him to feel a lively interest in all public affairs, and he took an active and leading part in the local Kunstverein (Art-Union), and the Society for encouraging Arts and Manufactures: he was also an honorary and corresponding member of the Royal Institute of British Architects. He was thoroughly devoted to his profession, and, an accomplished artist himself, he took great delight in the society of his brethren of all classes, whom he frequently consulted on the subject of his principal designs, thus promoting that reciprocity of action so desirable between the sister arts. Those of foreign countries always met with the kindest attention and hospitality at his hands, and he had thus procured the warm attachment of a large circle of friends, by whom his premature death will long be regretted.

## CIVIL CONSTRUCTION IN THE PARIS EXHIBITION.

RETURNING to Captain Fowke's interesting report on civil construction, as represented in the French Exhibition, we find some particulars of M. Coignet's concrete, used by him in the construction of a house, near St. Denis, and which has excited much interest.

"M. Coignet has, as the results of a series of experiments, given us the recipes for making two kinds of concrete suitable for house building, which he distinguishes by the epithets of economic concrete, and hard and solid concrete. The first is composed of—

Sand, gravel, and pebbles .....	7 parts.
Argillaceous earth .....	3 parts.
Quick lime .....	1 part.

This concrete, he says, properly beaten up and mixed, has given walls nearly as hard as the common soft rubble masonry used in Paris: in price it competes with ordinary pisé work, over which, however, it has the advantage of being able to resist moisture.

The hard concrete is composed of—

Sand, gravel, and pebbles .....	8 parts.
Common earth, burnt and powdered .....	1 part.
Cinders, powdered .....	1 part.
Unslaked hydraulic lime .....	1½ part.

The materials to be perfectly beaten up together. Their mixture gives a concrete which sets almost immediately, and becomes in a few days extremely hard and solid, which property may be still further increased by the addition of a small quantity, say one part, of cement; and the price, depending principally on that of the time and labour, was, in Paris, under unfavourable circumstances, 3fd. to 4d. per cubic foot; with more favourable conditions, 2d. per cubic foot. A house, three stories in height, 65 feet by 45 feet, standing on a terrace, having a perpendicular retaining wall 200 feet in length and 20 feet high, has been actually constructed, with every part, including foundations, vaults of cellars, retaining wall, all walls exterior and interior, without exception, of this hard concrete (Beton Dur), as well as the cornice, mouldings, string courses, balustrades, and parapets, and without bond iron, lintels, or wood throughout: the use of plaster in the interior is also avoided, as the concrete takes a surface sufficiently fine for papering. The retaining wall measures 22,750 cubic feet of masonry, and constructed of Paris hard rubble (meulière), or ashlar, it would have cost from 1,200l. to 1,500l. and in common soft rubble (moellons), and stone coping, from 650l. to 750l.: on M. Coignet's principle it has cost—

22,750 cubic feet of concrete laid at 2d. per cubic foot .....	£190
Balustrade in moulded concrete .....	18
Total .....	£208

The entire house, M. Coignet says, only cost 400l. and he further states that to build one similar of ashlar, it would have cost probably five times that amount. The same person has also constructed a chemical manufactory at St. Denis, in which walls, drains, and water-pipes are all of this material, as also the foundation of a 30-horse engine. If all these statements as to cost, &c. are correct, the material of M. Coignet would appear worthy of being further inquired into, as it would seem to afford a means of construction at a price hitherto unheard of."

In France, iron is being extensively used in the place of wood in private residences, being rolled at once into form for girders and beams. Captain Fowke gives a description of various sorts of floors used, to which we will confine ourselves:—

"The employment of rolled iron in girders and joists for floors, which is almost unknown in England, and which is now very largely adopted in Paris, owes its origin to the circumstance of a very extensively organised strike of carpenters which took place in that city in the year 1846, before which time iron was, even to a greater extent than in this country, deterred by its price from entering into competition with wood in the construction of buildings and private dwellings. In order to extricate themselves from the position in which they were thus placed by such an event, and with a view of preventing its recurrence for the future, the Parisian architects and builders turned their attention to the substitution of iron for wood, both in the roofs and also in the flooring of buildings, and more particularly to the best means of reducing the weight and cost of the material, which, as stated above, formed the greatest obstacle to its general employment.

Much of the difficulty experienced by the French architects in perfecting this new construction was occasioned by the fact that, according to the custom which obtained at the time, the iron was transmitted from the manufacturer to the builder through the in-

tervention of a dealer, who was totally ignorant and careless, both of the requirements of the latter or of the capabilities of the former to meet those requirements; and it was not until the manufacturer and builder were brought directly into communication that the best forms of iron were made, especially for the purposes of construction, forming what are called in France "fers speciaux."

The cross-shaped girder of M. Bleuze being, as might have been expected, weak in proportion to its weight, recourse was had to a girder which was first adopted in the construction of the St. Germain railway station, and which was a slight modification of the common I rail, but which being made a great deal too heavy, fell to the ground from its consequent high price; and it was not till the month of February, 1849, that the I girder, as now used, was produced, and first applied in Paris in the flooring of a house, No. 18, in the Boulevard des Filles du Calvaire, for a bearing of 18 feet. A number of experiments were instituted by M. Zoré, for the purpose of obtaining the best possible section for these new rolled iron girders, which resulted, first, in proving the uselessness of a third flange which had been introduced by some makers, as in the case of M. Bleuze's girder, at the centre or neutral axis of the I girder, and afterwards in the gradual development of what are now considered in Paris to be the best and most practical forms of rolled iron girder, and which are described below.

The principle of the substitution of rolled iron for wood having now been established, numerous modifications were proposed in the manner of its application and arrangement, as to the ties, struts, and connection with the remaining parts of the floor and ceiling, for both which a variety of methods of construction have been from time to time adopted, and of which some of what are considered the best forms are here described.

The first (figs. 1, 2, and 3) has the girders of I shape, slightly arched, having a rise of '06 inches in each foot, placed at a distance of 3 feet 3 inches from centre to centre, and connected at intervals of 3 feet 3 inches throughout their length by ties of flat bar iron on edge, resting on the lower flange of the girder, and fastened one to another either by wrought-iron straps or cast-iron chairs. Upon these ties are placed square bars, three between each pair of girders, running parallel to them from wall to wall, into which their ends, turned down, are built. The girders are further tied to the walls at each end by iron straps fastened to vertical iron bolts in the wall, and in a lateral direction by the ends of the cross ties being also built in, in the same way as the longitudinal bars. On the iron framework so formed the thick plaster ceiling is formed without wooden laths, a wooden platform being held under it while the plaster is thrown in from above, and removed after it has firmly set. Small square wooden joists are laid over the girders, and the wooden floor laid on these in the ordinary way.

In the second method described (figs. 4, 5, and 6), the I girders are also placed at from 3 feet to 3 feet 3 inches from centre to centre, and are tied, or rather shuttled, at intervals of 1 foot, by small square bars, reaching from girder to girder, and resting on the lower flange, having their ends turned up in an elbow the height of the web of the girder, and kept upright merely by the plaster with which they are filled in: this, as will be seen at once, is the most simple of these methods, but it is deficient in the ties with which the others are strengthened.

The third method (figs. 7, 8, and 9) differs from the first merely in the manner in which the cross-ties are connected together, being a simplification of the chair already described.

The fourth method (figs. 10, 11, and 12) is that which has generally had the preference among the principal builders: in it the girders are tied together in pairs, at 3 feet intervals, by round iron bolts  $\frac{1}{2}$  of an inch in diameter, passing through holes at the neutral axis of the girder, and nutted up at each end. Small square bars are hung on to these tie-bolts by hooks at their extremities, of sufficient length to permit them to hang nearly level with the bottom of the girders, to which they are parallel, as described in the first method, the description of the floor and ceiling of which answer for all four methods.

In speaking of the gradual development and improvement in form of the rolled iron girder, an allusion was made to forms now in use in Paris which are considered superior to the I section commonly employed, of which the four methods above are applications. These were exhibited by M. Zoré along with the collection of hollow bricks by M. Borie, and were of two forms, called by the inventor "fer tubulaire" and "fer à coulisse," the first being, perhaps, more strictly speaking, a girder, and the latter a joist, where only a single floor is required.

The "fer tubulaire" (figs. 13 and 14) may be de-



CIVIL CONSTRUCTION IN THE PARIS EXHIBITION.—FLOORS.

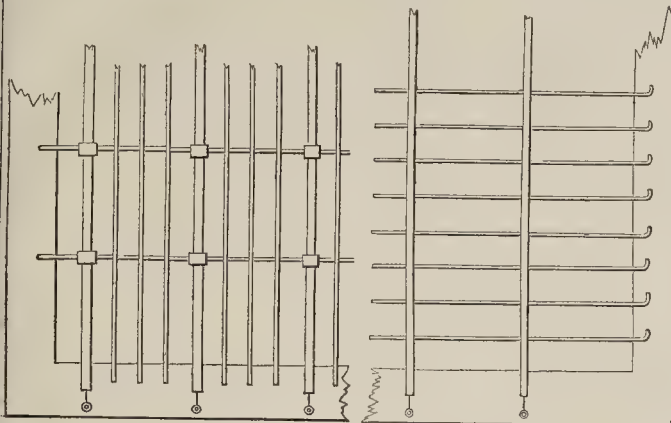


FIG. 1.

FIG. 4.

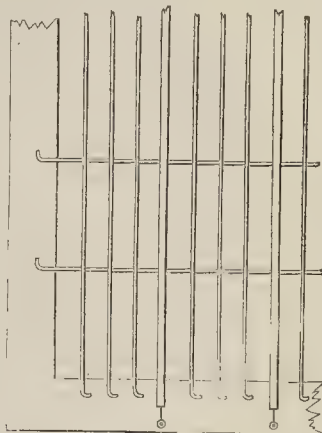


FIG. 7.

SECTION ACROSS THE GIRDERS.

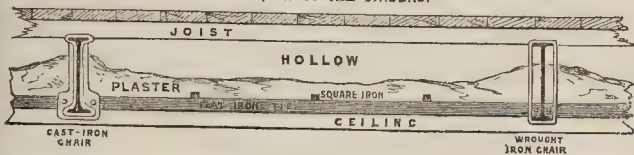


FIG. 2.

SECTION ACROSS GIRDERS.

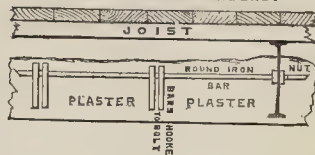


FIG. 11.

LONGITUDINAL SECTION

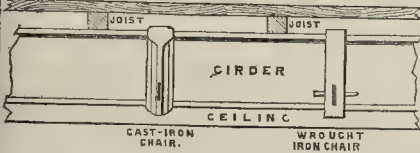


FIG. 3.

SECTION ACROSS GIRDERS.

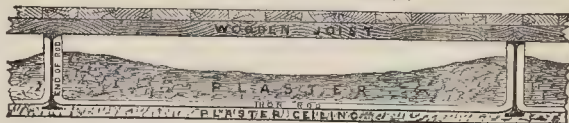


FIG. 5.

SECTION ACROSS GIRDERS.

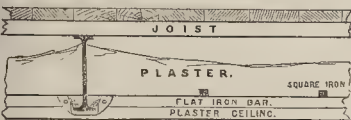


FIG. 8.

SECTION ALONG GIRDERS.



FIG. 9.

SECTION ALONG GIRDERS

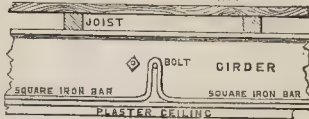


FIG. 12.

SECTION ALONG GIRDERS

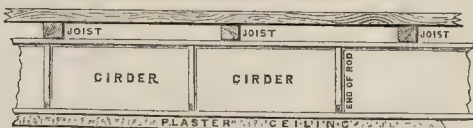


FIG. 6.

SECTION ACROSS GIRDERS.



FIG. 13.

LONGITUDINAL SECTION.  
SHEWING WOODEN JOIST. SHEWING JOIST OF FER A COULIRSE.



FIG. 14.

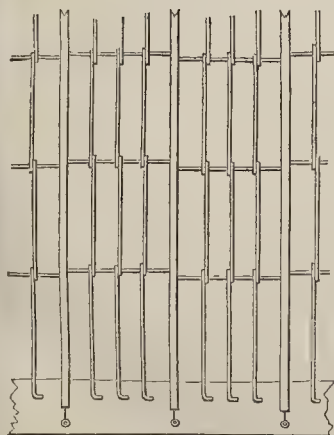


FIG. 10.



scribed as being in section of the form of a capital A without the small triangular top; those exhibited are said to be for a bearing of 20 feet, and are of the following dimensions, viz.—4½ inches high, 2½ inches wide at top, 4 inches wide at bottom, exclusive of a small flange of ½ inch projection on each side. The sides of the girder are ⅞ of an inch in thickness, and the top and flanges ⅞ in. These girders are placed at a distance apart of 2 feet 8 inches from centre to centre, and are tied together at intervals of 3 feet by flat bar iron ties of ½ inch x ⅞ inch bolted to the bottom of the flanges.

#### ON INDURATING AND PRESERVING STONEWORK.\*

THE decay and preservation of stone being in a great measure a chemical question, it is very necessary that an architect should be acquainted both with the first principles of the chemical action of the air in the disintegration of the different stones, and with those which should guide him in forming a just opinion on the various processes suggested for their preservation; so that he may neither be led away by the specious statements of interested parties, nor induced to pass a hasty condemnation on all alike, without either understanding their mode of action, or testing them by experiments of a decisive and satisfactory character.

The destructive action of the atmosphere upon the various kinds of building stones may be classified under two heads. In all cases it is the solvent action of water and carbonic acid which effects the decay. These agents affect stones in different ways, according to their composition, which, however, may generally be referred to one of two classes, viz. the earthy carbonates, and the earthy and alkaline silicates.

Under the first named may be included the larger number of common building stones, the limestones and dolomites of the "oolitic" and "magnesian limestone formations," which are chiefly carbonates of lime and magnesia, and also the sandstones, for in these the sand is agglutinated by carbonate of lime.

These neutral carbonates of lime and magnesia are insoluble in pure water, and would remain entirely unacted upon if the atmosphere consisted only of pure nitrogen, oxygen, and aqueous vapour. But it always contains carbonic acid, which being soluble in water is carried down by the rain, and these earthy carbonates are dissolved in an aqueous solution of this acid; moreover, whenever rain falls upon a surface of carbonate of lime ( $\text{CaO}, \text{CO}_2$ ), a portion of it is dissolved in the form of acid, or bicarbonate of lime ( $\text{CaO}, \text{CO}_2, \text{H}_2\text{O}, \text{CO}_2$ ), hence the presence of considerable quantities of carbonate of lime in spring and river waters passing through chalky and limestone districts. If, however, the temperature of such solutions be raised, or if they be long exposed to the air, the carbonic acid is evaporated and the carbonate of lime precipitated: it is thus that incrustations of nature's objects met with in the neighbourhood of hot springs are formed. A curious illustration of this fact I have also observed when examining the action of the weather on the south-western side of the church of St. Luke, Chelsea: wherever there is a sloping ledge the rain, in running down, has dissolved a certain quantity of carbonate of lime in the form of bicarbonate of lime at the edge it has collected in drops, or has been carried off by capillary attraction, and being prevented by the same force from falling to the ground, it has remained a sufficient time exposed to the air for the carbonic acid to evaporate, and the carbonate of lime to be deposited in droplets or miniature stalactites: this is doubtless a common phenomenon, which has been frequently observed, but it is an interesting proof of the accuracy of our views respecting the action of rainwater upon such stones, for there we have the very same carbonate of lime which has been dissolved out of the edifice in one place, deposited in another.

The granites, porphyries, clay slates and such minerals, are acted upon by the atmosphere in a different way: the general nature of the process may, however, be well illustrated in the case of granite, a rock which being often very hard is popularly deemed indestructible; but that such is far from being the case is obvious in the weather-worn crumbling surfaces of the masses of granitic rock on our own coasts, as in Cornwall. The action of water and carbonic acid on granite is different in nature and slower, but as certainly destructive ultimately as in the case of the limestones.

The composition of granite, or at least of felspar its largest constituent, may be thus represented ( $\text{K}_2\text{O}, \text{SO}_3; \text{Al}_2; \text{O}_2; \text{SiO}_2$ ), that is to say, a double silicate of potash, and alumina; and when carbonic acid, dissolved in water, is brought repeatedly in contact with it, the potash is dissolved out from the silicate of potash in the form of carbonate of potash,

leaving the silica in a flocculent partially soluble state, the silicate of alumina, though unacted upon, is left in a disintegrated state: so that by the mere agency of air and rain-water the massive rock crumbles to powder.

The foregoing remarks apply to the action of the pure air of the open country upon stones. These are destructive influences to which all buildings, even in the purest and most serene atmosphere, are constantly exposed, and from which no stone, however good and well selected, can be free. But in large towns, where enormous quantities of coal are burnt, the stone is subjected to far more adverse influences: the particles of carbonaceous matter (soot) constantly floating about in such an atmosphere, are carried down by the rain, deposited on the stone, and there cemented by the carbonate of lime which is simultaneously precipitated, in consequence of evaporation from the rainwater in which it had been dissolved or other parts of the building in the form of bicarbonate. Thus the buildings become covered with a funereal encrustation, producing a striking contrast between the public buildings of our metropolis and those of Paris and other continental towns where wood is the common fuel. This coating, though marring the beauty of the architecture, conduces to a certain extent to the preservation of the stone by forming a layer impervious to water, and thus preserves the subjacent carbonate of lime from further contact with the acid solution. Sometimes, however, moisture penetrates through cracks in the surface layer and permeates behind it; then dry or frosty weather setting in, the coating becomes loosened, and whole masses fall off at a time: the result is necessarily very destructive, but it is one which may be frequently observed. Moreover, the atmosphere of these coal-consuming districts contains, besides carbonic acid, also sulphurous and sulphuric acids, which act upon carbonate of lime much more energetically, and in a more injurious manner than the carbonic acid.

Some stones being more readily acted upon by these agencies than others, on account of peculiarities in their physical structure, with which the architect can only become familiar by practice, it is obvious that the utmost caution should be exercised in the choice of stone for public buildings; nevertheless, since even the best selected stones are liable, and must ultimately yield, to the same destructive agencies, the difference being only one of degree, it is but natural that attention should have long since been drawn to methods for preventing the mischief; many of which, to judge on chemical principles, merit the serious attention of the architect, and the most unprejudiced trials.

They may be divided into two essentially distinct classes. In the one the object is to cover the stone with a layer of some material, organic or inorganic, vegetable or mineral, having no chemical action on the stone itself, but serving only to cover it with a surface which, not being affected by or having a repulsive action towards water, shall preserve the subjacent stone from the contact of the acid solution, just as wood is preserved by a coating of paint. Although these methods vary much in detail, they have all the same object, and are all more or less useful, though less valuable than the second-class of processes to be hereafter alluded to.

The most valuable method is to cover the building with a coating of paint, as in the case of the new facade of Buckingham Palace. This is obviously better than allowing the stone to decay, but it is a very temporary expedient, and liable to the objection, that, as the paint is made of lead, it speedily becomes black from the sulphuretted hydrogen of the atmosphere of an English town.

Many patents have been taken out, to which Mr. Smith alluded at length in his paper, read here on the 1st ult. which consist in soaking the stone in, or covering its surface with, a layer of an oily body of some kind: motives of cheapness and convenience may, to a certain extent, influence the selection. These are all valuable for a certain length of time. So long as the oily coating does not itself decay, it must afford important protection to the stone beneath; and no doubt there are many here present who can testify to the practical value of one or other of the processes of this class which have been suggested. But it must not be forgotten that all vegetable bodies—indeed, organic compounds generally—are subject to a process of decay quite different in character from those to which I have before alluded. All these bodies, which consist essentially of carbon and hydrogen, are combustible, and, when burnt, are converted into carbonic acid and water (the compounds of these two elements with oxygen—viz.  $\text{CO}_2$ , and  $\text{H}_2\text{O}$ ), and by long exposure to the air, the very same result ensues, only more slowly; so that in process of time they entirely disappear, being converted into invisible gases, and no trace of them remaining. Their action, can therefore be but temporary, their durability being,

in fact, considerably less than that of the stone—as much so, perhaps, as wood is less lasting than stone. They can obviously only be of value whilst they last, and their existence is but ephemeral.

Besides, in selecting the oils, it should be remembered that there are two classes—one distinguished as *drying*, the other as *non-drying*; and it is the former which are of the greatest value. These drying-oils (oil of turpentine and linseed-oil are common examples), on exposure to the air, absorb oxygen, and are converted into resins, which are more durable, and form a more impervious coating than the oils themselves.

It has been already mentioned that all the methods which consist in coating the stone with organic mixtures, composed of oils, resins, fats, &c. though more or less valuable, are but temporary expedients compared with others to be subsequently mentioned.

Under this first class may be included those of "The Indurated Stone Company" (Frauquoy Teychenne), and of "The London Stone Hardening and Preserving Company" (Mr. Barrett); Mr. Henry Clinton Page's Patent; and lastly, Mr. John Benjamin Daines's.

Having recently seen the trials of Mr. Daines's process at the Houses of Parliament, I may be allowed to make a few remarks specially in reference to it. It differs in no essential respect from the others of the same class, consisting essentially in coating the stone with linseed-oil, to enable it to resist the action of moisture. The only variation from the others is in treating the stone with a solution of sulphate of zinc or of alum, previously to applying the oil, and also in dissolving in the oil sulphur or liver of sulphur.

I am at a loss to understand what advantage is sought by this modification, and in what the superiority of this over any of the other processes for coating the stone with a layer of oily or resinous matter consists, or, indeed, why it is preferable to paint, especially if zinc instead of lead colours be used. But it certainly has many serious disadvantages; for in the first place, the action of the sulphur, whether in the free state or as liver of sulphur, upon either the impurities in the sulphate of zinc applied, or on the iron in the stone, produces a zinc sulphide, which gradually darkens the colour of the stone, and will doubtless soon render it almost black; a result certainly anything but desirable in London, where the atmosphere generally performs this office but too rapidly. Secondly, it is rather a dangerous experiment to introduce into the stone an element like sulphur, which, by oxidation, is gradually converted into sulphurous and sulphuric acids,—the very acids which, as products of the combustion of coal, render the atmosphere of London and other large towns so much more injurious to stone than that of the open country: it is, in fact, sowing within the stone the prolific seeds of its destruction.

The second class into which I have divided the various processes embraces those the object of which is, either to convert the surface of the stone itself into a chemical compound less readily affected by an aqueous solution of carbonic acid (rain-water), than the original stone, or to deposit a less destructive chemical compound in or upon it.

The first suggestion of this kind, and, I believe, after all the most valuable, is that made by Professor Fuchs, of Munich, for the preservation of frescoes, paintings, and successfully applied by Kaulbach (of which an example exists in the Museum of Practical Geology). It was subsequently employed for the preservation of ordinary stone erections by M. Kuhlmann, of Paris.\* It consists in washing the stone surface after erection with a solution of silicate of soda ( $\text{NaO}, \text{SiO}_2$ ); but, in order that the process may be successful, its mode of action should be understood, and all the necessary precautions should be adopted in carrying it out. When the solution of silicate of soda ( $\text{NaO}, \text{SiO}_2$ ) is applied to a limestone ( $\text{CaO}, \text{CO}_2$ ), a double decomposition takes place,—silicate of lime ( $\text{CaO}, \text{SiO}_2$ ) and carbonate of soda ( $\text{NaO}, \text{CO}_2$ ) are formed: that this is really its mode of action, I have satisfied myself by experiments made on pieces of stone treated in this manner by my friend, Mr. Henry Burnell. The establishment of this fact is one of considerable importance as affecting the theory of its action, as it proves that we convert the carbonate of lime, which is so readily acted upon by an aqueous solution of carbonic acid, into one of the most insoluble of mineral bodies,—the silicate of lime; and, moreover, which is scarcely, if at all, affected by carbonic acid, and this without in the least degree injuring the structure of the surface.

It is true that at the same time another action goes on: carbonic acid is capable of decomposing silicate of soda, as I mentioned when speaking of the disintegration of granite, and by this means free silica is likewise deposited on the surface and in the pores of the stones: this silica, thus deposited, is more or

\* Read by Mr. Henry M. Wilt, F.G.S. Asst. Chemist, Government School of Mines, at the ordinary general meeting of the Royal Institute of British Architects, on the 23rd January.

\* See "Mémoire sur l'Application des Silicates Alcalins Solubles au durcissement des Pierres Calcaires Porceuses." Paris. 1850



less insoluble, but by prolonged exposure its solubility increases: still it is never all absolutely insoluble, and it appears to me that the great value of the silicate of soda arises from the formation of the silicate of lime from the very lime of which the stone itself is composed.

But, as I said, certain precautions must be carefully attended to in its application: the secondary product, the carbonate of soda, which separates in the form of a saline efflorescence, must be carefully removed by washing from time to time, if sufficient rain does not fall to effect this result: moreover, it must not be imagined that one coating is sufficient: it should be repeated two or three times at intervals of several months, and the washings performed frequently during the intermediate periods: for this conversion of the carbonate of lime into silicate, and the removal of the soluble carbonate of potash, takes place but gradually, and unless it be at first effectually performed it is useless; but if it be thus carefully carried out, judging on general principles, as well as from experiments, which I have carefully watched, carried out by Mr. Henry Burrell, at Chelsea, I cannot but feel convinced that the process is likely to prove most valuable. I cannot, however, too strongly recommend that experimental trials should be made with the necessary care by persons who are both unprejudiced, and from their understanding the principles of its mode of action, competent to decide upon its merits.

I would merely ask Mr. Smith whether the simple experiment to which he alluded in his paper, of which the results were exhibited to the meeting (to which experiment reference was made almost in the same words by the Rev. Mr. Barlow nearly two years ago), was performed with all that care, and whether all those precautions were adopted which are necessary to enable him to come to a fair decision on the merits of the process? I could point out to him spots on the church of St. Luke, Chelsea, which have, under treatment with the silicate, become so hard that one can scarcely scratch them with a walking-stick, whilst the stone close by the side of it crumbles to powder under the pressure of the thumb-nail.

There are two other processes to which I most briefly allude, viz. Mr. Ransome's and Mr. Smith's own novel suggestion.

Mr. Ransome's process consists in treating the surface of the stone first with a solution of silicate of potash or soda, and then with a solution of chloride of barium or chloride of calcium, by which means an insoluble silicate of baryta or lime is deposited in the pores of the stone. This process, if judiciously carried out, is undoubtedly likely to prove valuable, but *a priori* reasoning would certainly lead us to give the preference to the use of the silicate of potash alone, and subsequent washing with water, for the following reasons:—

If the action of the silicate consisted merely in the deposition of silica in the pores of the stone, as imagined by some, then undoubtedly Mr. Ransome's method would be not merely similar in mode of action, but perhaps superior, to the use of the simple silicate; but I have before shown that the silicate converts the very substance of the stone itself into a hard insoluble mineral compound, the silicate of lime; and it is on this account that I am inclined to anticipate more favourable results from it than from Mr. Ransome's.

Moreover, the silicates of baryta and lime, which are deposited by Mr. Ransome's method in the stone, will, I fear, be in a finely-divided pulverulent state, and in that condition afford but slight protection to the subjacent carbonate; unless it be that the gelatinous silica deposited simultaneously from the silicate of soda by the action of the air serves as a binding material, uniting the whole into a compact surface: experience alone can decide this point, and I would strongly recommend Mr. Ransome's process, as second to none but the simple silicification, to the impartial judgment of those who are willing to give these two processes those careful experimental trials which their intrinsic merits so well deserve.

Mr. Smith's own suggestion, notwithstanding its ingenuity, is, I fear, not likely to afford very satisfactory results. He proposes to imitate those natural processes by which carbonate of lime is deposited in a compact form, as in stalactites, tufas, and other native encrustations; but how is this to be carried out on a building? In nature, the surface which becomes coated with carbonate of lime, remains for months or years constantly exposed to the action of water saturated with bicarbonate of lime, and the very compactness of the mass arises from the extreme slowness of its formation. But how are we to imitate artificially such a process with success? Could we submit the wall of a building to the action of a constant but uniform current of a saturated solution of bicarbonate of lime for years? In the first place, what would be the expense of transporting a calcareous spring, or of forming one artificially? and then, by what mechanical appliances could it be made

to flow for years together over the surface to be coated? In fact, to produce a covering of compact massive carbonate of lime is impracticable, and if it be deposited quickly, it would be no better than the well-known process of whitewashing. Indeed, even if it were possible to veneer a stone with compact carbonate of lime, it would be only equivalent to the choice originally of a good compact stone; for it would be still liable to the same destructive action of water and carbonic acid as all other varieties of carbonate of lime, though somewhat more slowly; whilst the effect of the silicate of soda is to convert the stone superficially into silicate of lime, a mineral almost entirely unaffected by these agencies.

In conclusion, allow me to observe, that while it is the duty of the architect to select the best possible stone, it must not be forgotten, that even the best will always be liable to the same process of decay, the difference being rather one of degree than of kind, and therefore, if processes are from time to time suggested for protecting stone from this decay, it would appear both the duty and the interest of the architect to give them a fair trial.

Moreover, it can hardly be true that the necessity for preserving our buildings from premature decay is entirely an evil of modern date, for carbonate of lime must always have possessed the properties which it now has, and have been subject to the same kind of decay; but the fact is, that it is only in modern times that the attention of scientific, as well as practical men, has been directed to the discovery of processes for preventing that decay to which all building materials have been liable from the earliest epochs, and will continue subject, to the end of time.

#### THE DECLINE IN SKILL OF BUILDING OPERATIVES.

If you and your readers are not yet entirely decided that enough has been said and written on the questions raised by the unemployed mechanics, perhaps you will permit me to advert to one topic which seems peculiarly adapted for the pages of the *Builder*, constituted as the sufferers are of the trades more immediately connected with building operations. The wild proposal of converting 35,000 unemployed mechanics into "ploughmen and agriculturists," by sending them to cultivate the waste lands, whilst so many colonies require the assistance of their labour, appears most inconsistent with the general fact that all employment requires at least some previous education.

Is there any number of these 35,000 tradesmen who can state how many of that number have received any education for the pursuit they profess to follow? Are not a vast number of them persons taking up such trades merely because for a few years building operations have been carried on at a rate beyond all precedent, creating a demand for labourers, the want of whom might alone have stopped much of the recklessness of speculative builders. It is chiefly these builders not being able to get their houses off their hands that has thrown so many trades out of work at the present moment. The larger houses are employing but few less in number, but then they employ the skillful workman—the workman worthy of his hire; and as they are often obliged to pay a higher rate for wages than their workman is worth, they are the more cautious whom they employ. The man who has had a proper education in his trade must of necessity be a more useful person, and therefore, more likely to have constant employment than the one who has merely taken to the trade on account of some immediate demand for assistance. This easy influx has been permitted by the repeal, in 1814, of so much of the statute of 5 Elizabeth, chap. 4, as subjected to penalties, persons who carried on or followed any trades (then existing) without having served an apprenticeship of seven years thereto. There are many now living who can recollect the first deterioration of joiners' work, when men recommended a "mate" to their master, and employed his time in fetching and carrying, because he was not worth the pay which he shared with his introducer.

There can be no doubt that this repeal has been of incalculable service to the country as far as commerce has been concerned; but, as regards the art-workmen, as he is now called, in contradistinction to the mere workman, it has been of great injury. The master workman and others have by it been enabled to take either short apprenticeships or none at all; and, by making their apprentices perform the work of the journeymen of the previous period, have not only deteriorated the quality of work generally, but have assisted to introduce the system of contracts, whereby each master seeks to undersell his neighbour, which can only be done in a majority of instances by loose workmanship and inferior materials. What else but this has destroyed the race of the art-workmen of the middle and end of the eighteenth century? Where are now the bricklayers who could build walls which,

for neat and strong work, are in these days still a delight to look at? the stonemasons, who could select stone which, fifty years after the completion of the edifice, exhibit in many cases as clean work as the day it was done, and which will still endure for years without either the process of a triennial cleaning down, or of covering over with five or six coats of paint? the carpenters, with their joists, roof, and floorings, adapted to all requirements, without the additions of ironwork, to render small scantlings efficient for the duty of proper ones? the carvers of all kinds, yet putting to shame all our modern make-believe attempts in composition and papier mâché? the plasterers, with their ornamental work, executed by hand, on the wall or ceiling itself, rendering the modern "decorator" a person of no consequence? These were all art-workmen, and truly so, and we shall not have them again until the building trade, leaving the control of one man, who undertakes all trades "by contract," shall again be carried out by the master workman, with his assistants, as formerly practised. It is thus only that the best work is performed, even in the present day, in England, and by all trades in foreign countries. When Sir William Chambers, and the other architects of his period, had made the designs for a building, they called together the several master-workmen, and explained the work to them: the building was erected in the best manner, constructively and ornamentally, was paid for by measure and value, and the occupier found, after inhabiting the house for twenty or twenty-five years, that he had not had to pay for any substantial repairs. Now, however, in too many cases, every three or four years, a house requires almost as much to be laid out upon it to render it again decent in appearance, as would have been at first sufficient to have made the work efficient for thirty or forty years. Under such an arrangement as this, the master-workman would be compelled to teach his apprentices, and must keep his men up in art knowledge, otherwise the greater artist would obtain the custom of his client. Look at the work in the houses in Harley-street, and in the buildings of that period, or take the house of the Society of Arts, and compare them with those in Regent-street, and the Suffolk-street Gallery, not to descend to later examples.

It is only for the last quarter of a century that the want of art-workmen (I do not mean artists, as Flaxman, Stothard, and others who were employed by the great houses for designs) has been commented upon, and the fault of their non-existence or scarcity has been laid at the door of the Government, for not providing schools to teach drawing and design; when, in fact, these very schools—as *artists* abroad—had been in existence in the houses of each of the master workmen, who, by his indentures, was bound to teach his apprentice "the art and mystery" of his calling; and this in reality, and not as at the present time, by suffering the youth to pick up a good, bad, or indifferent education as he best may from the people he has to associate with during the few years it may be considered necessary he should devote himself to such "unprofitable" labour as *learning* his business.

Government, however, after much pressure, did, in 1837, commence a "School of Design," as an upper school for the many good institutions for teaching drawing then in existence; and, under the able direction of Mr. J. B. Papworth, it answered its object most efficiently. But, resigning the appointment on his arrangements being interfered with, this establishment has gradually been altered in character.

In the last volume of the *Builder*, page 666, in the report of a lecture given at the Coalbrookdale Literary and Scientific Institution, Mr. George Wallis, head master of the Birmingham School of Art, stated that "some twenty years ago the Government of this country, conscious of our national defects, undertook to remedy them. They began, however, by teaching 'design,' an unfortunate term to select, seeing that it includes invention, which it is out of the power of such schools to teach. We have now, however, arrived at the point from which we ought to have started: the object of the Government now is to teach the whole people that they may appreciate works of merit, as well as to educate students in these schools that they may create them." These remarks are extraordinary as coming from a person in his position, and if it be the opinion of all the other head masters of these Government schools, it certainly proves one thing, and that is, their general incapacity for their positions; because, according to the capacity of the pupil, design is as easy to be taught as any portion of an art or of a trade; and with all these twenty years of Government teaching, has there been any advance upon the works mentioned in the first portion of these remarks? I doubt it.

If, then, these "unemployed operatives" are what I have termed uneducated, would it not be an advantage

\* We are not to be understood as assenting to all the writer's views.—Ed.



able arrangement for their committee to class them according to their previous callings, if any, when perhaps something more tangible could be held out for relieving their distress, than that of the conversion of waste lands? At present, an agriculturist does not want a stonemason or a bricklayer as an assistant; nor does a manufacturer require the daily services of a carpenter or decorator. I urge this, because the eyes of those who are placed at the head of our affairs are blinded by what are called "principles of political economy," which are a convenient screen for doing nothing to help such a body of men.

A WELL WISHER.

#### TESTIMONIALS TO CLERKS OF WORKS.

AMONG the numerous difficulties attendant on the practice of an architect, that of obtaining clever, steady, and honest clerks of works, is not the least. How many buildings and architects suffer from the deficiency of one or frequently all of these very essential qualifications; and how much litigation is produced by the ignorance, inattention, or roguery of those who should assist to hinder it, most architects have experienced in a more or less degree. Some course should be adopted to remedy the evil. Persons who call themselves clerks of works are numerous enough, as all have found who tried for one by advertisement; but, of the applicants, how very few would be employed even by the most undiscriminating or confiding architect? as two-thirds consist of men who are too lazy to work manually at their own trade, or prefer (actionally enough) superior pay, position, freedom of action, and builders' gratuities (either in real or mal) for some service they should not but do render to them.

Now the real cause of so many improper persons getting employment is the system of "testimonials," too readily and frequently given by architects before they have had opportunities or time to know the real character of the man they have had faith in. Lazy people are most feasible: talking is much more easy than working, and this said talking is turned to good account; not that they who do not talk are always to be considered either clever or circumspect, as one of the most quiet men I have employed was seldom to be found on the building.

I have been informed that many a testimonial has been given which would gladly be recalled, as it has been known they have been used years after, when the person referred to has become a very different character to what he was when the favourable testimonial was given. I have experienced this myself on several occasions; and, in communicating with the architects, have been told of their having had cause for great dissatisfaction on again employing them.

There are two ways by which the profession may be protected to a certain extent: one is, never to give a testimonial under any circumstances to a clerk of works himself, but write, on application, to the party who proposes to engage him. That will answer the purpose, but the letter must be confidential; and not given to the clerk of works, as is frequently done. Another course is to give no heed to testimonials, or even look at them; then there will be no inducement to obtain them; and above all things, architects must be true to one another, as in three cases within a short period I have found the characters and actions at total variance, and in one of the most important features, viz. honesty, as they united with the builders to defraud my clients, besides being rarely seen at the building.

There are many honest, respectable men in this calling, but it must be a matter of regret that a superior class of men do not qualify themselves for the duties. Three guineas per week (often given) is not a very bad salary. Above all things, avoid testimonials, and giving *unreal* characters; and if some architects will engage men without application to their last employers for their character, or with as strong a slur on them as the law permits, they justly merit the bad service they themselves do not take the trouble to avert.

ONE WHO SPEAKS FROM EXPERIENCE.

#### KENSINGTON DISTRICT SCHOOL OF ART.

ONE of the district schools of art, that at Gore House, Kensington, was closed on Friday, the 27th ult. in order that the row of buildings in which it was situated might be given up to the commissioners of the Exhibition of 1851, who are about to pull it down and throw open the site to the Kensington-road.

A short time previous to the closing of the Gore House School, the students signed and sent a memorial to the Department of Science and Art, deploring the circumstance, and requesting that another school might be established in or near Kensington. They went on to say, that the Training-school at Cromwell Gardens is inaccessible to them, on account of the

largeness of the fees; that in the event of no school being established to replace their old one, it will be a serious blow to their progress in the various trades to which they belong, and in which, through the assistance of their art-studies, they have some hopes of distinguishing themselves.

This being an honest avowal, it would seem,—and we are glad to find it so,—that the influence of the schools is being felt in the right direction; and the Department will do well to encourage and foster such a spirit, by complying with the students' request. This looks something like vitality.

The utmost good feeling seems to have prevailed between the master and mistress and their male and female classes, for at the leave-taking on Friday, an address and testimonials were presented to both master and mistress.

#### SANITARY STATE OF ST. JAMES'S, WESTMINSTER.

THE first annual report of the medical officer of health for St. James's parish, Westminster, has been made to the local vestry and printed. As was to be expected from the well-known tact and talent of Dr. Edwin Lankester, the report is both interesting and instructive. It appears from it that while the average mortality of the parish from 1846 to 1855 inclusive was 790; that during 1856 was only 682, or 108 less than the average,—one hundred and eight lives having thus been saved to the community in one year, doubtless mainly by the operations of sanitary agency.

"It is quite possible," remarks the reporter, "to calculate the value of 108 lives, at all ages, and in all ranks and conditions. Founding such a calculation on the annual income of the country, the lowest value that you could attach to 108 lives would be 10,000. To this sum must be added the cost of 108 funerals, and the attendance of medical men, nurses, and others upon the sick. Another element of this calculation to which I would draw your attention is the fact that where one person dies, ten are taken ill and recover. If you remove the cause of the death of one individual you will probably save the sickness of ten other persons. It is by calculations such as this that the enormous cost of disease and death can be alone estimated, and it is upon considerations founded upon such calculations as this, that any estimate can be formed of the reckless extravagance of a neglect of sanitary arrangements, and of the immense economy of an effective system of sanitary organisation."

This, however, is not the only point to which we would wish to draw attention. While the deaths in 1856 were only 12 to 100 of the population in the St. James's-square division of the parish, those in the notorious Berwick-street division were 23 to the 1,000. The Berwick-street district of St. James's parish contains no less than 432 persons to every acre, being a more crowded population than is presented by any district in the metropolis so large as that of Berwick-street; and even including, with the St. James's-square division, that of Golden-square, with 22 deaths to 1,000 of the population, if the mortality of the Berwick-street district were as low as the average of the other two divisions of the parish together, the deaths in the whole parish during the past year would not have been so great as it has been by 115; in other words, from sheer overcrowding it would seem, combined, of course, with the still imperfect sanitary condition of the locality, one hundred and fifteen persons have died last year in this district, who, had they only been spread over a wider surface of the same average description, would have been still alive!

#### SMOKE AND THE NEW HOUSES OF PARLIAMENT.

THERE are "Smoke-consuming Acts," and "smoke-burning patents," and "smoke-burning orders," and fines for allowing smoke. Smoke is, however, neither "burned," "prevented," nor "fined,"—that is, all the cases, and some of the most notorious which occur, are not so dealt with. Smoke is made by the law-makers and fine-enforcers in defiance of the good old proverb which says,—and, we must confess, with some show of justice,—that "Law makers should not be law breakers." Let any one of the three peers of the blood royal, the two archbishops, the twenty dukes, the twenty-one marquises, the 111 earls, the twenty-two viscounts, the twenty-four bishops, the 202 barons, the sixteen representative peers of Scotland, the twenty-eight representative peers for Ireland, the four Irish representative prelates, the officers of the House of Peers, the 496 members for England and Wales, the fifty-three members for Scotland, and the 105 members for Ireland,—just look at their own smoke-making, and say if the British Houses of Parliament have any right to make laws against the intolerable nuisance, smoke.

About the centre of Sir Charles Barry's grand building a square tower rises, with steep roof and louvered sides; and, out of said tower, dense volumes of smoke may be seen pouring forth, filling the air with millions of "blacks," each black forming a

floating record, for the time, against the legislative wisdom and justice of the three kingdoms. "Physician, heal thyself," may be thundered forth against this abominable smoke-producing tower by every citizen who has been fined or censured for making smoke. There are many ancient privileges connected with Parliament, and some modern ones, and we presume it is intended to claim the right to smoke. The Admiralty, at the recent grand naval review, issued orders against steam-boats making smoke. The commercial steamers complied; the Admiralty steamers alone sent up black volumes of defiance against "My Lords'" orders. So now Parliament first proves, by scientific evidence, that smoke can be burned and prevented; it then most properly frames and issues, as law, clear and stringent clauses against smoke, and then the British Houses of Parliament smoke worse than the Lambeth Potteries. This should not be so. Messrs. Nobles,—Lords, Spiritual and Temporal, and Commons of Great Britain,—if the smoke of coal cannot be consumed in your fires, then burn coke; but don't bid defiance to your own laws, and persist in ruining your own beautiful new building before it is fairly completed.

#### THE "CATHOLIC APOSTOLIC" CHURCH AT LIVERPOOL.

THE Irvingite, or Catholic Apostolic Church, in Canning-street, Liverpool, of which we gave some account in our last volume (p. 146), was partly erected by an amateur architect, who was also his own employer or paymaster. The edifice stood for some time after being only partly erected, but at length was put into the hands of Mr. Trevor Owen, of Birmingham, architect, for completion, not entirely according to the original intention, but so as to accommodate a larger congregation.

The masonry is in freestone, from Stourton-hill. The length of the church is 121 feet; width, 39 feet; height, 60 feet. The nave and transepts are covered by an open timber roof, stained and varnished; the windows are glazed with mellow tinted glass. There are large traceried windows in each transept, and over the west door, which, together with the smaller ones, and the building generally, is executed in the Flamboyant style of architecture, as nearly as circumstances would admit, in accordance with the more expensive richness of the eastern portion. The tower rises over a baptistery, with a window designed for a baptismal subject in stained glass.

The edifice is now complete, together with several additional works in contemplation at the time we last noted its progress, and amongst which was the entire remodelling and refitting, in oak, of the chancel and choir, the floors being relaid with Messrs. Minton's encaustic tiles.

A spacious new vestry and council-room have been added. The aisles have been groined, and the church is lighted by richly-ornamented gas-lights. The organ has also been completed, and encased with a new organ front.

The total amount of contracts, with other works, amounted to upwards of 4,000*l*.

Mr. T. Hughes was the contractor, and Mr. B. Brierly executed the stonework; Mr. R. Grey was clerk of the works.

#### PROVINCIAL NEWS.

**Portland.**—Government, according to the *Dorset Chronicle*, have appointed Mr. John Coode, C.E. as engineer in chief of the break-water works. The post became vacant through the death of the late Mr. J. M. Rendel. Mr. Coode has been the resident engineer from the commencement.

**Croydon.**—The new national school building, in the Church-road, approaches completion: it will supersede the building in George-street. The architecture is in the Tudor style. The building will contain two school-rooms, a classroom, lavatory, two large lobbies, and two porches. The large school-room is 51 feet 6 inches by 20 feet; the other, 39 feet 3 inches by 20 feet; both being 19 feet high. The classroom is 20 feet by 13 feet, and contains a gallery. The whole will be warmed by a new patent process. It is calculated to accommodate 200 scholars. A detached residence for the master adjoins the school premises.

**Banbury.**—The ground upon which the Cornhill corn exchange building is to stand is being





THE "CATHOLIC APOSTOLIC CHURCH," LIVERPOOL.—MR. E. TREVOR OWEN, ARCHITECT.

cleared, preparatory to the erection of the exchange.

**Blithfield.**—The foundation-stone of Blithfield schools was laid on Tuesday in last week. The idea of erecting national schools for the parish of St. Leonard, Blithfield, originated with the late Lord Bagot. The site of the structure is within the park, and close to the hamlet of Admaston. The building will be of Gothic design, including residences for the master and mistress, and be composed of red and blue brick with stone dressings. Mr. G. E. Street is the architect, and Messrs. Lilley (of Measham) and Elliott (of Ashby-de-la-Zouch) are the builders.

**Cardiff.**—The East Bute Dock extension now approaches towards completion, and the dock will be lengthened 2,000 feet in a short time. Messrs. Hemingway and Pearson, the contrac-

tors, have made arrangements with the trustees of the Marquis of Bute for a further extension of 1,000 feet. The Rhymney Iron Company are about building extensive warehouses in connection with the dock, and hundreds of houses will be built ere long on the east side of the Rhymney Railway, for the accommodation of merchants and others who will ship their coal and iron in that dock. Landlords, according to the *Cardiff Guardian*, are now clearing from ten to twelve per cent. by houses in this town.

**Hereford.**—This city being in want of a Corn-Exchange, the inevitable "two schemes" are afloat. One is to erect a "new and handsome" building, of which Mr. W. Startin, of London, is the architect: the other is to renovate and remodel the present butter and poultry markets, adding thereto a corn-exchange, at an expense of from 4,000*l.* to 5,000*l.* Immense energy is

being thrown into the struggle by both parties; Broad-street contending for a new building, and High-town for the renovation of the old markets. The new building would be in the Grecian style, and of a character different from any other erection in the town.

**Beebles.**—A factory for the operations of a silk works company is to be erected in Peddar's lane, and the foundations have been commenced. The contract for the building has been taken by Messrs. Woodroffe and Sons, of this place, builders.

**Stockport.**—A new grammar-school is now in the course of completion, upon a tongue of rock, elevated some 20 feet above the highway, at the bottom of Lancashire-hill. The proprietor and originator of the scheme is Mr. Coppock, and the cost will be upwards of 1,000*l.* The Messrs. Longson, of this town, builders, are the contractors



for the building. The designs were prepared by Mr. H. Bowman, of Manchester, who designed the episcopal church for the cemetery. The style of architecture in which the school is erected is the Middle Pointed of the thirteenth century. The ground-plan of the building is described by the local *Advertiser* as resembling the form of the letter L, the longer arm forming the principal school-room, 40 feet 6 inches long (including rooms at the end), and 18 feet 6 inches wide. The shorter arm forms a second school-room, 18 feet 6 inches by 18 feet 6 inches, entered out of the former by a wide open archway. At the lower or south end of the large room, a portion, about 10 feet wide, is partitioned off by a wood screen. An external projecting porch forms the only entrance into the building. Over the area, screened off, and occupied by the master's room and lobby, is a gallery, 10 feet wide, forming a library and class room, open to the school-room, and access to which is obtained by a circular newel staircase, in the centre of the wood partition or screen. Both the school-rooms are covered by open timber roofs, having an ornamental timber bell turret, or louvre, with a conical spirelet roof. The large school-room is lighted by a pointed window, in the north gable end, three lights in width, with stone tracery in the head, and by three other two-light windows in the side walls. There is also in the south gable, over the gallery, a circular window, 6 feet 6 inches diameter. The smaller school-room is also lighted by a three-light pointed and traceried window, in the west gable end, and a low three-light window on the south side: all the windows have stone mullions. The external walls are faced with Yorkshire wall stone, and the doors and windows, buttresses, and angles, with white ashlar stone.

**North Bierley.**—The foundation-stone of the North Bierley union workhouse was laid on the new site on Friday in last week. Messrs. Lockwood and Mawson are the architects.

**Leeds.**—The new covered market is now being rapidly proceeded with. It is constructed almost entirely of iron and glass, somewhat after the style of the Crystal Palace. The form would be a parallelogram, if it were not for an oblique end on the Kirkgate side, which follows the line of the street. It is about 300 feet long by 130 feet wide, and contains eighty shops in two rows—the outer facing into the several streets by which they are surrounded, and the inner facing into the interior space. They are surmounted by a glass screen, and the entire space is covered in by three longitudinal roofs. The building is closed by seventeen pairs of ornamental gates, and the design, so far as an architectural character is admissible in such a structure, is of the Tudor style. It will be ready for occupation about Easter. It was designed by Mr. Charles Tilney, late borough surveyor, and is being constructed by Messrs. Nelson and Sons.

**Wick.**—The British Fishery Society intend to commence immediately to build a long-projected river-wall, opposite the *John O'Groat Journal* office. This, and the several buildings contemplated in Pulteneytown, says the *John O'Groat*, will prove more than sufficient for all the available labour of the district. The wages of masons are consequently on the rise: 20s. a week is almost the lowest figure that will be accepted.

#### CHURCH-BUILDING NEWS.

**Road.**—The chancel of Road church, Northamptonshire, has recently been restored, at the expense of the Duke of Grafton. The south wall, being much dilapidated, has been rebuilt as before, with the addition of two buttresses; and in the north side a three-light Perpendicular, and also a low side window have been opened. The brick floor has been replaced with red and black tiles, and the low flat ceiling with an open high-pitched roof. On February 19th, the partition between the chancel and the tower (which is central) having been taken away, the re-opening was celebrated with divine service.

**Barnstaple.**—It has been resolved that active and immediate steps shall be taken to restore the Protestant chapel in the village of Watchfield, which was pulled down in 1788. A subscription has been set on foot, and Viscount Berrington and the Rev. Edward Berens have given donations of 1000l. each.

**Stratford.**—The proposed new church for the Calverly district, Mr. B. Ferry, architect, is to

accommodate 800 persons, to be erected without galleries, the usual number of sittings being five, and it is estimated that it will cost, with a parsonage house, and an endowment for repairs, about 5,000l. It will be built in the Gothic style of architecture, with a square tower surmounted by an octagon spire. The plan consists of a nave and aisle, a chancel, &c. with a groined roof.

**Petersfield.**—The local vestry has authorised the Burial Board to borrow a sum of money for forming the new cemetery. The estimated expenses amount to something over 1,100l. The contract for erecting the mortuary chapels has been taken by Messrs. Minchin and Wetherspoon, whose tender was the lowest of five sent in. The architect is Mr. J. Colson, of Winchester.

**Bristol.** A new church is to be built in a situation to serve as a place of worship for Pill. An anonymous friend (according to the *Mirror*) has offered 1,000l. towards the structure. Mr. Miles gives a site, and other gentlemen have promised to contribute. New schools for the parish of St. Nicholas are about to be erected in Back-street.

**Leek.**—The opening of the new Wesleyan Chapel here took place on the 13th ult. The building is supposed to have cost the donor, Mr. Wardle, with the site, about 4,000l. The trustees have made some additions to the original plan, involving an expense of about 250l. The style adopted is Early Pointed, of the transitional character prevailing during the reign of Edward I. The materials used are red and white brick, with Holington stone dressings. The chapel is 66 feet by 46 feet outside the walls, but exclusive of the buttresses, which divide the sides into five bays each. Two light lancet-headed windows, which run through the galleries, light each bay. The entrance-front is divided into three bays. Over the entrance is a large four-light window, glazed with stained glass. At the east end of the chapel is a vestry, 25 feet by 15 feet inside, for private meetings, with orchestra over. The body of the chapel is 42 feet in span, without any horizontal tie below the elevated straining beam. The entire width is spanned by laminated ribs springing from moulded stone responds. The spandrels between the ribs and principal rafters are cusped, and the ribs are relieved on the under side by continuous pendentive tracery following their curve from side to side. The longitudinal timbers of the roof are so disposed as to divide the ceiling into panels, which are plastered, and wall afterwards coloured. The seats are framed in deal, with inclined backs. The whole of the joiner's work is stained and varnished. All the windows, except that over the entrance, are glazed with Hartley's diamond plate-glass. Lighting is effected by two sun-lights in the ceiling—each with ventilators by tubes from them through the roof. The building is heated by hot water. The works have been carried out from the designs and under the superintendence of Mr. Sugden, of Leek, architect; by Mr. Matthews, of Leek, builder, except the plumbing, glazing, and painting, which have been done by Messrs. Johnson and Son.

**Warwick.**—An effort is being made to carry out certain much-needed repairs and alterations in St. Mary's Church, Warwick. The estimated cost of the undertaking does not exceed 500l. and more than half the required amount has been already promised.

**Hastings.**—The new chapel for Wesleyans, in Manchester-road, has been opened. The chapel is 95 feet long by 50 feet wide, including vestries and apse. It covers an area of 4,800 square feet. The style is Gothic, of the Perpendicular period. The chapel is estimated to seat 1,100 persons. The roofs, internally, are ceiled to the cross-pieces. The plastering between the panels is coloured blue, and the coved ceiling of the apse is, in addition, illuminated with gold stars. The chapel has been erected by Mr. William Waddington, of Padstham, at a cost of 3,000l. exclusive of extras, from the designs and under the superintendence of Mr. James Wilson, of Bath.

**Doncaster.** The last stone, under the first contract at the parish church, taken by Messrs. Ireson and Son, has been laid; and when the interior of the church is cleaned out, says the *Gazette*, their engagement will have been completed. Consequently, a number of workmen will be discharged, as the contractors have received no instructions to proceed with the tower. This pause in the work, however beneficial it may prove to the building itself, will, to many persons, be a matter of deep regret; and it has been urged on the building committee that there is no necessity for further delay in giving their order to Messrs. Ireson for the second contract, viz. the erection of the tower.

**North Shields.**—A new Wesleyan Reform Chapel was opened on the 19th ult. in Howard-street, North Shields. The chapel is built in the mixed style, upon an Italian base. It will seat 650 persons, and, with

large schools, to be built, will cost 2,500l. Mr. Green of Newcastle, is the architect.

**Liverpool.**—Workmen are now employed upon the ground purchased by the Free Tolbooth Corporation in St. Andrew-square, preparatory to commencing building operations. The cost of the new church is estimated at 1,150l. exclusive of painting, gas fittings, &c. This, when added to 5,400l. paid for the ground and the Exchange Bank premises, which are to be retained in front of the church, and 150l. for some incidental expenses, will make the total outlay 10,000l.

#### FOREIGN INTELLIGENCE.

**Valenciennes City Gallery.**—The Society of Agriculture, Science, and Arts of the above city has had the happy idea of establishing an Historical Gallery, to contain historical monuments relating to the city. Amongst the specimens lately deposited in the collection, already rich in pictures, portraits, busts, &c. are copies of the paintings of the Ducal Palace, Venice. The immense Hall of the Great Council offers much attraction by the large paintings of Paul Veronese, and other artists of the Venetian school. Four of the pictures of the hall have been lately copied, relating to Baldwin I. emperor of Constantinople, born at Valenciennes in 1171. They are, "The surrender of Zara in 1202," by Domenico Tintoretto; "The First Surrender of Constantinople in 1203," by Palma the younger; "Young Alexis Comnenus imploring the aid of the Crusaders in favour of his Father Isaac," by Andrea Vicentino, pupil of Palma the elder; "Election of Baldwin as Emperor of Constantinople" by the same master. The important task of copying these fine pictures had been confided to M. Charles Crank, second grand prize of Rome, born at Valenciennes. The originals being of huge dimensions, M. C. has reduced them to one-third. These superior conceptions of Italian mind have been little taken notice of hitherto, as they are placed at a great height on the wall which looks towards the Quay. Various conflicting lights also make the viewing very irksome, and the glittering of the waves reflected on them obliged M. Crank to interrupt his work at certain periods of the day. It was only after eight months of persevering labour that he succeeded in completing these copies, which were highly spoken of by the Italian press, and at Paris, where they remained a few days.

**Improvement in Boring Apparatus.**—M. Kind, the German engineer, has devoted the last twenty years to the improvement of an especial branch of his profession, namely, the boring of rock to great depth. The main feature of his improvement consists in this, that the boring chisel is fastened to a ramrod of 5 to 6 cwt. which is alternately elevated to a height of 3 or 2 feet by a wooden rod, and thus falls by its absolute weight on the rock, by which even the hardest is reduced to powder. In the old apparatus the rod was made of iron, which amounting, at a depth of 1,000 feet, to 100 or 150 cwt. imparted to the falling chisel vibrating motions which nearly annihilated its action. The wooden rod, on the contrary, swims in the water of the borehole, and rods of from 1,000 to 2,000 feet length do not considerably augment the weight of the apparatus. The progress of the work varies, according to the quality of the rock, from 1 yard to 10 feet daily, but hard rocks do not prevent the like difficulty as soft and loose ones, which must be protected by tubes of steel of strong sheet iron. The very weight of the tubes, which is from 15 to 30 lbs. to the running foot, causes their descent, if loose rocks of sand, clay, or grit are to be perforated. The work thus proceeds downwards, as the iron tubes obtain room to descend by the removal of the detritus from the depths of the borehole, and do not require the fastening or ramming down of wooden tubes. Greater difficulties arise when banks or blocks of hard rocks are placed between the main loose geological formations. In this case, a dilating instrument is used for passing the tubes, which are 10 or 12 inches wide, through such an impediment.

**Munich.**—Archaeological Discoveries.—Even this art-loving capital of Bavaria has been surprised by the appearance of an archaeological work, containing a description of the Roman villa excavated near Inzelsdorf, and which has been issued by the firm of Curtius, in German and Latin, with much topographical elegance. It contains a very fine map of the surrounding country, in which the Roman road and the Vallum Romanum are laid down, and a very detailed plan of the important building, which represents a villa of a very elaborate and well-arranged design, with the indication of its various rooms, &c. A coloured drawing of delicate design shows the mosaic pavement, which occupies the middle of the building. Hitherto, the knowledge of the Roman antiquities of Trausdanubia, which stretches along to Vindictia and Rhatia, consisted only of some scanty records, or roads and their ditches lined with piles. The discoveries near Winterhoven prove now, that Roman



civilization and art had also reached to this remote corner of the great empire of old.

**The Panama Railway.**—A Swiss engineer employed on this line writes as follows:—"This railway is the most adventurous work ever undertaken. We proceeded with the compass straight from one ocean to the other: swamps like the Pontine were dried up, torrents cut off, rivers passed, mountains got round up and down with the windings of a serpent, but always *a-head*, until on a fine morning the locomotive was whistling where before but the howling of the jaguar and baboon had been heard. Now, in a few short hours a journey is accomplished which hitherto could only be performed with much expense and danger. But what a railway! I wonder how stokers and firemen can be found to expose their existence to such constant venture. I feel frightened in contemplating these bridges, *span*, like cowbells, from one precipice to another, and resting on moving, rocky ground. It is true the trains go very slowly at times, at the rate of hardly 12 miles. On the other hand, nothing can surpass the beauty of this scenery, the bold volcanic rocks decked with the most gorgeous and varied vegetation," &c.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS' AWARD OF MEDALS.

A SPECIAL general meeting of the Institute was held on Monday, March 2nd, Mr. Bunning, V.P. in the chair, when it was resolved unanimously, "That it be humbly submitted for her Majesty's gracious consideration, that the Royal gold medal, for the year 1856, be awarded to Owen Jones, Fellow, author of the 'Alhambra,' 'The Grammar of Ornament,' and other works." The recommendation was supported by Professor Donaldson, Mr. T. H. Wyatt, Mr. Soles, Mr. Digby Wyatt, Mr. Papworth, Mr. Jennings, the Chairman, and others.

The reports of the council, on essays and drawings received in competition for the Institute medals, and the Soane medallion, were read; and, in conformity with the recommendations therein contained, the Institute medal was awarded to Mr. E. W. Tarn, M.A. for his essay on the Mathematical Sciences, in their relations to architecture; and a medal of merit was conferred on Mr. Augustus Henry Parker ("Con Amore"), for his design for a large metropolitan hotel.

The report on the essays said,—

"Your council have the honour to report that they have read with considerable care two essays sent in to them, one marked 'Gaudemus gaudetibus, doletus doletibus,' on 'Bells and bell-ringing,' and the other, 'Chacón a son gout.' The latter is a long and very carefully prepared essay on the 'Mathematical Sciences in their relation to Architecture.'"

It commences with some of the simplest geometrical problems, and proceeds through a selection of the most useful theorems in conic sections, mechanics, and hydrostatics. Among them will be found cases in geometry, trigonometry, conic sections, rules for finding the entasis of columns, composition and resolution of forces, thrusts of roofs, strength of timber and other materials, the theories of the lever, wedge, arch, and dome, and the pressure of fluids on the sides and bottoms of vessels.

As the author very properly observes, to write a treatise on all these points, would fill many volumes. We are glad that authors will not attempt to do so, but that of rare occurrence, and all treatises on the science must be more or less compilations or adaptations from the works of others, but the subject takes an enormous range, and the author has attempted, and we think with success, to select such cases as commend themselves to the architect, and which bear most directly on his practice.

Although your council cannot endorse all the opinions stated—for instance, they believe the rule given for the curve for the entasis of a column will not suit all orders,—they still have great pleasure in giving their high commendation to the paper, and recommend that the offered medal be awarded to the author of it."

In the report on the designs, the council said,—

"The Drawings with the motto, 'Persevera, Persevera, Per se vera,' exhibit a range of buildings, enclosing one large quadrangular court, with successful arrangements for supervision and administration. The plan has decided originality in several respects, such, for instance, as the introduction of a ladies' coffee-room, and combats fairly the difficulty of placing a corridor of communication between two ranges of rooms. This is sufficiently lighted, wide, and handsome, and, by the contrivances at the meeting angles, is made to harmonise with the external design. At the same time the arrangements generally, would admit of some improvements in construction. Throughout the plan symmetry is well maintained. The elevations, considered as drawings, would admit of more careful execution, but there is merit in the general effect of the fronts.

Viewed as a whole, the design is fairly harmonious, and generally well proportioned. The management of fire-towers in windows in the height, without producing sameness in effect, deserves commendation.

Considering these merits, the committee suggest that the Soane medallion should be awarded to the author."

Some discussion arose as to confirming the recommendation of the council respecting the Soane medallion, the author of the design chosen having, it was thought, transgressed in some degree the precise instruction given to competitors as to limiting only with Indian ink or sepia; but the superiority of the design over those of the other competitors, induced the meeting to acquiesce in the recommendation of the

council, and the medallion was accordingly awarded to Mr. W. J. Green, Associate.

There was a third set of drawings marked "Pro Bono Publico."

The recommendations of the council respecting the Royal and other medals for the current year, 1857, were read and agreed to; the council being requested to take into special consideration the merits of foreign distinguished architects and men of science, in proposing the award of the Royal medal.

The Institute medal will be awarded to the author of the best essay "On the application of wrought-iron to structural purposes;"—"On the influence of local material on English architecture;"—or "On the principal harbours of the Roman empire, and the monuments by which they were adorned."

The medals of the Institute, with the addition of five guineas, will be also awarded for the best illustrations, geometrically drawn, from actual measurement, with descriptive particulars, of a Medieval building, hitherto unpublished in that manner, in Ireland, and for the like subject in Scotland.

The Soane medallion will be awarded for the best "Design in not less than five drawings for a marine sanatorium, or building, for the temporary residence of a limited number of the middle and upper classes."

The successful competitor, if he go abroad within three years after receiving the medallion, will be entitled to the sum of 50*l.* at the end of one year's absence, on sending satisfactory evidence of his progress and his studies."

#### COMPETITIONS.

**North Shields Mechanics' Institution.**—In your number of the 21st ult. is an advertisement to which I think the attention of the profession should be particularly drawn, because, among all the gross cases of attempts to get the benefit of other people's time and talent, this is the worst I have seen. I allude, sir, to the advertisement for designs for a new building for the North Shields Mechanics' Institution, which, after stating the accommodation required, says that the cost is to be limited to 1,500*l.* A premium of 30*l.* is offered for such design as the committee shall select for construction; but the person receiving the premium will be required to prepare all sufficient working drawings and specifications, and to find a contractor willing to perform the work for the sum named in the report and estimate accompanying the design; and in case the best design, sent in, shall not be adopted for the construction of the building, then 15*l.* only will be paid as the premium.

The plan of the ground is to be had on payment of 1*s.* 6*d.*

Now, sir, I presume that the committee of the North Shields Mechanics' Institution are aware that the regular commission for what they wish to bind an architect to do, is 5 per cent. on the amount expended (including the superintendence), and, therefore, that they are seeking to get somebody to do the business at very much less than the fair and usual charge,—a charge which everybody knows, for a building to cost 1,500*l.* is quite little enough for the time expended and expense incurred.

[Moreover, architects are to make drawings for nothing, for the chance of getting this reduced payment. Ed.]

I presume, too, that some of the committee are professional men, or tradesmen, and I would ask them to apply the same rule to themselves, or to any solicitor or medical man, or to any shopkeeper, with whom they may deal in the town, and in that way test the honesty of the proposition.

But unfortunately this is not an uncommon case, and in all such cases there are some members of the profession who, from necessity, or a wish to obtain practice, are induced to send in designs in reply even to such advertisements as the one in question; and, therefore, perhaps, I should not have taken the trouble to write to you, or have sought to occupy any space in your valuable paper, but for another fact in the case, which is, that in your number for the 28th April, 1855, an advertisement appeared for the same purpose, and from the same parties, of which the present is almost a verbatim copy, the principal—indeed, almost the only—differences being that the amount for the building was then limited to 1,200*l.*; that there was a second premium of 5*l.* and the charge for the plan of the ground was 2*s.* 6*d.* I suppose they are now getting rid of the old stock at a reduced price.

I happen to know two young men, one being a pupil of mine, and the other a friend, who sent in designs on the former occasion, and who had them sent back some time afterwards without any sort of acknowledgment, and had the carriage to pay into the bargain. I think, therefore, it is only a duty to my

\* At the next meeting of the Institute, to be held March 21st, a paper will be read, "On the different theories respecting the Forum of Rome," particularly those of the Commendatore Canina,—by Mr. Arthur Ashpitel.

younger brethren in the profession to let them know, if they send in designs, what sort of treatment, judging from the former proceedings, they may expect in this instance. W. R. GATTEN.

**Lichfield.**—We are informed by the committee that "the delay in selecting the design is owing to the general disapproval of the site by the architects,—another not having been obtained."

**Sunderland Cemetery.**—The *Sunderland Daily News* expresses surprise that the offer of the Burial Board was responded to by so many architects.

"The well-merited philippic," says the editor, "to which a correspondent of the *Builder* treated this magnificent proposal, and which we transferred to our columns, will not be forgotten. But what are the poor architects to do? They are at the mercy of all the ignorant and illiberal public bodies whose united craniums, on such subjects (to use a common but incorrect simile), contain no more than the little finger of any of the least competent of the men on whose productions they act in judgment. Without making special reference to the Sunderland Board, the subject takes a wider and more general significance than applies to it locally. Of late years the method so generally adopted by public bodies of calling upon professional men to devote their talents and time to the production of plans, specifications, and estimates in competition with each other, has been greatly condemned, and we are bound to say, by none more energetically and more ably than the *Builder*. Such a proceeding is a gross injustice upon professional men, who have to be at great expense and labour in preparing designs, out of which only one can possibly receive any payment. But in the case where the premium is a mere pittance, scarcely sufficient to cover the actual outlay for the mechanical labour of copying the drawings after they are designed, the injustice is greater still."

We shall be glad to find the general press awakening to the errors of the course pursued by public bodies in this respect, and writing upon the subject so clearly and sensibly as the editor of the *Sunderland Daily News*.

**Tamworth Union Competition.**—Competitors are asking for information as to progress.

#### ILLUMINATED CLOCKS.

OBSERVING a paragraph in your paper of the 21st ult. which states that the dials of the great clock, at the new Palace of Westminster, are to be done in imitation of the clock at the lodge at Hyde-park corner, we beg to state for the information of your readers, and the public at large, that we have not supplied any of this new patent material for the lodge at Hyde-park corner, or any other building, neither do we intend to do so until the dials at the new palace are completed. We received our instructions from Sir Charles Barry, to supply him with a certain amount of this material, as far back as November, 1855, and which was fixed in the temporary experimental dial, at the south front of the Tower. After various experiments, Sir C. Barry, finding it to succeed, determined upon having the whole of the four great dials glazed with it, and we were, therefore, honoured with the order in April, 1856, last, to manufacture sufficient to complete the same, which we have now been engaged upon ever since, and we have so far accomplished the object, that a great portion of two of the dials is already glazed: the other two dials are in a forward state, and we trust will soon be completed, and give universal satisfaction.

HENRY AND JOHN GARDNER.

#### GAS.

A PROSPECTUS has been issued of a County and General Gas Consumers' Company, with a capital of 50,000*l.* in 5*l.* shares, to supply gas to villages and towns with populations varying from 2,000 to 5,000 and upwards.—The Norwich Gas Company have just declared a dividend equal to six per cent. exclusive of an addition to the amount of the shares, by which the 23*l.* shares were advanced to 25*l.*—At the general half-yearly meeting of the West-Ham Gas Company, after a sum had been appropriated to the reserved fund of the company, a dividend of 3½ per cent. clear of income tax (being at the rate of 7 per cent. per annum) was declared, and the Chairman congratulated the shareholders on the future prospects of the company, holding out a probability that while the price of gas would be less, or at a minimum rate, the future dividends would no doubt be remunerative to shareholders. The supply of gas for the last compared with the previous six months showed an increase of 3½ millions of cubic feet.—The ceremony of lighting up the village of Weedon with gas took place on Tuesday last week. On Wednesday a supper was given to the men employed in erecting the works, when upwards of 90 assembled. The quality of the gas was considered to be satisfactory.—At the usual meeting of the Wolverhampton Gas Company, the report stated that the progressive increase in the business and improved condition of the company enabled the directors to advise the declaration of the maximum dividend (10 per cent.) authorised by the company's Act, and they at the same time felt pleasure in stating their ability to accomplish a reduction in the price of gas. The reduction took place on the 1st of January last. The dividend having now reached the parliamentary maximum, any increase in the company's profits from this time forward would be principally

\* The paragraph simply states, that it is understood the dial of the Westminster clock "is to be made of a similar description of glass, so as to be quite clear, both by day and night."—Ed.



applied towards further reductions in the price of gas. —The chairman said that the Board saw no reason to anticipate that they should not be able to maintain the rate of dividend. This result was consequent upon the increased consumption of gas, which fact would not doubt enable the Board to effect further reductions in the price, and to make additions to the guarantee fund. The report was adopted.—The Burslem and Tunstall Gas Light Company have just announced their intention to reduce the price of gas to 4s. 6d. per thousand feet. This company it is said has also made great reductions in the charges for meters and fittings, in order to give every facility for the use of gas.—At the meeting of the York Gas Company, a dividend of six per cent. was declared.—About three months ago, a company was formed for the erection of gas works at Easingwold, and a contract was entered into with Mr. Wilson, of Castleford, near Leeds, who has since completed the works. On the 18th ult., the town was illuminated with gas for the first time. The works consist of a wet gasometer, 30 feet in diameter and 10 feet high, supplied from five retorts. The whole of the works have been completed for 1,000*l*. The company is formed under the recent Limited Liability Act.—Opposition is to be made to bills in progress for the Glasgow Gas Light Company, and the Glasgow City and Suburban Gas Company, on the ground that they do not provide that after payment of 10 per cent. dividend, the surplus profits shall be applied in reducing the price of their gas, and that they do not stipulate that the gas shall be of a certain quality and periodically tested.—The rapid increase in the consumption of gas in Dundee is such that, in order to ensure an ample and regular supply, the Old Gas Works' Company have resolved on erecting a new gasometer capable of containing nearly half-a-million cubic feet of gas. This reservoir of gas will be 100 feet in diameter, and will be of telescope construction, in whole 50 feet in height. The excavations have commenced, and the estimated expense is 6,000*l*.—Messrs. Little, of the Newcastle Gas Apparatus Works, says the *Gateshead Observer*, have entered into a contract with the Danish Government for the lighting of the town of Sonderburgh with coal-gas. The works are to be of the most approved construction, from plans prepared by Messrs. John H. Little, G.E.

#### ROYAL ITALIAN OPERA, COVENT-GARDEN.

The position of the new theatre is now settled. The Duke of Bedford has leased to Mr. Gye for ninety years, not only the ground upon which Covent-garden Theatre stood, but also that which is covered by the Piazza Hotel, together with other tenements in the rear, extending into Hart-street—the whole being equivalent to upwards of an acre of land. The lease becomes the more advantageous to the holder from the fact that it is unfettered by any of those drawbacks, such as renters' privileges and property boxes, which weighed so heavily on former administrations.

According to the present plans, prepared by Mr. Edward Barry, the area of the theatre will be considerably larger than previously, comprising an enclosure of 240 feet by 100. The roof is to constitute a span of 100 feet, without any intermediate supports, so that the scenery and stage apparatuses may be removed at the shortest notice, and the whole interior converted into a vast concert-room, an idea of Mr. Gye's.

Nearly half the site will be appropriated as a flower-market, in the shape of a glass bazaar, 80 feet in diameter, and 250 feet in length, for the exhibition and sale of flowers, plants, and all the objects and conveniences that incidentally relate to them. This idea, suggested by the well-known *Marché aux Fleurs*, in Paris, formed part of Mr. Gye's scheme for a glass-covered street through London, set forth in a previous volume of the *Builder*. The flower-market would show in Bow-street, south of the theatre.

#### BUILDERS' BILLS.

**GWILT v. FITCH.**—At the Court of Queen's Bench, Guildhall, on February 28, Mr. C. G. Addison appeared for the plaintiff, and Mr. M. Chambers, Q.C. and Mr. T. Chitty, for the defendant. This was an action in which the plaintiff, Alfred Gwilt, a builder in the Borough, sued the defendant, Miss Fitch, to recover the sum of 33*l*. 1*l*. 8*d*. being the amount of the plaintiff's bill for making a water-closet and doing other repairs, at a house belonging to the defendant, next door to the plaintiff's own premises.

The plaintiff's case was, that he was employed to repair a drain, and so to prevent a nuisance at the house in question, and which also affected the plaintiff's own premises; but as he proceeded with the work, he said he found the place in such a rotten state, that it became necessary entirely to rebuild it, though his principal witness, the tenant of the house,

said this was unnecessary, so far as his comfort was concerned. According to the plaintiff's own statement, the defendant's brother, an attorney in Union-street, had told him to do what was necessary, and to make a good job of it. He denied that he had ever undertaken to do the job for 5*l*, and he said that when he had sent in his bill Mr. Fitch said he was astonished at it, and that he would not pay more than 5*l*.

Mr. Fitch was called for the defendant, and stated that he had entered into a special contract with the plaintiff to do the job for 5*l*, and that he had entered a memorandum in his diary to that effect. The memorandum was read, and he positively denied that he had given the general authority alleged by the plaintiff.

Lord Campbell left it to the jury to say whether they believed the evidence given by the plaintiff, or that given by the defendant's brother, Mr. Fitch. If the entry made by the latter was a false one, certainly the fraud attempted was a most scandalous one, and one for which he ought to be struck off the rolls. But the jury must decide which side they would believe.

The jury retired and finally found for the defendant.

#### FALSE MEASUREMENT IN DEALS, &c.

A PROFESSIONAL correspondent, under the signature, "Architectus," writes us as follows:—

"The trial mentioned in the *Times* of Saturday, 21st ult. in the Court of Queen's Bench, Shepherd v. Engstrom and Co. is so important, and the observations of Sir F. Thesiger and Lord Campbell so just and worthy of attention, that I trust you will, for the benefit of the profession and the trade, give it a place in your journal, for I am sorry to say the very improper practices there referred to are not confined to deals. Two instances of late introduction (and which ought to be put a stop to by architects, as in my practice I invariably do), at present occur to me, viz. calling slates of intermediate sizes, not by distinguishing names, but by the name of the larger size, and to which name they have no right. Thus calling slates 9 by 18, countless instead of ladies, or large ladies; slates 11 by 22, duchess instead of large countesses. For myself I never allow a higher charge for these intermediates than for the inferior sizes to which they properly belong; and in contracts I always reject them, even to the taking them off again if substituted for the larger description. Again, secondly, calling cast-iron rainwater pipes by the diameter, outside measure, instead of the clear bore, as in all other pipes, and drains, &c. thus 4-inch rainwater pipes are only about three and five-eighths."

The case referred to we condense from the *Times* columns:—

The plaintiff, Edward Shepherd, was a timber merchant; the defendants, Messrs. Engstrom and Neame, were Baltic merchants; and the other defendants, Messrs. Churchill and Sims, were timber merchants. The action was brought to recover damages for a false representation alleged to have been made by the defendants to the plaintiff as to the dimensions and quality of a quantity of timber sold by the defendants to the plaintiff at a public auction at Garraway's. When the goods (about 2,000 Baltic deals), were delivered to the plaintiff he was much dissatisfied, for he found that instead of being of "first quality," as he expected, they were of a very inferior description, and, instead of being 9 inches wide, a large number of them (816), could only be classed as 8-inch deals, as not exceeding 81 inches in the trade to mean "do" were described in the catalogue, in various lots, thus:—"600 14 feet, 3 inches by 9 inches, as shipped, first quality." It was contended that the order given by the brokers to mix and reple the timber, when they knew that a large portion of it did not come up to the description in which it was shipped, clearly showed a fraudulent intention.

The defence was that there had been no misrepresentation made either as to the dimensions or quality of the timber; that, in ordering the deals to be mixed and reple, they had done no more than restore them to the condition in which they were when shipped and first landed. As to the description in the catalogue, it was shown that where dock measurement was intended, the dimensions (3 by 9) were given without any addition, and this was commonly understood in the trade to mean "dock measurement," but where the description was "3 by 9 as shipped," as in the present instance, that was only understood as a representation that such was the description under which the deals were shipped, and it was to be expected, in such case, that many of the deals would be deficient in size. The same argument was used as to the meaning of the words "first quality," which it was contended meant no more than that the goods were shipped as of the best quality.

After the examination of witnesses and other procedure, Sir F. Thesiger, for the plaintiffs, said he acquired the defendants, who were gentlemen of great respectability, of any intentional fraud. They had acted according to a custom in the trade, which was most irregular and improper, and the sooner it was put right the better. But Sir F. Thesiger acquitted them of doing more than acting according to a vicious custom, and was ready to withdraw on the understanding (agreed to by the defendants) that the plaintiff should be indemnified for the consequences and the costs.

Lord Campbell said he thought this arrangement did great credit to both parties. The plaintiff, as a reasonable man, might have expected a different result from his purchase; but as the action rested on a charge of personal fraud, there would be great difficulty in maintaining it. He (Lord Campbell) expressed his belief that the defendants did not mean to do anything wrong; but thought that the custom which it was stated prevailed in the trade

was very much to be reprobated. His Lordship enlarged on the importance of merchants maintaining in their transactions a character for that *verrius fides* for which English merchants had been hitherto celebrated. He hoped that such practices would be abstained from in future, not only by the defendants, but by all traders.

A juror was then withdrawn on the terms above stated.

#### INSTITUTION OF CIVIL ENGINEERS.

On the 24th ult. Mr. G. P. Bidder, vice-president, in the chair, the paper read was "On Chain-cable and Timber-testing Machines," by Mr. T. Dunn.

The hydraulic press machines, for testing chain-cables, had been generally so costly in construction, and required such expensive foundations, that few of the chain manufacturers had on their premises any means of testing their chains. Messrs. Dunn, Hattersley, and Co. of the Windsor Bridge Iron Works, Manchester, having had their attention directed to this want, designed the simplified testing-machine, the description of which formed the subject of the paper, and which could be produced for 200*l*. to 300*l*. instead of 1,000*l*. to 1,600*l*. the cost of the Government and corporation testing machines. It was illustrated in our pages some time ago. The arrangements for the main hydraulic cylinder, the valves, and the levers, are very simple and effective, and the results of very numerous series of experiments, which were given, demonstrated the power and uniform action of these machines—one of which was used at the Paris Universal Exhibition in 1855, for making a long series of experiments on the strengths of colonial and other timber, under the direction of Captain Powke, R.E. part of whose report was quoted.

In the course of the discussion it was remarked, that the broken links showed, in almost every instance, that the fractures had arisen from an imperfect union of the iron of the links in welding. It was considered that sufficient force and rapidity of blows could not be obtained by hand-labour, and that tilt hammers with the requisite speed had not yet been employed; neither had steam-hammers, which were merely lifted by steam and fell by their own gravity, sufficient speed for heavy chain making. A description was given of Naylor's single or double-acting steam-hammer, which could be changed at pleasure, by merely moving a lever, and by which any amount of steam, from a mere breathing upon the piston to that of the full pressure of the boiler, could be applied, and be varied whilst the hammer was in full work. Two of these hammers were employed in the workshops of the Eastern Counties Railway at Stratford, and one at Norwich. They were somewhat like the "Nasmyth" hammer, but comprised several modifications, having reference particularly to the valves and valve gearing. The hammers weighed 10 cwt. each, and when worked with a length of stroke of 12 inches, and double-acting, 250 blows per minute could be obtained, or more than twice the number that could be given by an ordinary hammer lifted by steam, and falling by its own unaided gravity. The same principle was said to be applicable for rivetting iron plates for ship-building—also for boilers, tanks, wrought-iron bridges, rivet-making, &c.

#### RECENT AMERICAN BUILDING PATENTS.\*

*For an Improvement in Mixing Wheat Flour with Paints.* ISAAC GATTMAN, Philadelphia, Pennsylvania. *Claim.*—The manufacture of paints by grinding crude colours in a composition of water, flour, or its equivalent, rosin, or its equivalent, fish oil, or any drying or undrying oil, in order that the paint thus manufactured may be produced at a cheap rate, and afterwards thinned with water to the required consistency.

*For an Improved Method of Bending Wood.* EDWIN KILBURN, ARTEMAS KILBURN, and CHENEY KILBURN, Burlington, Vermont. *Claim.*—The bending of wood by forcing it endwise of its fibres into a mould, which is closed on all sides, but has an open end, is curved longitudinally in the required form, and has the dimensions of its internal transverse section of the piece of wood, thus causing the wood to be confined in a lateral direction during the bending process, for the purpose of preventing the separation of the fibres.

*For an Improved Method of Bending Wood.* THOMAS BLANCHARD, Boston, Mass. *Claim.*—1. Subjecting the timber to pressure upon all sides, and continuing the same while it is being transferred from the straight trough to the curved mould. 2. The machine for bending timber, consisting essentially of the following elements, or their equivalents, in combination:—1. The bending lever. 2. The device for compressing the timber while it is being bent. 3. The curved mould in which the pressure is continued, and in which the timber is removed from the machine after the bending operation is completed.

\* selected from the list of patents published in the Journal of the Franklin Institute of Pennsylvania.



*For an Improved Mode of Securing Sheet Metal Coverings for Roofs.* WM. H. TRISLER and JOHN STEWART, Fairview, Pennsylvania. *Claim.*—The double lapping joint for uniting the sheets of metal without solder. Also, the combination of the scroll and wing edges, for uniting the strips of covering.

*For a Self-Regulating Draft for Chimney Tops.* JOSIAH A. BOYCE, Lee, Mass. *Claim.*—The application to the top of a chimney or a draft flue of a frame, having one or more turning slats or dampers hung in it, said frame being provided with a rudder, so as to be always turned to a proper position by the action of the wind, and the dampers being combined with a spring mast with sail on top, so as to be closed more or less by the action of the wind, and automatically opened during a calm.

*For an Improvement in Cast-iron Pavements.* GEORGE M. RAMSAY, City of New York. *Claim.*—The iron hexagonal paving blocks with legs or lugs below, when united and secured by the iron clips or bands, so as to form the flexible pavement.

*For an Improvement in Bridges.* ISAIAH ROGERS, Cincinnati, Ohio. *Claim.*—1. The formation of an arch whose voussoirs consist of one or more ranges of tubes in vertical planes, held in position by the described radial plates with confining flanges, the tubes of each component are being gradually displayed and enlarged from the crown of the arch each way, the enlargement in one direction and the contraction in the other direction, being such as to preserve a circular section throughout, or gradually ovaling from the haunches by a vertical enlargement towards the ends, and a corresponding contraction towards the centre of the arch, according to circumstances. 2. In combination therewith, the described mode of staying and bracing together the several ranges of such tubular voussoirs.

*For an Improvement in Machines for Mixing Mortar.* BENJAMIN F. FIELD, Beloit, Wisconsin. *Claim.*—The use of a revolving box of a cylindrical or other form, made to roll upon the ground for the purposes of mixing the mortar by the action of the cross-roads, whilst at the same time it serves to carry the material from place to place, in combination with the method for discharging the mortar from the revolving box.

*For an Improvement in Artificial Stone.* ST. JULIEN RAVENEL, Charleston, South Carolina, patented August 12th, 1856; re-issued October 14th, 1856. *Claim.*—The composition of marl and slaked lime, substantially in the proportions for producing an artificial stone, or a substitute for stone and bricks.

## Books Received.

### VARIORUM.

"What is to be done with our Criminals" is an important and anxious question, not only asked, but ably responded to, by Mr. Charles Pearson, the City solicitor and late M.P. for Lambeth, in a shilling pamphlet under this title, published by Hall and Virtue, of Paternoster-row. It is in the form of a letter to the Lord Mayor, and also contains the report of a speech by the author in the House of Commons on the same question. Classing the subject under three heads, Mr. Pearson graphically describes—1. The system of past days, or the cheap and cruel system. 2. The present, or the expensive and effeminate system. 3. The future, self-supporting, or "labour and appetite system." He urges—and in this we need not tell the readers of the *Builder*, that we perfectly agree with him—that criminals ought to work for their own provision, that prisons ought to be self-supporting, and not an eternal and intolerable burden on the ratepayer. This ought to be so even with the honest but unfortunate poor in the work-houses,—much more with the dregs of the population in the prisons. The amiable and excellent Howard would seem to have not only at last done all the good he intended to do, but much more (and that not all good even to them) than he ever even dreamed of. Such is the power of a single determined will over successive generations: the amelioration of the "cheap and cruel" system has resolved itself, under the well-meant exertions of Howard, into "the expensive and effeminate system," and now prison life is a state of luxury and idleness, when contrasted, not only with the miserable provision and accommodation for the honest pauper in the workhouse, but even with those of the employed labourer and artisan. Witness the progress of the Lord Mayor and the City architect, and other City authorities, the other day, first to the workhouse and its "casual ward," and then to the prison: here was in itself a virtual protest against so absurd a state of things. "Look here," as Mr. P. exclaims classically styles it, a prisoner is "not compelled, nor even persuaded, but only permitted" to work. "There are only two cases of refusal to work; one was a London thief, who came from Ascott, and

lived by the light-fingering trade of pocket-picking: he was afraid that, by handling the pump, it would spoil his hand for his trade." So says Mr. Field. Of course, this light-fingering gentleman, "not being compelled, nor even persuaded," to work, declined the pump (at which, by the way, *ten* scamps occasionally recreated themselves at the wholesome labour of *two*). Under Government regulations, therefore, a London thief is kindly aided in his laudable desire to avoid spoiling his "skilled hand" for his trade, while at the same time luxuriously fed and attended, so as to sustain his physical stamina to the same worthy end. While this state of things prevails in the criminal prison, what have we going on at the workhouse? The honest and able artisan must either blister, harden, and destroy his skilled hand, and blind his watchful and educated eye, by breaking stones for a mere pittance, or must starve and die—he and his wife and family! Can the public "look on this picture and on that" without the excitement of strong indignation and disgust? So ridiculous and absurd a subversion of all right principle can no longer continue: something *must* be done; and Mr. Pearson, or any one who will help towards that end, well deserves the national thanks for his exertions.

In the very next publication which happens to come before us, we have various interesting details of prison life abroad,—that is, when those princes in crime who luxuriate in the "prison palaces" of England go abroad at the public expense to recruit their health and dispel their ennui: we allude to a field officer's very readable volume on "Bermuda" as "a Colony, a Fortress, and a Prison," just published by Messrs. Longman and Co. In describing the life of the felon at Bermuda, the author involuntarily exclaims,—"How many thousands are there of good character in London, whose hours of labour exceed those of these condemned felons! The printers' devils, for instance, who work from eight in the morning till eight at night, with only one hour's relaxation for dinner, undergo more severe and unhealthy toil than any out-of-door convict labour practised at the present day." And again, when the contrast forces itself upon his professional notice, between the duties of the gallant defender of his country and those of its vile plunderer, or even murderer, the "field officer" says,—"If we compare the food and work of the convicts with those of the soldiers on guard and on sentry in the same island, the position of the former will excite no compassion in the tenderest breast. The convict is allowed, daily, one pound and eleven ounces of bread (1), one pound and a quarter of meat (1), and half a gill of rum (1). He has cocoa sweetened (poor fellow) for breakfast, and a supper equally good. The soldier is limited to one pound of bread and one pound of meat (1), and buys his own groceries and liquor. The writer was assured by an eye-witness, that on the first serving out of the increased allowance of bread—for it used to be only one pound—the convicts, in contempt, threw the surplus overboard." Can it be wondered at that under such a system, "these facts have long been so well appreciated by soldiers that crimes were formerly not unfrequently committed by them with the express desire of being transported"—a contingency which it required the lash to put an end to,—the lash which never fails, of course, upon the sacred shoulders of the true "devils" of society. One does not need to go to Bermuda however, nor even amongst the military for such instances, and such *Government enticements to crime*: they are but too plentiful at home and in civil life.—Amongst Educational books received, we note one, titled "Every Child's Scripture History," adapted for junior classes, from Dr. Kitto and Miss Corner's Scripture History, simplified, by Edward Parr (Dean and Son, of Ludgate-hill, publishers); and "The Stepping-Stone to French History," by "A Teacher" (Longman and Co. publishers). Both of these seem to be of good of their kind; but why does "A Teacher" exclude the Bonapartes as a reigning dynasty from those commemorated as the French dynasties: is it because the Bonapartes are *rulers* rather than mere *reigners*?

—A second edition of Mr. Peter Burke's "Compendium of the Patent Law as now amended" (Benning and Co. 43, Fleet-street, publishers), has been called for, and has now appeared. The announcement of the issue is all we need say of such a work by an author like Mr. Burke.—A Tract, giving wholesale warning as to "The risks to life and property attending the practice of racing on the ocean," has been published by Nissen and Parker, of Mark-lane. In these *fast* times such a warning is certainly needed.—We must place amongst the books received a very complete and beautiful edition of the "Poetical Works of Lord Byron," in one volume of 685 pages, just published by Murray. Byron is the architectural traveller's poet, and this is exactly the version for the bag or the knapsack. It has the advantage of a very full index; and for frontispiece, a sketch of Thorwaldsen's statue of the

poet, now in the library of Trinity College, Cambridge.—Adeock's Engineer's Pocket-Book, for 1857 (published by Simpkin and Marshall), contains many valuable tables, formulae, and other knowledge, including a very useful chapter on the strain and stress of materials.

## Miscellaneous.

**SUBMARINE TELEGRAPH VIA THE RED SEA.**—There is a project, said to be supported by influential names, for establishing a telegraph to India in continuation of the system of telegraphs decided upon by the English Government for the Mediterranean, and which is to terminate at Alexandria. The proposal is to lay a number of wires across Egypt and down the Red Sea to Aden, whence they will run parallel to the south coast of Arabia, and terminate at Kurrachee, to which the Indian telegraphs extend. Complete powers are said to have been very lately obtained from the Ottoman and Egyptian Governments for the purpose.

**SALE OF A QUARRY BY AUCTION.**—Messrs. Winstanley submitted for sale by auction, at the Mart, on Tuesday last week, a freehold estate, consisting of about seventeen acres of land, bounded by the river Derwent, on the road from Cromford to Bakewell, about two miles from Matlock, Derby. The auctioneer described the land as possessing an abundance of limestone of a very superior quality, containing properties peculiarly desirable in the process of smelting iron. Two quarries, he added, have been worked, and there exists a great demand for the stone. Fine marble of various kinds has been discovered, and, no doubt, could be worked to great advantage. Convenience is facilitated by proximity to the Matlock and Bath railway station and the Cromford Canal. There was a great attendance of capitalists, and a spirited competition. The biddings commenced at 2,000*l.* and the lot was eventually sold for 4,690*l.* or upwards of 275*l.* per acre.

**STRIKE OF MANCHESTER OPERATIVE CARPENTERS.**—A meeting of master builders was held at Manchester on Monday week, to receive a deputation of workmen respecting the strike in the shop of Mr. Robert Neill. Five of the workmen attended as a deputation, and requested the suspension of the new rules. The masters, after a lengthened discussion, "Resolved, as this meeting utterly disclaims any intention of taking the slightest advantage, and believes the new rules have been drawn out in a spirit of fairness to the men, and certainly contain nothing which can justify the extreme step taken by the workmen, the masters decline to withdraw the rules. At the same time, if the men on strike resume work, they have no objection to listen to any proposals which may emanate from the men; and, if it can be shown that any infringement has been made on the rules of 1846, the masters are ready to listen to the representations of the men, and, if necessary, to make an alteration."

**REPAVING HIGH HOLBORN.**—This great thoroughfare will be closed to carriage traffic for several weeks, in order that the wood pavement may be taken up, and the carriage-way laid with Aberdeen granite cubes on a bed of concrete filled up with grouting, and new footways laid down from the city boundary to Brownlow-street. A resting-place is to be made in the carriage-way opposite Chancery-lane for passengers crossing. The works are to be executed within fifty-six days, under a penalty of 50*l.* a-day.

**LECTURE ON ART.**—On Wednesday evening Mr. Henry Ottley gave, at the Marylebone Institution, a very interesting lecture, entitled "An Hour with the Old Masters." It was a history of painting, in which he traced the growth or development of the art from the earlier ages to the time of its greatest glory in the days of Correggio, touching in each instance on the distinctive merits of the respective schools, and on the works they have left behind them. P. R. B.-ism came in for a fair share of his comments amongst other art topics of the present day.

**MOULDED BRICKS.**—It is surprising that so little use appears to be made of moulded brick for ornament in architecture in the metropolis, although it is a singularly beautiful material, having a rich colour, and taking a very sharp edge. It is also extremely durable. I have used moulded bricks very extensively in building myself a house in Surrey, and should be most happy to show specimens of them to any architect or builder who would take the trouble to call at my house in town between five and six o'clock on any day in the week. They are not simply common-sized bricks, cut in various shapes, but are in large masses as heavy as a man can lift. This adds greatly to the value of their appearance. My hope is to see them used in place of stucco,—one of the vilest materials that has ever disgraced architecture.

CHARLES BUXTON.

7, Grosvenor-crescent, Belgrave-square.



**EXETER HALL.** The annual meeting of members of the Sacred Harmonic Society was held at Exeter Hall, on Tuesday evening, February 24th. In the course of the evening an appeal to the directors of Exeter Hall was unanimously agreed to, calling on them to give attention to the representations so frequently made by the public press and by the various societies meeting in the hall, to provide additional means of ingress and egress, and expressing a strong opinion as to the duty of the directors of Exeter Hall to yield to representations so frequently submitted on the subject.

**THE SOULAGES COLLECTION.**—Messrs. P. Gralan, J. G. Crace, John Jackson, and E. Bond (of Willow's), have addressed a letter to Sir Benjamin Hall, calling his attention to the Soulages Collection, urging, strongly the great importance of the formation of a museum or collection of such objects and examples of industrial art, and the immense advantages that would necessarily result therefrom in the progress of many branches of our manufactures. They urge justly that "the study of objects such as are comprised in this collection is as necessary to the education of the art-workman as the study of ancient monuments and edifices is to the architect, the remains of Greek art to the sculptor, or the works of the old masters to the painter," and call upon Sir Benjamin to lend the influence of his judgment and taste, and his voice as the representative of a numerous and important constituency, to induce the Government to become the purchasers of the Soulages Collection, and thus to assist in rendering an important service to the public.

**THE FREE SEATS IN ST. JAMES'S, PICCADILLY.**—Seeing the article in your publication about the alterations in this church, wherein no small parade is made of the additional free sittings gained for the poor by such alterations, I am induced to inquire of you whereabouts and of what sort are these free sittings? No one would suppose, from the article in your paper, and from previous articles in other publications on the same subject, which I have seen, that these much-valued free sittings are, after all, nothing more than "a joke,"—fit receptacles only for the cobwebs, dust, brushes, and old matting of the sexton, they being in odd, out-of-the-way corners, at the extreme western ends of the aisles, and of very different construction to the high, purl pews in their front. It is the old story over and over again—a great cry and little work. There will be no free accommodation for the poor in the parish church of St. James, in the proper and true sense of that much-abused term, unless and until that church is thrown open to all alike, free of charge,—as also of the frowns or smiles of sour-looking, fussy pew-openers,—until, indeed, it may be truly written over the doors,—“Here the poor and rich meet together: the Lord is maker of them all.” All besides is a mere make-shift, invitations, trumpery, half-and-half, and waste of money affair. Let me add, that I know of no church less adapted for a solemn rite of the church,—such, for instance, as a confirmation,—as this so-called *chef d'œuvre* of Sir C. Wren, who certainly would have been unable to see from his gallery the occupants of these newly-gained sittings, as they, poor souls, are as little able to “see or hear the preacher,” which is said to have been a *sine qua non* with him in the arrangement of his churches. I attach, however, more importance to the doing away with all divisions and indignant distinction in the House of God, than to the mere seeing or hearing the preacher.—G. H.

**THE SOIL IN ST. JAMES'S SQUARE.**—A correspondent, “Geologists,” says, “Some three years ago a sewer was formed in the southern portion of St. James's-square. Can you tell me to what depth the excavations were made, and what was the thickness of the bed of sand through which they worked?” Mr. Lovick obligingly informs us, in reply, that from inquiries of the parties who superintended the works, and examination of the contract sections, the depth of excavation for the sewer appears to have been from 21 to 22 feet; that 5 feet of metalling and made ground were first met with; and then sand, which continued uninterrupted to the bottom of the sewer. The thickness of the sand-bed cut through was from 16 to 17 feet; but its limit was not reached.

**THE PEOPLE'S MONDAY EVENING CONCERTS,** at St. Martin's Hall, are still proceeding, and afford innocent pleasure to many at a low cost. The Lord Mayor has forwarded a donation of 5*l.* after attending one of the concerts, and has promised to pay another visit with the Lady Mayors.

**CAMBRIDGE ARCHITECTURAL SOCIETY.**—The first meeting of the above society for the Lent Term was held on Thursday, February 19th, when Mr. H. T. Kingston, Trinity College, read a paper “On Erith Church Kirt,” the purport of which was to discuss the question whether a recess in the east wall above the altar was a credence or not. The Rev. G. Williams exhibited a design for a stained glass window, by Mr. A. Bell, to be placed in St. Columba's College, Dublin.

**IRON, HARDWARE, AND METAL TRADING PENSION SOCIETY.**—This society, established in 1843, for the purpose of affording permanent relief to deserving and necessitous members of the several trades and their widows, and which now numbers twenty-five men and forty women pensioners, at an average annual cost of 1,275*l.* 15*s.* held its first ball on Monday evening, at Willis's-rooms, under the patronage of his Grace the Duke of Norfolk, &c. The zeal and energy of the members of the trades in forwarding the interests of this society may be inferred from the fact that nearly 400 were present.

**OXFORD ARCHITECTURAL SOCIETY.**—At a meeting on the 18th ult. in consequence of the indisposition of the reader of a paper announced, Mr. James Parker read one on the “Study of Architecture Historically,” in which he proposed that the society should turn its attention more than it had done to this branch of the subject. He reviewed the exertions of the society during the last seventeen years, and, according to the *Oxford Herald*, gave it credit for having gradually instilled into builders and architects a love for, and an appreciation of, the forms of Gothic architecture. It seemed to him, however, that the society had another work to enter upon, it had to teach the proper application of these forms, which he contended were still often misunderstood. He considered that, by studying the history of architecture more closely, we should comprehend the origin and meaning of these forms, and so apply them more truthfully. And “truthfulness” he considered to be the great thing still wanting in many of our finest modern Gothic edifices. He went on to show the many points in which history was, as it were, the key to architecture, and how by its study much light would be thrown upon the plans and designs which we find remaining, and from which we copy. In the conclusion, he proposed that in the course of the ensuing term they should make Oxford their special study, and in the history of its halls, colleges, churches, &c. discern the history of the times which gave rise to them, or in which they were built. One member in each college would come forward and give them the history of his own college, and give them the history of his own college, and the connect its architecture, as far as possible, with the history of the times, or with some of their great leading men, such as Merton, Wykeham, or Weynesfete, they would produce such a history of the university, and city as in no other way could be produced; they would add those historical studies which are now so eminently reviving in Oxford; and finally, while assisting the study of architecture, make their society once more to be fit as an earnest, working body of men.

**THE ROYAL ACADEMY.** The subject selected for the gold medal competition of this year, both in sculpture and painting, is “The Good Samaritan.” The number of competitors will be large, and we hope that the modification of treatment necessary and peculiar to each branch of art will be well studied by the students, for if such be the case the similarity of subject in both branches may afford a valuable lesson.

**THE MANCHESTER MECHANICS' INSTITUTION EXHIBITION.**—At the 33rd annual meeting of the Manchester Mechanics' Institution, and the last to be held in the old buildings in Cooper-street, a report, read by Mr. Hutchings, the secretary, mentioned that the receipts from the Exhibition of Industrial Art in support of the fund for defraying the cost of the new building had reached nearly 7,000*l.* and would probably leave, after defraying all expenses, the sum of 4,000*l.* towards the reduction of the debt.

**NOTICE TO WORKMEN ON DISCHARGE.**—At the last County Court at Walsall, an action was tried in which Charles Bott, a carpenter, sued Messrs. Lloyd, Foster, and Co. in whose employ he had been, for 5*l.* 1*s.* wages. Judgment had, in a prior action, been given for the defendants. The point on which the question turned was, whether masters could discharge workmen when from any cause they had no work for them, without giving them a fortnight's notice. It was proved to be the practice of the defendants to require that notice from their workmen before they left. The jury gave a verdict for the plaintiff for the whole amount claimed,—5*l.* 1*s.*

**PHOTOGRAPHY AND EMPLOYERS.**—A correspondent suggests that photography might be usefully resorted to in the case of applications for situations of trust, seeing that the character of an individual can so readily, in the majority of instances, be determined by his outward appearance.

**LIVERPOOL RECREATIVE COMPANY (LIMITED).**—The objects of this society are to establish a house of entertainment for the working man, similar to that in Birmingham, and where, at a trifling cost, the artisan may enjoy physical and mental exercise (chess, gymnastics, &c.), hear a popular lecture, read a light periodical, drink a cup of coffee, and indeed be enabled to indulge in every sober and rational enjoyment at a small cost.

**LEICESTERSHIRE ARCHITECTURAL SOCIETY.**—At a meeting of this Society on the 23rd ult., the Rev. Mr. Greeley read a description of what was said to be probably the most ancient mansion in Leicestershire, accompanied by two views of it, with ground-plan and details. This is Donington-on-the-Heath, in the parish of Ilstock. In the time of King Henry III., the heiress of William de Sees, of Donington, married Alexander Villiers, of Brooksby. To the earlier part of that king's reign the mansion was ascribed. It consists of a square building, with smaller projecting buildings from it at the back. On the ground-floor was the kitchen and store-room, and above this the hall or apartment ordinarily occupied by the owner and his family. The entrance to the mansion led into this upper room, and was accessible by means of an external staircase, probably of wood, all traces of which are gone. The original windows are narrow lancets, with plain and trefoiled heads, while others are square headed. This mansion has not been noticed by recent writers upon domestic architecture. The views of it mentioned will appear in the volume of the Anastatic Drawing Society, for 1856.

**STRIKE AT THE BIKENHEAD DOCK WORKS.**—From some cause of disagreement the navies employed by Messrs. George Thompson and Co. the contractors, in carrying out the works for the deepening of the Great Fleet at Bikenhead, recently struck work. It seems that last week until eight o'clock on Monday morning these men, the tipplers and drivers, were at work, but that after the breakfast half-hour they refused to turn to unless their wages were raised from 2*s.* 8*d.* and 2*s.* 9*d.* a day, of winter working hours, to 3*s.* for the longer day's work, from six to six, with half an hour for breakfast, and an hour for dinner. They urged that their work is more arduous than that of the platelayers and mechanics, who receive 3*s.* 4*d.* a day. The police were first of all called into requisition, for on Monday the turnouts compelled by threats all the men who remained at work to desert. On Wednesday morning 600 of the turnouts came down to the works in a body, and, finding a few men at work, ran after them, but no violence was used. Riotous proceedings, however, having afterwards taken place, a detachment of the military was called in to check the disposition to violence which was manifesting itself. Messrs. Thompson had made arrangements for bringing men from their various contracts in different parts of the country to replace those out on strike. The men complain that it was falsely represented that they resisted the introduction of English labourers, the fact, as they say, being that both English and Irish were on strike for a rise in wages. The magistrates and police repeatedly pointed out to them that whatever was the cause of the strike, they had no right to intimidate any one or to force themselves upon their former employers. They have since returned to work.

**WORKING MEN'S FREE EMIGRATION AID SOCIETY.**—A meeting has been held at the Temperance-hall, Broadway, Westminster, to explain the objects of this society to such of the working classes as chose to attend. The society has been started by some few working men who have taken part in the recent proceedings of the unemployed, and who have obtained the patronage of several influential gentlemen in support of the object in view. The hall was crowded by a very orderly and attentive audience, almost exclusively of the labouring class. On the platform were several gentlemen, who take a warm interest in their welfare, including Mr. H. Drummond, M.P. the Rev. F. D. Maurice, principal of the Working Men's College, and others. The chair was filled by Captain Neale Porter, and several resolutions, promotive of the objects of the association, were passed, and a list of subscriptions was read. One gentleman, it appears, has offered 500*l.* if the society will raise 2,000*l.*

**WIDTH OF STREETS IN THE METROPOLIS.**—The Metropolitan Board of Works proceeded on the 27th ult. to discuss the proposed by-law as to the formation of new streets, and got through three out of the ten clauses.

**THE GENERAL FEATURES OF PORTSMOUTH HARBOUR.**—On the 20th ult. Mr. H. Wood, Director of Works in H.M.'s Dockyard at Portsmouth, delivered a lecture to the members of the Philosophical Society there on the General Features of Portsmouth Harbour. Mr. B. W. Carter, President of the society, took the chair. In the conclusion of his lecture, Mr. Wood pointed attention to the fact that Portsmouth is a tidal harbour, and that for its proper preservation it is absolutely necessary to admit as great a tidal volume into it as possible; for it is by the back scour of the water that its various channels are kept open and free; and he added that a great benefit could be rendered to the harbour by introducing more “back water” by the Portsmouth channel from Langstone, and that the narrow tongue of land at Haslar-beach, insignificant as it might appear, was the salvation of Portsmouth harbour.



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# The Builder.

Vol. XV.—No. 736.

ANY, doubtless, remember the time when the only shape in which India-rubber showed itself in this country was that of crooked and twisted little bottles, off which slices were cut for the use of those who desired or required to obliterate pencil-marks on paper. Even the first decided step towards the final management and manufacture of this highly promising but then somewhat tough and refractory material displayed itself to the eye of the general public in the shape merely of neater square cuts in the place of the old bottle slices, but still with the sole purpose of rubbing out pencil-marks. It was but natural, under such circumstances, that this singular substance should acquire the name of "rubber," which it still retains, although from no want of specific names of its own, such as the "hevee" of Esmeraldas, the "siringa" of Guiana, and the "caoutchouc" of the Mainas, with which last rather repulsive choker of a name it has been somewhat unavailingly baptised, notwithstanding the possession of more euphonic cognomens, both in America and in India, such as jintarvan, saikwah, doll, and others besides either hevee or siringa.

Rubber, as we shall continue to call it (and for so doing we have the authority and example of one who has himself been called "the father of the India-rubber manufacture," namely, Mr. Thomas Hancock, of the firm of Macintosh and Co.), is an inspissation of the creamy juice of no more than one species of tree; and, as already hinted, is found rather plentifully in parts of the tropical world widely asunder. There are even vines which yield a similar juice. In the estuary of the Amazon, on most of the great cluster of islands there, it is obtained in large quantities, and the mode of procuring it on these islands is thus described in a recent work on South America:—"The season for the labour is from July to January, for the river is then low, and at other times the water is so high as to overflow all the low lands, where the India-rubber tree grows, so that the process cannot then be carried on. The tree is tall and straight, with a smooth bark, and sometimes grows to the diameter of 18 inches and even more. In order to collect the juice a longitudinal gash is made in the tree with a hatchet or tomahawk, and a wedge of wood being inserted, to keep the incision open, a small cup of clay is stuck to the tree just below it. These incisions are made all round the tree, and the little cups form a circle round the trunk. In these cups the juice, of the colour of milk continues to run four or five hours, and each cup is found to contain from three to five table-spoonfuls."

India-rubber came first into special notice about the beginning of last century, moulded into the bottle shapes already referred to, and even into those of animals. It was sold as high as a guinea an ounce; but scarcely anything was known as to its history or origin at that time, except that it then came from America (as well as, as probably inland, then and previously, from India), till De la Condamine sent an account of it to the French Academy in 1736, describing it as the inspissated juice of a tree, and called by the natives "hevee." It is now known that the best kinds of rubber-bearing plants in the West and East are the *siphonia elastica* of the

Amazon, the *hancornia speciosa* of Pernambuco, and the *ureola elastica* of Borneo, Pulo-Penang, and other East-Indian islands. The cultivation of these or other sources of this most useful, and, indeed, now almost indispensable, article has become a question of anxious consideration and of great importance. In America the destruction of the rubber-trees is prohibited by law, a practice having once prevailed of strangulating and killing them while withdrawing the sap. In some of the East-Indian localities where they abound, also, care is doubtless taken of the trees; but in other districts it is but too likely that the well-known fate of many of the gutta-percha trees may have been shared by the India-rubber yielders. It may turn out, as we have ere now suggested, that organic chemists may discover how to make an artificial rubber from some inexhaustible source, since a substance very similar has been produced in experimental chemistry, from bitumen, and, if we remember rightly, sulphur, in the acid form; but, till so fortunate a discovery be made, there cannot be too much care and trouble taken in the preservation and cultivation of the rubber-trees.

The importation of the milky or creamy juice of the rubber-tree was at one time regarded as a great desideratum. Some of it was imported by Mr. Hancock, but he found that before it reached this country the solid and fluid portions had separated, so as to frustrate the intention in view. As, moreover, the solid part, or the congealed rubber, formed less than fifty per cent. of the whole bulk, it was at length looked upon as a hopeless task to import the juice. Compensatory processes afterwards rendered this failure of less importance, perhaps, than it once was; but still it would seem, from a scientific examination, by Dr. Faraday, of the properties of some juice which was safely imported (in the hollows of bamboo canes, if we mistake not), more than thirty years since, that great advantages would accrue from having the opportunity of dealing with the raw material in the shape of the creamy juice; and in these, our own, days of daring and cosmical schemes and speculations, it is surprising that no enterprising India-rubber manufacturer has gone to the fountain head, by establishing the requisite works in convenient vicinity to the native tree-tapping process itself, either in South America or in the East Indies. In confirmation of the idea that manufactures, of the beauty and purity of which we have as yet little conception, might be realized, were we only able to act freely and by wholesale on the raw juice, as it flows from the tree, we shall just dip a little into Faraday's report on the juice which he examined.

One most important feature was the facility with which the rubber-juice and rubber could thus be washed with mere water, over and over again, till both rubber and water were left perfectly pure. In this condition the creamy juice became "perfectly white," and portions of it so continued even for a twelvemonth, the sap being thus more easily preserved in a diluted than a concentrated state. When evaporated, either on paper, or on a capsule or otherwise, the rubber was left in its elastic state, and perfectly unaltered, except as regarded purity. On absorbent surfaces such as plaster of Paris the water was rapidly abstracted, and the rubber congealed into a mass retaining the form on which it was cast, and beautiful medallions were thus made. At first the rubber congealed as "a soft white solid, almost like curd." From this the residual water could be partly extracted by mere pressure, when it contracted, became compact, and assumed the elastic state, though still soft, white, and opaque. The opacity was not an essential property, however, being attributable to water not yet exuded. Exposure to air completely desiccated it, and then it appeared "as a per-

fectly transparent, colourless, and elastic body," except in thick masses, when a trace of colour (that is, of white opacity) still remained.

"No appearance of texture," continues the report,\* "can be observed in the pure transparent caoutchouc: it resembles exactly a piece of clear strong jelly. All the phenomena dependant on its elasticity, which are known to belong to common caoutchouc, are well exhibited by it. When very much extended, it assumes a beautiful pearly or fibrous appearance, probably belonging to the effects which Dr. Brewster has observed elastic bodies to produce when in a state of tension upon light. When it has been extended and doubled several times, until farther extension in the same direction is difficult, it is found to possess very great strength."

In trials made to give it colour, the body colours were found to answer best.

"Indigo, cinnabar, chrome-yellow, carmine, lake, &c. were rubbed very fine with water, then mixed well with the pure caoutchouc, in a somewhat diluted state, and coagulation induced either upon an absorbent surface or otherwise. Perfectly coloured specimens were thus obtained."

A very instructive and interesting volume of personal experiences, difficulties, and discoveries, in the management and manufacture of rubber, has recently been written by Mr. Hancock, whose name is so intimately associated with the origin and progress of this manufacture.† The author, who is now upwards of seventy years of age, and appears to have survived all his original partners and peers, has been engaged for the last six and thirty years in the manufacture of India-rubber. He attributes his success in this branch of manufacture mainly to a practical knowledge of mechanical manipulation which he had acquired in early life, and he thinks that this, much rather than chemical knowledge, was what was required in the circumstances: indeed, the peculiar difficulties which he had to overcome, and the result, on the whole, both of chemical and mechanical manipulation, as applied to rubber, seem to corroborate Mr. Hancock in this opinion. Of chemical knowledge he says he had almost none; and it is probable that, had he had more, those curious and unlikely mechanical operations by means of which the rubber was made to assume so many shapes, and particularly the mechanical process of "mastication," or "chewing up," into integral masses, would never have been discovered at all. At first, however, he was imbued with the notion that to make it useful, a good solvent was what was wanted, and he fortunately, but almost unaccountably, failed in then obtaining such a solvent, although he used oil of turpentine, which, when pure, and heated, is a good solvent, and dries perfectly off it.

First of all, the original "bottles" were merely cut up into various elastic strings, or tapes, and other forms, adaptable to wearing apparel, such as the backs of gloves, to draw these together, so as to cause them to fit neatly. In course of time, the waste became a matter for serious consideration; and, failing the discovery of an adequate solvent, various modes of procedure were adopted in the attempt to "work it up." Papin's digester only yielded him "a thick fluid of the appearance of treacle," doubtless containing the since-discovered solvent, named caoutchoucine, which is obtained in the distillation of rubber itself. Newly cut

\* Quarterly Journal of Science and the Arts: "Royal Institution of Great Britain." Vol. xxi. No. 41. London: J. Murray. 1826.

† Personal Narrative of the Origin and Progress of the Caoutchouc or India-rubber Manufacture in England. By Thomas Hancock, of the firm of Charles Macintosh and Co. London and Manchester: with engravings, to which is added, some account of the plants from which Caoutchouc is obtained, its chemical analysis, statistical tables, &c.;—with an Appendix, containing the specifications of the author's patents. London: Longman and Co. 1857.



pieces, it was soon found, would unite, but the great source of perplexity was the outside cuttings of the irregular and small bottle forms. Small squares were punched out of the waste, however, and put together under severe pressure in boiling water, and thus solid blocks got, whence thin sheets could be cut with proper knives, supplied with water, which Mr. Hancock had soon found to be an indispensable adjunct in cutting the rubber. Still, however, the outside waste cuttings remained to be dealt with. It occurred to the indefatigable experimenter that were he to make mince-meat of these cuttings, the fresh cut or torn surfaces would be greatly multiplied, and he invented a mincing-machine, not unlike the recent invention whereby legs of beef are minced for sausages, in order to test the utility of his idea. The result was a very odd one: instead of thus being enabled to tear the waste cuttings into still smaller pieces, he was astonished, on looking for the shreds, to find that not a vestige of a shred remained in the mincing-machine, — nothing, in short, but a single solid ball of rubber! This was even more than he had stipulated for or anticipated: he found that the ball when cut open presented a marbled or grained appearance, exhibiting the shreds curiously joined together, and the union almost complete. The ball was wisely put in again to see what the machine meant to do with it. The result was that the ball became very hot, and on cutting it open at length, all the graining had disappeared, and the whole had become a solid homogeneous integral mass, which Mr. Hancock soon found out how to pass under rollers while hot, and so to convert into sheets and other handy shapes. He ultimately had constructed a more complete and perfect monster "masticating machine," or "pickle," as it was slyly called, which converted the whole bottle-rubber into solid cylinders, which ultimately contained 150 to 200 pounds weight of rubber each, to be "squelched" into square blocks 6 feet long and 6 or 7 inches thick, whence beautiful sheets were cut, some much not more than the eightieth part of an inch in thickness.

While the "masticator" was thus being brought to maturity, various other improvements in the manufacture, and numerous adaptations of the material to new purposes, and patents thereon, were simultaneously in progress; but the grandest discovery of all was the vulcanization of the rubber. This, however, Mr. Hancock would appear to admit, was not made first of all by him, although, acting on a hint originally got in the shape of a few bits of evidently vulcanized rubber brought from America, he set to work, under the idea that sulphur seemed to be somehow used in its preparation, and at length, after a long course of experiments, found out for himself how to "vulcanize" the rubber, so as to render it independent, in its elasticity, to a great degree, both of cold and heat. The vulcanization of rubber is a curious subject, inasmuch as chemists are of opinion that the unchanging elasticity thus produced does not arise from any permanent combination of the sulphur used with the rubber itself, but from an allotropic change in the molecules of the rubber alone. When hard and horny rubber is thus made, however, by additional doses of sulphur, there doubtless must be a specific combination of the sulphur with the rubber. Mr. Hancock found that when rubber is blended with melted sulphur, the absorption of the sulphur takes place at about 240 deg. and then, by raising the temperature to 270 deg. or 280 deg. and allowing the rubber to remain in it for about an hour, it becomes "vulcanized." This, he says, is certainly the most simple mode of producing "the change," as he calls it, and also as effectual as any. There are other processes analogous to this of vulcanization, and called galvanization, mineralization, metallization, thionization, &c. by all of which the process of vulcanization is said to be meant, and in all of which sulphur, in one form or another, is said to be used. One of the best of these other processes appears to be that of Mr. A. Parkes, patented in 1845 (Mr. Hancock's discovery was patented in 1843). This the patentee called "converted rubber."

"The process," says Mr. Hancock, "is an elegant and simple one, and consists in immersing the rubber

in a solution of the chloride of sulphur in bisulphure (bisulphure?), of carbon, or pure coal naphtha, cold, no heat being required: a thin sheet of rubber is by this means "converted" in a minute or two \* \* \* the process is capable also of producing the horny state, similar to hard vulcanizing. The results of this process are as mysterious as those of vulcanization: they could not have been anticipated: they cannot be accounted for. \* \* \* The process of Mr. Parkes, enables us to give to vulcanized articles colour of every tint, and a delicately smooth surface: these converted surfaces also print well, and the most delicate impressions from copper-plate engravings are produced from them: gutta serena, and compounds of this substance with rubber, are equally susceptible of improvements in the same way."

The hard vulcanized rubber Mr. Hancock seems to have produced as well as the soft; but the former, if we mistake not, is exclusively the patent of Mr. Goodyear, who is the American Hancock, if we may so speak, and has also done an immense deal for the rubber manufacture, both in soft and in hard material. We are somewhat inclined, however, to agree with Mr. Hancock, in thinking that too much use may be made of a restricted material like India-rubber, in a form such as that of hard or horny vulcanite, in which its peculiar and invaluable property of elasticity is disguised or rendered useless, and even its impermeability is made of no avail. There are plenty of other materials, of a non-elastic nature, which will come to be substituted for hard vulcanite, should rubber become scarcer or dearer; and it is, perhaps, a question whether the innumerable products into which hard vulcanite is already being converted be not even now enhancing the price of the elastic and impermeable products of the rubber manufacture. Besides, hard vulcanite is really not so well adapted as other and cheaper materials are, at least, for some purposes: hair combs, for instance, made of vulcanite, are by no means so pleasant or effectual in use as the old horn ones, and are sometimes, we know, cast aside on that account.

It will easily be imagined that the introduction of so new and useful a material as vulcanized rubber would soon attract the attention of the ingenious and inventive. Without consideration of what has been done in patents of applications since the Great Exhibition of 1851, Mr. Hancock mentions that there had then been upwards of fifty patents taken out by various persons, who had adapted and applied it to their various purposes. To enumerate these, or even a selection of these, and of the innumerable other purposes to which India-rubber has been devoted from first to last, is here out of the question, more especially since it would seem that almost everything but good tender legs of mutton have been, are being, and will yet be, made of this protean material. We have sometimes even ruminated on the possibility of superseding the silkworms by the production of artificial silk from purified rubber in combination with something that would take away its peculiar elasticity while retaining its powerful tenacity and perhaps contributing the silky varnish. This idea suggested itself, we remember, upon one occasion while experimenting with India-rubber solution and asphalt, or resin, for the production of an impermeable coating for damp walls. The stringiness of the composition while laying it on the wall with a brush was such as forcibly to suggest the idea of silk being so producible by wholesale, the resin being substituted, perhaps, by gum lac, or it might be also with some albuminous ingredient. Not being very likely to appropriate an idea which has been floating in our brain for some years without the realization of even a single experiment towards the end in view, we hereby make a present of it to others who may be less pre-occupied. We would recommend the use of chloroform as the solvent (should any other solvent besides heat and some fluxible resinous ingredient be found requisite, along with sulphur), from the exceedingly rapid evaporation of chloroform being likely to enable the experimenter to obtain the stringy floss in a dried state, especially if it were produced in the midst of an atmosphere of steam.

In offering these incidental suggestions, it will not be imagined that we claim the suggestion of producing thread from India-rubber.

One of the most delicate and beautiful products already realized in India-rubber (as the medal of 1851 will testify) is the thread of Messrs. Nickels and Co. the first patentees and manufacturers in this country of India-rubber thread for braiding and weaving processes, elastic tissues, cords, belts, and other such articles. The idea of producing an artificial silk, either in floss for spinning into thread, or at once into thread itself, in the way suggested, is a totally different thing, and, besides, is as yet a mere idea, requiring, no doubt, an immensity of hard work, and no little cash, to realise it as fully as the thread of India-rubber "pur et simple" has already been.

But our suggestion has led us somewhat astray from the subject in hand, which is Mr. Hancock and his very instructive volume: it has also helped, moreover, to exhaust our space for that subject; but we cannot take leave of this author without recommending his narrative, to our younger readers especially, as one which strongly illustrates the immense advantages of *perseverance*, and a stout and unquenchable faith and enthusiasm while labouring through difficulties and disappointments suffered in a reasonable and useful as well as a still hopeful cause.

#### ROME.

WRAPPED in the mists of a legendary birth, — veiled in an atmosphere of mythical uncertainty, — alike the wonder of the unlearned, the undying theme of scholarship, and the delight of mankind in general, is the origin of that city whose name, once the synonyme for the world's dominion, by a just retribution now constitutes its moral and its lesson; — that city, whose history forms the connecting link between times past and present; and which, though so fallen from its once high estate, still presents in the ruins of its grandeur a shrine for the world's pilgrimages, to which an endless stream of votaries resorts to linger fondly on each spot hallowed by the presence of its statesmen and its warriors, — to restore in thought its palaces and its temples, — to trace its topography from its infancy to its fall, and to draw poetic inspiration from the scenes of its greatest desolation. Seen through the dim obscurity of a remote antiquity, its heroes and their achievements assume gigantic and distorted forms, or fade in utter indistinctness from the view; and where the light of truth seems to penetrate the general darkness, and point to bright spots on which the eye of inquiry may love to dwell, even there the many-coloured mantle of poetry invests the objects that it envelops with tints of such exaggerated brilliancy, as to confound the calm conclusions of sober judgment.

"In no history is it later before we reach what is actually certain," so said Niebuhr, who, following in the footsteps of Perizonius, Bayle, and Beaufort, gave that blow to the indiscriminating faith of ages which has proved the prelude to a sounder and juster comprehension of old theories, once so implicitly trusted, but now so suspiciously regarded.

But though the erudition and ingenious solutions of Niebuhr have roused the spirit of inquiry so long dormant, and doubtless paved the way for the better appreciation of Roman legends, and better writing of Roman history, yet his successors are by no means bound to subscribe to his conclusions.

The general untruthfulness of the old Roman legendary tales, was even more apparent to the writers of the Augustan age than to the moderns, who, seduced by a burning zeal for the study of classical antiquities upon the revival of letters, delighted in giving, at least, the semblance of an implicit belief to any absurdity, if only handed down to them through the medium of a classical language. Cicero and Livy were mistrustful of their authorities, but treated them with the respect they paid to an equally doubtful mythology.

In the eleven books now extant of the twenty written by Dionysius of Halicarnassus, and in the thirty-five remaining of the 140 of Livy, we find our only detailed account of the first ages of Rome. Living in the Augustan age, they of necessity wrote from the information of earlier writers, and in the first ten books of his work Livy quotes from Fabius Pictor, Calpurnius



nius Piso, Claudius, Cincius, and Valerius Antias, all of whom were more or less infected with exaggeration and partiality. Of these, Fabius Pictor, considered to be the most ancient Roman historian,—*Scriptorum antiquissimus*,—was noted by Polybius for his partiality; and Valerius Antias, frequently referred to by Livy, is termed by that author the most lying of all the annalists. Plutarch, in his lives of Romulus, Numa, Publicola, Coriolanus, &c. describes particular periods, and incidental mention of various historical facts occurs in Polybius and Cicero. The other prose writers lived at much later periods, or, being poets, sacrificed truth to effect. To connect the broken chain of a narrative thus gathered piecemeal, monumental inscriptions and public and private records would doubtless supply many a wanting link; but incorrect transcriptions of the first, and the notorious falsifications that family vanity introduced into the last, would sadly deteriorate their value.

The wooden tablets upon which the *Pontifex Maximus* annually inscribed the leading events of each year, thence called the *Annales Maximi*, and which had been continued down to the time of Mutius, were destroyed by fire at the invasion of the Gauls. The *Leges Regiæ* were saved; also many of the treaties of peace and the *Libri Linteæ* (on linen), preserved in the temple of Juno Moneta, also escaped destruction. These, with the journals of the Censors, corrupt family memoirs, funeral orations—panegyrics, by which Cicero says history had been completely falsified, old heroic ballads, upon which Ennius built his *Annales*,—and the like, made up the chief sources of information when Fabius Pictor wrote:—traditional legacies “ad ostentationem scenæ gaudens miraculis aptiora, quam ad fidem.”

Next in antiquity to Fabius Pictor was Cato the Censor, to whom a large portion of what has come down to us is due. Of his great work, the “*Origines*,” the second and third volumes of which contained the origin of the Italian towns, but fragments remain. When Cato wrote, the Etruscans, Oscians, and Sabelians still existed as nations, and their *fasti* and chronological registers might have been consulted, which must have given great value to his work when extant.

“What moved Livy to write,” says Niebuhr, “was that nature had endowed him with a brilliant talent for delineation of character, and for narration, with the imagination of a poet, but without either the power or love of versifying. He wrote without positive feeling, whether of doubt or conviction, bringing down the marvels of the heroic ages into the sphere of history,” &c. His sole wish was to elevate his countrymen, even to the perversion of facts, and whilst borrowing largely from Polybius, distorted his plain truths without acknowledging the source whence he drew them. Allowing, nevertheless, for all defects in exaggeration and over colouring, he produced a colossal masterpiece unequalled by the Greeks; and we may agree with Niebuhr, that “of all the losses which have befallen us in Roman literature, the greatest is that which has left his history imperfect.”

Polybius was an author of a different kind. Living at a much earlier period, he was not only more conversant with the subjects that he treated of, but studied deeply and described the events of his own period only, and when incidentally and briefly he speaks of remote ages, he proves that early traditions were less corrupted when he wrote than when Dionysius and Livy improved upon them.

Had Cicero written an early history of his country, the discriminating talent of such a man would have been of signal service to the world in weighing conflicting accounts, and the highest respect would have been paid to his opinions, but as it is, he merely quotes facts to illustrate arguments.

Of the historical compendium of Paterculus, written about A.D. 30, the first part, commencing apparently with the siege of Troy, is missing; and the single manuscript that has come down to us abounds so with errors, that his text is much corrupted, but his relations of character exhibit discrimination and judgment.

Florus divides the history of Rome, up to his

own time (Adrian), into four periods: first, its infancy under its kings, struggling for very life round the mother city; second, its youth, from Brutus and Collatinus to Appius Claudius and Quintus Fulvius; third, its manhood, up to Cæsar Augustus, during which period it subdued the world; fourth, its old age and decrepitude, experiencing, however, a transient return of pristine vigour under Trajan.

The epitome of Florus abounds in the prevailing corruption of Roman history, being turgid, florid, and panegyric rather than faithful.

The chief work of Servius is an elaborate commentary upon Virgil. This work is still extant, though much interpolated by different authors, as shown by the great differences existing in the different manuscripts that have preserved it to us. Even in its present condition, however, it is regarded as one of the most important and valuable of all the Latin scholia.

Of the *Abridgment* by Festus of the work of Verrius, *De Verborum Significatione*, one imperfect manuscript only has come down to us, the numerous blanks in which have been ingeniously filled up by Scaliger and Ursinus. It contains a rich treasure of learning upon many points connected with antiquities, mythology, and grammar. He was supposed to have lived in the fourth century of our era.

One of the most voluminous of Roman authors was Varro, *Romanorum doctissimus*, famed for his vast and varied erudition, but of whose 490 books two only have come down to us, and one of them in a mutilated form. His work upon agriculture ranks him first among the *Scriptores Rei Rusticæ veteres Latini*. In the remains of his treatise, “*De Lingua Latina*,” we find much curious information connected with the ancient usages of the Romans. His great work, upon which his reputation for profound learning was based, was his “*Antiquitates*,” but we possess but a few fragments of it; but, says Niebuhr, the loss of Varro’s writings are not of much importance, his statements concerning the early history of Italy being for the most part worthless, if we except the list of the cities of the aborigines.

Such were the principal sources from which early Roman history has assumed the uncertain forms in which it appears to us after the lapse of nearly 3,000 years; but the principal traditions of which resolve themselves into three leading varieties, namely, that the foundation of Rome preceded the Trojan War; or that its foundation by Æneas immediately succeeded that event; or that it was founded by Romulus several centuries after the Trojan War. The speculations as to the origin of the name of *Italia*, originally confined to the southernmost part of Brutium, being derived from the numerous oxen (*italos*) which the district produced, would seem to be sufficiently unprofitable, when so much more likely an origin is found in the land of the *Itali*, so called after Italus, a law-giver of the Ænolians, which people, according to Greek accounts, were Italians, and under which name, in its more extended sense, all the tribes of the same race, Tyrrhenians, Sicilians, and Latins were included. Dwelling in the earliest times to the north and south of Latium, were the Umbrians and Oscans; the former possessing all Lombardy and Tuscany, the latter known under various names, as Volscians, Ausones, Aruncans, &c. The languages of these two nations, according to Lepsius, pervaded Italy, and were allied to each other by sensible affinities. A third and most important element was added to these in the Helenes, Pelasgi, and Etrusci.

Cumæ was considered to be the earliest Greek colony in Campania. Numerous other Greek colonies were formed, and, indeed, South Etruria exhibits Greek influences throughout its extent.

The emigration of the Ænolians, or Pelasgi, dates back from a most remote period. They were also called Aborigines and Siculi, who, as we have already seen, were the same as the Itali or Vitali. The spread of the Pelasgi seems to have been as extended as that of the Celts in later times; and to their language—different to that of the Helenes, but having affinity to it—is to be attributed the existence of that Greek element in the Latin tongue, unquestionably referable to its influence.

By learned quotations, says Professor Newman, it is satisfactorily demonstrated that the Ionians and Æolians were Pelasgian; that the Selli, or Helli, were Pelasgian; that the Helli were Helenes; and Helenes, Dorians; therefore we may presume the Dorians were Pelasgian; moreover, Thessalians and Sicilians, Ænolians and Latins, were all Pelasgian. “All we know of them” says the same writer, “is, that they were closely akin to the Trojans; and while rejecting all the rest of Niebuhr’s speculations, we may accept his conjecture that the migrations of the Pelasgians by sea from the coast of Troas to Sicily and Italy, carrying with them their *Penates* and worship, generated the poetic legends concerning Æneas and others.”

The well-known habit of the Roman poets in calling the Greeks indiscriminately Pelasgi, doubtless much influenced the world in confounding the two races together. The Etruscans were a third people, foreign in Italy, called by the Romans Etrusci, or Tusci; by the Greeks, Tyrrheni, or Tyrseni; and by themselves, Rasena.

The country between the Tibur and the Mare Inferum, or Tyrrhenian Sea, and bounded on the north and north-west by the Apennines and the river Macra, was their seat. Their early history has given rise to much discussion in modern times, and it is now admitted on all sides that the people known to the Romans as Etruscans, were not the original inhabitants of the country, but a mixed race. The most ancient inhabitants appear to have been Ligurians on the north, and Sicilians on the south, both of whom were subsequently expelled by the Umbrians. From this point two opinions have prevailed. The first (that of Herodotus) ascribes them to a colony of Lydians under Tyrsenus, son of the King of Lydia, from whom they took their name, and in this opinion Cicero, Strabo, Paterculus, Seneca, Pliny, Plutarch, and Servius follow; the second is, that a Pelasgic race, called Tyrrheni, subdued the Umbrians, and settled in the country, who were afterwards in their turn conquered by a powerful Rhetian race, called Rasena, who descended from the Alps and the valley of the Po. Hence it was from the union of the Tyrrheni-Pelasgians and the Rasena that the Etruscan nation was formed. Dion of Halicarnassus considers them aborigines, but admits that a tribe of Pelasgi passed from Thessaly into the heart of Italy prior to the Trojan war, who assisted the aborigines in their war with the Siculi, whom they forced to fly to Sicily, the seat of the ancient Sicani. Gibbon agrees with Dion. Gorius derives the Etruscan element from Egypt or Phœnicia, which he considers the original seats of the Pelasgi; thence driven out into Achaia, Thraee, Arcadia, &c.; and from thence passing into Italy. Mazzochi follows the Oriental theory. Maffei brings them from Canaan, and Guarnacci derives them from the East after the Flood or Babel, asserting that the Umbri and aborigines were the same people; that they spread over Italy, and some tribes of them, called Pelasgi, thence emigrated to Greece, &c. Being entirely ignorant of their language, it is impossible to arrive at a definite knowledge of their origin, but we know them to have been a very powerful nation when Rome was still in its infancy, having extended their dominion over a great part of Italy. Through the attacks of the Gauls in the north, and of the Sabines, Samnites, and Greeks in the south, they became confined at last to the limits of Etruria Proper, and long flourished there after they had disappeared from the rest of Italy. Of the twelve cities that formed the confederation, no list is given by the ancients, but they were probably Cortona, Arretium, Clusium, Perugia, Volaterræ, Vetulonia, Rusellæ, Volscini, Tarquinii, Valerii, Veii, and Cære, more anciently Agylla. The latter part of the history of Etruria is a struggle against the growing power of Rome, into which nation it in time became absorbed.

The name *Italia*, from its early signification of the southernmost part of Brutium only, at last, about the time of Polybius, included in its widest extent the whole country from the Macra and Rubicon to the Straits of Sicily, the country thence to the foot of the Alps being called Gallia Cisalpina. Italia and Ænolia, Ausonia



or Opica, Tyrrhenia, Iapygia, O-bria, Hesperia, Camesia, Argessa, and Saturnia, are poetical names derived from the Greek names of the tribes inhabiting the peninsula, in the flourishing times of Magna Græcia.

Dionysius states, that Latium was inhabited, at the earliest times, by the Siculi, a portion of whom were forced to give way to the Prisci or Sacra, an aboriginal people, who had been forced from their seats by the Sabines, and who, uniting with the Siculi, who still remained, formed together the *Prisci Latini*, or *Prisci et Latini*, or simply *Latini*. Thus, the population of Latium was a mixed one, consisting, on the one hand, of Siculians, aborigines, and Oscans, all of whom belonged to the Pelasgian race; and on the other of Sabellians. The Siculians had spread along the east coast of Italy, from north to south, one branch of them only having crossed the Apennines, the progenitors of the future Latins. In proof of this relationship, a similarity in the sense of words, between the portion driven into Sicily and the Latins themselves, has tended to the conclusion that their whole language was fundamentally the same, although that of Latium was destined to receive further changes from new immigrants; for, according to Dionysius, they were afterwards conquered by another people from the Apennines.

The Latin language is allowed to be one of the Indo-European group, to which German, Greek, Welsh, and Irish belong; and prevailing opinion assigns to the latter a more remote position than to the others; and the composition of Latin from Sicilian, Umbrian, Oscan, Greek, and Sabine, and perhaps Pelasgian and Etruscan elements, adds to the embarrassment. But we may conclude, that one of the compound dialects that make up the Latin language, may fairly be termed Celtic. Among the arts of Latium, was a system of massive fortification. Praeneste and Tusculum, Terebantium and Alatrium, Norba, Cora, Signa, Arpinum, and many other places, attest the mode of massive but rude construction, ascribed to Pelasgic style, though the mere fact of its Cyclopic style does not always establish its claim to a remote age; Signa, for instance, having been planted by Tarquin, and its Cyclopic walls, therefore, to be imputed to him.

The Romans, upon the subjugation of Etruria and Latium, adopted many of their rustic deities as well as their local customs and superstitions: Saturn, Janus, Faunus, and Picus were Italian gods. The natural phenomena of Italy gave rise to numerous local deities: "Nullus lucus sine fonte, nullus fons non sacer propter attributa illis deis qui fontibus processerunt." The mythology of Etruria was more pure than that of Greece, but its fables were not so ingenious. "When the Romans were allured by the arts of Greece, the rude and simple traditions of Italian mythology yielded to the enticing and voluptuous fictions of a more polished people. The spirit of polytheism did not restrict the number of gods, and the ministers of superstition seemed always ready to reconcile the most discordant systems." Thus the Greek Kronos became identified with Saturn; the Etrurian Faunus became confounded with the Arcadian Pan, and Fauns and Satyrs indiscriminately commingled.

Respecting the foundation of Rome, one tradition, very prevalent, ascribes that event to Evander, about sixty years before the Trojan war. Evander is supposed about that period to have led a Pelasgian colony from Pallantium, in Arcadia, into Italy, and there to have built a town called Palantium, at the foot of the Palatine-hill, which was afterwards incorporated with Rome. The appellation of this town is by others derived from Pallas, grandson of Evander, by his daughter Laona and Hercules.

Of the deep faith reposed in this tradition, proof is shown in the divine honours to a late period paid to Evander and his mother, Ceres. In addition to this, both Livy and Tacitus ascribe the introduction of letters and civilization to Evander, an opinion very prevalent with the Romans. The second tradition, and one very prevalent amongst the Greeks, regards Æneas, or one of his immediate successors, as the founder of Rome. We need not recapitulate the story of Æneas and his Trojans,

as told by Livy and Dionysius, and adopted by Virgil, with all the embellishments of poetry. Cephala, who lived about 850 years after the building of Rome, seems to have been the first to introduce Æneas into Latium; but whilst the general tradition places several centuries between his arrival in Latium and the foundation of Rome, Cephala calls one of his sons Romus, and ascribes to him the foundation of the city. There are other varieties of the same legend that we cannot here allude to. The third form of tradition, which ascribes the foundation of Rome to Romulus, was that most universally believed by the Romans.

This version of that important event, as recorded by Fabius Pictor, and adopted by other ancient historians, may be regarded as the great national tradition of Rome, and there can be but little doubt that it was of native growth, as many of its incidents serve to explain Roman rites and institutions, such as the worship of Vesta, the Lupercalia, Larentalia, Lemuria, Fratres Arvales, &c. By this account, too, no violence is done to the received opinion of the connection of Æneas and his Trojans with the origin of the city, as its ancestral parentage is still connected with his name. The tradition is that he was succeeded in the government by his son, Ascanius or Iulus, who, thirty years after the foundation of Lavinium, founded the town of Alba Longa. The successors of Ascanius now reigned at Alba for 300 years; but upon the list of kings as given by Livy and Dionysius, but little reliance can be placed, having evidently been made up in later periods, to fill up the interval between Æneas and Romulus.

Possibly the last-named immigrants into Latium, as related by Dionysius, may have caused the distinction that existed between the *Prisci Latini* and the others, who, apparently, can only be the Latins that adhered to Alba Longa as their leading city. As many of the thirty townships inhabited by the *Prisci Latini*, called colonies of Alba, were older than Alba itself, we must infer that the *populi Albenses* were the colonies founded by Alba, and not the other and more important towns.

From these preliminary observations we see that long before the time assigned to the foundation of Rome, Latium was a flourishing country, containing numerous towns formed into a powerful confederacy. Of the three periods assigned to the foundation of Rome, the last, from its entire adoption by the Romans themselves, and the collateral evidence of circumstances, is the one alone worthy of attention; and although discrepancies exist as to the year of the event, still the main feature of the intervening period between Æneas and Romulus remains the same. And as we may have occasion frequently to refer to the admirable article upon Rome contained in the "Dictionary of Greek and Roman Geography,"\* alluded to in our late papers on "Athens," we will adopt the summary of dates which the writer there, gives us, and which, indeed, is strictly accurate. "The sum of the regnum here given (Dionysius and Diodorus), allowing five years for that of Æneas, who died seven years after the taking of Troy, is 432 years,—that is, down to the second year of Numa, when Rome was founded by Romulus, in the first year of the seventh Olympiad. Now, this agrees very closely with Varro's era for the foundation of Rome, viz. 753 B.C. For Italy having been taken, according to the era of Eratosthenes, in 1184 B.C. the difference between 1184 and 753 leaves 431 years for the duration of the Alban kingdom. Varro's date for the foundation of Rome is that generally adopted. Other authorities place it rather later: Cato in 751 B.C.; Polybius in 750; Fabius Pictor in 747."

Another and a prevailing opinion among the Romans was that of assigning three centuries only to the Alban monarchy before the time of Romulus. Of this opinion was Virgil, where, in the prophetic promise of Jupiter to Venus, he says:—

"Hic jam ter centum totos regnabitur annos  
Gente sub Hectoræ; donec regibus sacro  
Marte gravius gentium partu dabitur imperium."

Thus have we briefly traced the leading features in the legendary and mythical history

of the origin of this great people, whose moral influence in the ruins of their grandeur still binds mankind by as potent a spell as when by their martial might they swayed the sceptre of universally acknowledged supremacy.

We must defer the consideration of Rome itself to a future number.

#### MR. SYDNEY SMIRKE'S SECOND LECTURE ON ARCHITECTURE AT THE ROYAL ACADEMY.\*

In my last lecture I addressed to you some general remarks on the position of our art, and on its leading principles.

I should have been glad in the present lecture to have descended into details, and to have considered with you the practical application of these principles; but such a duty could not be satisfactorily fulfilled without many diagrams, I therefore postpone that task to a future opportunity. I think that I cannot employ the present occasion more usefully than by tracing the course of our art, through its various phases, from the early practice of it down to late times. Besides the intrinsic interest of such a view, I think it essential to a right understanding of our position as artists that we should be well acquainted with the course that our art has run.

Nor is a knowledge of this history unworthy of the attention of the more general student. Our distinguished historian, Hallam, truly says, that "no chapter in the history of national manners would illustrate so well, if duly executed, the progress of civil life, as that dedicated to domestic architecture." And as this social progress is intimately connected, if it be not identical, with civilized life, we may, by the same authority, regard the history of our art as illustrative of the progress of civilization itself. Even in countries respecting which we have the written traditions of their history, no material surviving evidence can be adduced as affording a stronger collateral confirmation of its truth than their architectural remains. The barbarity or refinement of a people,—their prosperity or de-cline,—the derivation of their race,—the extent and character of their commercial relations,—all these exercise so marked an influence on their architecture, that it would scarcely be an exaggeration to say of such a people that their history may be read in their buildings as plainly as in their books.

Let me, then, devote this evening to a cursory glance—for such only will our time permit—at the history of architecture. The rapidity of our survey must be such as to forbid our entering at all into antiquarian research; nor have we time to amuse ourselves with any endeavours to penetrate the obscurity of primeval times.

It is, indeed, curious to mark the traces of the early troglodyte, and to recognise in the cabin of the Indian or the kraal of the Hottentot a reflex of the primitive efforts of builders when the world was young, and art, in its higher sense, unborn. It is highly interesting thus to detect, as it were, the print of the naked footsteps of primeval man,—but such speculations are ill suited for the present occasion.

Nor, indeed, do I think it expedient for us to bestow more than a passing regard on the labours of the early builders even in those more advanced periods when men spread and settled over the teeming continent of Asia, had learnt the secret that architecture afforded a permanent auxiliary in overcoming and subduing the human mind, and making it amenable to the mysterious impressions of a religious consciousness.

It is beside my present purpose to inquire when, or at what point of the horizon, the rays of our art first dawned. Antiquaries give this honour to Egypt, but the dates of the antiquary are often based on far more precarious foundations than we, as builders, have to rely on; and I am happy in the belief that it forms no part of my duty to entangle you, or myself, in the abstruse deductions of the astronomer, nor in the chaotic sciences of those who would dive into the mysteries of hieroglyphics.

It is enough for me to say that any remote dates are assigned to many anonymous piles of decayed architecture on the plains watered by the Tigris and the Euphrates, and still more remote dates are confidently attributed to many less decayed piles of architecture scattered along the course of the Nile; whilst on the great promontory of India, also, exist many solemn monuments of man's handiwork that have been left by the retreating tide of civilization—often without a date or even a name to guide us with certainty as to their origin.

All these buildings, far apart as they are, no doubt differing widely in their dates—widely differing, certainly, in their physiognomy—all speak, as it were, one common language, telling us of men—in a rude state, it is true, but endowed with a deep sense of

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\* Read Monday evening, the 2nd inst.



grandeur in form, and not always without a strong sense of the beautiful,—especially delighting in works of a broad, robust, and masculine character; little acquainted with the graces of art—not at all with the finesse of construction, or with dynamical science.

It is certainly well worthy of observation how soon men perceived the capabilities of our art, and acquired the science of so piling up stones as to produce a powerful effect on men's minds. "Go to," said the rebellious descendants of Noah, exulting in their newly-acquired art of construction; "let us build a city and a tower, the top of which shall reach unto heaven;" and from that day to the present time, throughout the world, one of the chief exponents of a country's pride, or its opulence, has been the greatness of its architecture.

I leave to the antiquary the consideration of the style and character of the buildings of these prehistoric times. But Egypt, the reputed cradle of the world's civilization, demands of me some short notice. However deficient the early architecture of this remarkable country may have been in that grace and elegance which were reserved for another people and a later period, it is yet certain that the art here acquired much of the character of a fine art; and I think we must admit that the Egyptian builders produced works marked by a dignity of conception which, in the lapse of 3,000 years has been scarcely exceeded. The earliest development of Egyptian art is found about the delta of the Nile, and its chronological progress is up that river, for the ruins about the cataracts are of later dates. It is natural, indeed, that those most accessible and most readily cultivated districts should be the first settled, and that there communities would be first founded. As population increased and cities multiplied, the human tide ran upwards towards the mountains. Abundant architecture remains attest this fact, and show that Egypt offers no exception to what I hold to be the rule, that our art affords a safe index of the progress of civilization.

The Egyptians, however, were not a progressive people; their civilization did not advance with time; and to this our art clearly testifies, for the era of the Shepherd Kings is marked by even nobler remains than those of the Ptolemaic period. To a hasty observer there is no wide difference in the style or aspect of their buildings during perhaps thirteen or fourteen centuries or more: a strange phenomenon this, when we reflect what extraordinary changes have been since effected in our art within a much shorter period, among races of a more active spirit.

But while the swarthy worshippers of Memnon were piling up their ponderous masses of granite and basalt, after the fashion of their remotest ancestors; while with more patience than genius unnumbered carvers were labouring over and polishing the surface of their colossal, yet still lifeless and conventional sculpture, a seed had been waiting to a more genial soil, and had struck root among the marble mountains of the Peloponnese; an art was there born destined soon to give the law to all after time.

Peculiar mental endowments characterise nations as plainly as individuals: and special moral aptitudes seem to have their geographical limits almost as clearly defined as those which govern the vegetable world. The delicacy of taste which early distinguished the Doric race was a surprising phenomenon. A population very small, and apparently without much unity of origin, fostered by no favourable circumstances, scattered and broken up over a hundred islets and along rugged coasts, constantly contending for personal security against the indigenous races—these hardy warriors and intrepid seamen became, in two or three centuries, the most refined artists that the world has yet produced.

Yet these Greeks had not, in the arts at least, any very fruitfully inventive genius. To Egypt and Assyria may be traced much of the raw material of Greek art. Their wonderful power lay in the purifying, elevating, subtilising, and idealising art. They did not create the body, but they modified its members, and breathed into it a soul. They eminently possessed that alchemy, by which the base metal of their predecessors became in their hands a pure gold.

It was no long period of gestation which preceded the birth of true Greek architecture. In the eighth century before the Christian era, there is, I believe, no evidence of its having acquired any very high æsthetic character. The singular structures which have been transferred by Sir Charles Fellows, from the coast of Lydia to the British Museum, give but a faint foreshadowing of the grace and beauty that were to follow; and the well-known gateway at Mycenæ savours more of Assyrian than of Grecian design. Yet as early as 600 years before Christ, a noble Doric temple was erected in Sicily, near the modern Solunto, differing in no essential respects from that consummation of Greek art, the Parthenon itself, which arose in the middle of the fifth century.

Much diversity of opinion exists as to the moral

dignity of the Greeks: some are disposed to regard them as little better than successful brigands; whilst others as little less than a race of demigods. It may be that undue proportions are imparted to the form of men dimly seen through the haze of remote antiquity, for "Distance lends enchantment to the view," and possibly were it given us to know the truth, divested of fable and hyperbole, some of those whom we have learnt to look up to as godlike heroes might shrink into the dimensions of bold gladiators. All this, however, may be the case, and much of Grecian history itself may be mythic; but Grecian art stands forth as a palpable, appreciable fact. Their works are before us; and even now, after the lapse of more than 2,000 years, which of us will venture to deny that in architecture and sculpture no other men have since wrought as they wrought.

In the slight historical sketch which now engages us, any detailed consideration or analysis of style would be misplaced. For this, other more appropriate occasions may, I trust, present themselves. The course of events leads us on to the period when the wonderful light of Greek art began to wane. All that was of purest and highest quality was produced within the narrow limits of little more than a single century; namely, from about the middle of the fifth century before Christ to the death of Alexander.

The career of that conqueror made known to Greek artists many new and strange forms of art among the conquered races, and the love of novelty inherent in our nature would naturally lead to their adoption. Lord Aberdeen, many years since, pointed to the East as the probable source from whence the arch was derived which ultimately so materially influenced our art; and his lordship's supposition has found a remarkable confirmation in the recent discovery of the arch in Assyrian sculpture.

Up to the period last referred to, we are, I think, justified in assuming that the styles, or orders, taking their names severally from the Dorian and Ionian States, were exclusively used; but whether the merit of priority is due to the former, as Vitruvius avers, may admit of doubt. The rude but undeniable representation of Ionic columns, which occurs in the Assyrian sculpture now in the British Museum, must be at least as old as any known example of a Doric building.

The third order, the Corinthian, bears every mark of a later origin: its rich exuberance was the natural result of that maturity which preceded its decay. The date attributed to that union of grace and beauty, the Choric monument of Lycistrates, at Athens, is 335 before the Christian era; and this is held to be the earliest authenticated example of the style: although it cannot be supposed that so perfect and symmetrical an order could have issued at once in all its maturity and perfection, like the goddess of Æthean idolatry, from the brain of even a Grecian artist. The gradual steps by which man of genius elaborated the elegant Corinthian capital from the lotus-shaped summit of the Egyptian columns are lost to us; it is true, but may be conceived and even traced in the imagination; and such a parentage seems far more natural than the one assigned to the order in the familiar story handed down to us by Vitruvius.

Whilst, however, the application of this order to temple architecture was certainly late, it is equally certain that its adoption was general and rapid. Within a century after the date of the small monument just named, the order had almost monopolized the attention and favour of archæologists.

It was long after its attainment of eminence and power, that Rome sought to augment its dignity by the cultivation of the fine arts.

To meet the ampler means and wants, but less fastidious taste, of the conquerors of Greece, architecture laboured not in vain.

Wonderful as was the progress of her arms, Rome may lay claim to almost an equal triumph in the arts. It was not, however, in a painful study of the refinements of art, nor by the generation of any striking novelties, that the Roman people sought to indulge their love of architecture. As they hesitated not to enlist men of all races and climates into the ranks of their armies, and even to adopt and naturalise the very divinities of their vanquished enemies—as also were they nothing loath to avail themselves of the artists of other countries when they desired to adorn their own capital; and the ready supply of cultivated artists which Greece was able to afford, though it must have tended to improve and elevate the tone of art in Rome, can hardly have tended to the practical encouragement or growth of a race of native artists. It seems to be generally admitted, even by their own writers, that the Roman genius was less successful in the cultivation of fine arts, and notwithstanding the eagerness of opulent proprietors and public bodies for the possession and display of such monuments, that people never attained to the exquisite manner of their teachers.

Yet over the whole Roman world, from the Thames to the Tigris, are scattered in profusion the evidences of their love of architectural splendour and luxury; and their temples and palaces, their theatres and villas, bear testimony to their all-pervading political power, as decisive and palpable as any that can be drawn from the written records of history.

In the reigns of the Antonines, Rome appears to have reached what in the language of geology would be called the antichlinal line of her grandeur. It is of this period that Gibbon speaks when he says, "If a man were called to fix the period in the history of the world during which the condition of the human race was the most happy and prosperous, he would, without hesitation, name that which elapsed from the death of Domitian to the accession of Commodus," and it is precisely to this period that we must refer the highest excellence of Roman architecture, and to which some of her finest examples may be attributed.

The Pantheon and Coliseum, however (although not quite of that date), are the two buildings which perhaps exercised the most direct and powerful influence on the architecture of all succeeding times: the former may be regarded as the parent of all the domes that have since been erected, whether in the east or the west, and the form in architecture which, in the opinion of many, may be said to possess, in a higher degree than any other, the attribute of sublimity.

In the latter, the Flavian amphitheatre, we recognise one of the earliest known examples of that welded union of the arch and the column whence has descended such a fruitful progeny of grace and beauty.

The religious architecture of the Romans did not indeed vary materially differ from that of their predecessors in Greece; but the last-mentioned colossal structure, widely differing from any known Grecian type, seems to have greatly influenced design in all subsequent civil architecture.

The idea of an arcade strengthened and relieved by columnar construction had perhaps long previously developed itself, as in that interesting ruin known as the Villa of Mæcenas, at Tivoli, and elsewhere; but this vast amphitheatre, still the most conspicuous and popular ancient building in Rome, so well calculated to gratify at once the pride and the pleasure of the Roman citizens, perpetuated the idea; and the arrangement was not only repeated in succeeding amphitheatres, and scattered over the Roman world, but it struck deep root in the general practice of Roman architects, and has never ceased, down to our own times, materially to influence architectural design. The arcades, indeed, lost their breadth and grandeur as art declined, but some form of arcade was rarely afterwards omitted in any important composition.

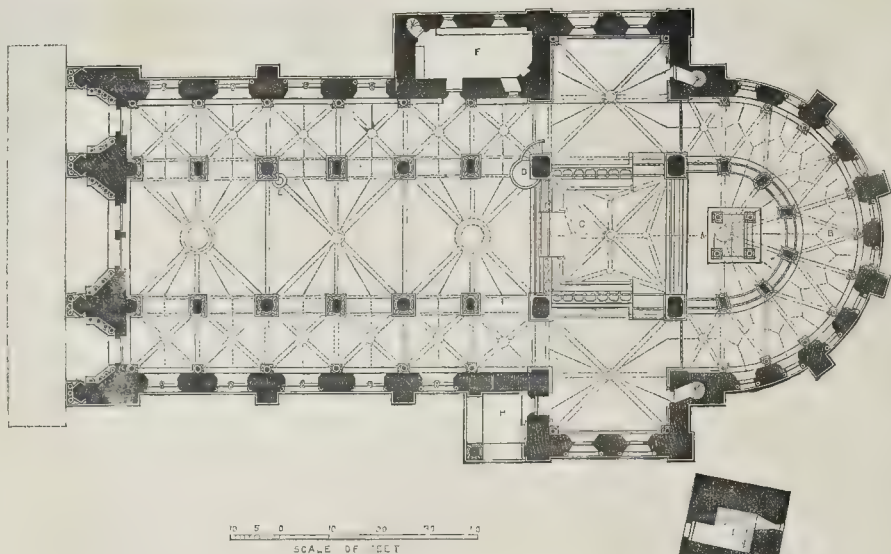
It would be a curious, although perhaps a somewhat tedious task, to note the degradation of architecture step by step. True to the law that our art is an index to the state of civilization, as the Roman character degenerated, Roman art sank *pari passu*; and by the age of Diocletian, when the empire was merging towards its close, the days of classic architecture were numbered.

Its fate after the fall of the Roman empire is a subject that has of late engaged many pens. Till lately, indeed, only casual and superficial attention was paid to the subject of the state of art in its declension. But a very different feeling has since arisen, and writers who, a few years ago, would have deemed the topic hardly worthy of investigation, will now descend with labours and reverent attention upon its minutest details.

Still the subject remains obscure, and authorities differ widely both as to the date and to the parentage of many notable monuments; and, although I again disclaim polemics, you will, perhaps, permit me to detain you a very few minutes in its consideration. Before the fall of the empire, the architecture of Rome maintained an undivided authority over every portion of that vast empire.

From Thule to the extreme south, an almost uniform style prevailed; varied, it is true, by provincial peculiarities and exigencies, yet essentially uniform. When, however, the legions, which bound together the imperial Colossus, became loosened, and the empire was dismembered, art also lost its unity, and a very different fate befell its eastern and its western extremities. In the east it fell into the hands of the descendants—sadly degenerated and corrupted, no doubt, yet still the descendants—of the greatest artists that had ever lived. In the west, it fell into the hands of invading hordes, ignorant, and for the most part regardless of art; yet affected, as we know, and even acted by the prestige of that great but fallen empire. Thus differently circumstanced, and separated both by geographical position and by national antipathies, eastern and western art soon began to wear very different aspects. In the east, Greek traditions infused into the architecture of Byzantium a character of its own, elegant and ornate, yet somewhat flat, and grave, and quiet. In the west, Roman art, in its declension, was less metamor-





PLAN OF PROPOSED MEMORIAL CHURCH, CONSTANTINOPLE.

phosed, but exhibited strange departures of the Roman type, arising more from the ignorance and the rude impetuous energy of the age than from any new element of design; for nothing is more generally admitted than that those Huns and Ostrogoths, and even the Longobardi, brought with them but few traditions of their own. This western (or rather this north-western) phase of Roman architecture has been aptly named the Romanesque style, and probably existed nearly contemporaneously over a large portion of the western empire.

A distinction has been drawn between the Romanesque of Lombardy and that of the Rhine; but, notwithstanding the uncertainty that prevails in the dates of the earliest examples during this obscure period, I believe that, except those differences naturally arising out of the difference of climate, we possess no early evidence of any such marked distinction.

In those districts where examples of Roman architecture most abounded, as in the south of France, the Romanesque savoured most strongly of the classical type, for among the early converts to Christianity no unwillingness was felt to adopt the architecture of their Pagan predecessors. Some Christian emblems were invented and introduced into the ornamentation of their buildings, but all else remained essentially Pagan. Indeed, it was the policy of the early Christian Church to facilitate the abandonment of the old worship, not only by the adoption into its ritual of certain old forms calculated to render the new doctrine palatable to the catechumens of the Church, but by the consecration of existing Pagan buildings to the new service. Thus we learn, from an inscription on the frieze of the Pantheon, that that building, which had been erected by Atrippa, in honour of Jove and all the gods, was by Boniface IV. consecrated to the Virgin and all the saints. So, also, a temple of Apollo became a Christian church dedicated to S. Apollinaris. Dr. Middleton tells us, too, of a church dedicated to S. Bacchus, and many similar instances might be adduced. Even the music chanted before the idols of Paganism was appropriated (as Burney surmises) and converted into Christian hymns. Indeed, as early as the fourth century, these equivocal practices of appropriation had extended so far as to have become a scandal in the minds of some stricter and more simple-minded Christians.

We may readily assume, therefore, that the subversion of Paganism was attended by no very appreciable change in the prevalent style of architecture. The circumstances of the times, however, ultimately wrought their effect, and a sort of transition style slid, as it were, into use, which, as I have already said, has been designated Romanesque. Perhaps one of the most curious as well as most authentic speci-

mens of the earlier Romanesque are the relics of Theodoric's time, at Ravenna, in which we detect clear traces of the change that was gradually taking place, whilst a somewhat classical aspect was preserved, the builders of that period still seeking to retain the ancient Roman type. For centuries the reminiscences of the empire exercised their influence, and to build "more Romano" was the aim and boast of men at a time when all true classical feeling had long been extinct, and when even the arts of construction must have been nearly lost; for we find that when the builders desired to form a dome over the tomb of Theodoric, in humble imitation of those at Rome, they seem to have been driven to the whimsical expedient of scooping out a huge block of stone, 32 feet across, into the semblance of a spherical vault, and then lifting it bodily on to their walls.\*

#### MEMORIAL CHURCH AT CONSTANTINOPLE.

The accompanying engravings illustrate the selected design (by Mr. Burgess) for the memorial church at Constantinople, referred to in previous articles. The author of it, as already stated, founded his design on a study of the church of St. Andrea, at Vercelli. We shall best set forth his views by quoting part of the memorial which was sent with his drawings:—

"Actuated by the ideas conveyed by this model, the first care of the author of this design was to ascertain what materials were to be readily found at Constantinople suitable for an edifice worthy of the nation by whom it was to be built, while the expense of re-opening quarries or of long land transit would forbid the introduction of any materials not in common use. From careful inquiries, made of competent persons who have been engaged for several years in building operations at Constantinople, it would appear that the choice of materials is limited to the following somewhat scanty list:—

The St. George's limestone, of a consistency between Portland and Bath stone;  
The Maltese limestone, like Caen stone;  
The Maricrian stone, like the St. George's;  
And a bluish black limestone, used principally for rubble walling.

The Marmora marble, of a dull cloudy white.  
Italian marble, used for paving.  
A red marble, from a quarry recently opened near Constantinople; and (now that a good understanding is established between the Turkish and Russian Governments) the Balacava marble, which resembles the Sienna, may possibly be obtained.

Bricks may be had of all colours, as well as terra cotta. The tiles resemble those of Italy, and the lime is to be had remarkably good.

For the roof, spruce fir is used, which comes from the shores of the Black Sea.

\* To be continued.

The design for the proposed church must naturally be influenced by the properties of these materials.

At the outset a difficulty presents itself. The church is essentially a memorial church, and should therefore be especially designed to contain monuments. For this purpose it appears to the author that a space should be separated from the rest of the church by a grille, so that there may be a space specially devoted to the preservation of monuments (many of which would doubtless be very costly), but which might be rendered available, when necessary, for the wants of the congregation. Impressed with the importance of this, the tower has reluctantly been omitted in favour of an ambulatory or space round the east end of the choir: at the same time, a design for the tower has been appended, in case of the funds becoming sufficiently increased to carry it out.

"For the sake of lightness, and in order to diminish the thrust, it is proposed to make the filling-in of the vaulting of a light concrete, like that used at Salisbury cathedral. It is much lighter than any stone, and, should a settlement occur, does not become detached in small pieces, as a brick vault would, but simply cracks. For a similar reason, it is carried over the ribs, and not rebated on to them. In France, where this system is followed, the author has seen several vaults (the cloisters of Rouen, for instance) where the ribs have fallen, but the filling-in remains quite perfect.

It is proposed to build the core of the walls with the rubble of black stone, and to face them inside and out with various ashlar of terra cotta, brick, and white and black stone. The Marmora marble will be confined to the dado of the nave, the caps of the columns, and the tracery plane of the windows; while the black stone and red marble, slightly polished, will be employed for the various columns."

Many of the flat ornaments on the façade are to be formed simply by the stones being incised and filled up with a dark coloured cement: glass mosaics would also be introduced.

The cost is estimated at 20,000*l.*: the tower, if added, would entail an expenditure of 3,000*l.* more.

#### REFERENCES.

A. Altar.	E. Font.
B. Ambulatory for Monuments.	F. Lower Vestry.
C. Choir.	G. Press.
D. Pulpit.	H. Porch.
	I. Tower.

MR. BROWN, OF LIVERPOOL.—The commission for the portrait, to be painted, of the munificent friend of the Liverpool Free Library, Mr. Brown, M.P. has been entrusted to Sir Watson Gordon. The choice of the sculptor for the statue was not decided when we last heard, but, we believe, between Messrs. Foley, Marshall, and MacDowell.

\* It is proposed to cut the names of every officer and man who fell in the late war upon the panels of this dado; in fact, to follow the example of the Assyrian architects, who covered the alabaster dados of the palaces with inscriptions.





PROPOSED MEMORIAL CHURCH, CONSTANTINOPLE.—SELECTED DESIGN, BY MR. W. BURGESS, ARCHITECT.



## THE ARK ON MOUNT ARARAT.

MAJOR STUART'S description of the ascent of Mount Ararat by five Englishmen, published in the *Times* of August 22, 1856, is most interesting.

It appears from a letter in the same paper of a subsequent date, and from other statements, especially those in Dr. Kitto's work, that the summit of Mount Ararat was reached in 1829, and that it was then slightly convex, and almost circular in form, the diameter being then about 200 Paris feet. Major Stuart's description of it, as he found it in 1856, is different, and seems to me to give occasion for some curious inquiries. He states that "the whole surface of Mount Ararat bears evidence of having been subject to violent volcanic action," also "the impression left on my mind is, that the summit is an extinct crater filled with snow." He states also that "the summit itself is nearly level, of a triangular shape, the base being about 200 yards in length, the perpendicular about 300." It is obvious that Major Stuart found the summit different both in form and dimensions from what it was in 1829: this would be consistent with the idea that probably it was much higher in 1829, from the accumulation of snow and ice; and as it is known that the mountain was shaken by a great earthquake in 1840, which threw down vast masses of ice and snow, and part of the rock itself (the latter probably carried away by the weight of the ice which might have been accumulating about 4,000 years), and as it does not appear that any lava has flowed from the summit, either at that period, or at any other time since the Flood, so far as I have been able to learn, it seems to me probable that the form and dimensions found by Major Stuart are much nearer to, and perhaps not very different from what they were at the period of the Flood, whether the ark rested on that mountain or not. Now, supposing that this is really the place where it did rest, is it an idea without some reasonable foundation to suppose not only that the ark may be there yet, but that the earthquake may lead to its discovery?

To suppose that the ark may be there yet may seem a startling idea, but that arises chiefly from the importance of the purpose for which the ark was used.

If we were told that a piece of good wood had been preserved 4,000 years, under favourable circumstances for preserving almost anything, it would not seem to be so very improbable, especially to those who are in the habit of finding black oak under the soil of low "car" or "fen" land, which oak they call "old Noah," that none intimating how long they think it has been where they find it. Whether they are mistaken or not as to the exact period, the oak must have been there many centuries. A rough outline in the triangular form, described by Major Stuart, may be made in a minute on a separate piece of paper, and by holding the paper highest where he states that the particular part of the mountain's summit is highest, some of the following remarks may seem deserving of attention. Major Stuart states that "the highest point is the apex of the triangle; separated from it by a hollow is another point of nearly equal altitude, and the base of the triangle is an elevated ridge forming a third eminence."

Dr. Kitto had difficulty in supposing that the ark could become fixed on the top of a mountain, and therefore he thought that a word had been erroneously translated; but if he had seen Major Stuart's description of the form, and his dimensions of the summit of the larger Ararat, as it appeared in July, 1856, or sixteen years after the earthquake of 1840, perhaps he would have agreed with others in thinking that they are strikingly consistent with what we may suppose they would have been if the mountain, and the crater at the top of it, had been made for the especial purpose of receiving and retaining the ark. What is said in the Bible about the ark is in a few words, but they are remarkably explicit. Noah was not to use his own discretion or judgment as to the proper dimensions of the ark, or even as to what wood he was to use; he received on both points clear directions.

Dr. Kitto and others state that there are different opinions as to whether the mountain described by Major Stuart is really that on which the ark rested, but they all admit that there is a very general belief that it is; so we may fairly suppose that before the recent ascent it was at least as likely as any other mountain.

Dr. Kitto intimates that for animals to come down it in safety would be almost as great a miracle as the Flood itself; but if we are to believe that five gentlemen have recently come down it in safety, and that one of them, Major Fraser, had previously shot down 1,000 feet of the most dangerous part, "now head, now feet downwards," and was so little injured, that he actually walked up to the summit immediately after that remarkable descent, surely we may believe that the animals could descend when they Preserver intended them to do so? Thus, Major Stuart's state-

ment of facts tends to remove two of Dr. Kitto's greatest difficulties: some others mentioned by him may be got over by plain reasoning from well-known facts. The question remains, is the place at the summit of the mountain now called Mount Ararat apparently well adapted for the purpose of receiving the ark, and preserving it? Major Stuart states that it is in the form already described, and that the base is 200 yards, or 600 feet; the perpendicular is 300 yards, or 900 feet. The ark was to be 300 cubits long, equal to 547 feet, and 50 cubits wide, equal to 91 feet. Do we have allowed for the "earthwork" outside of the supposed crater? If the ark floated in at the lowest part of the triangle summit, when there was just sufficient water to float it over that part of the summit of the mountain, the "elevated ridge," or base of the triangle would be likely to so impede, or alter the course of the ark as to hold it over the crater as in a wet dock. The wet dock would become a dry one as the water subsided, and if the ark really rested in it, is there not a probability that it is still there preserved in dry snow?

As five gentlemen have reached the summit, I wish to ask the question whether it may not be yet practicable to ascertain whether the ark really is there? A. M. R. I.

## CHURCH-BUILDING NEWS.

**Ipwich.** The following tenders have been received for a new Congregational Chapel about to be erected at Ipswich under the direction of the Mr. F. Barnes, architect:—

Wright, Ipswich .....	£2,701
Ringham, ditto .....	3,019
Gibbons, ditto .....	3,055
Baldiston, ditto .....	3,355
Luff, ditto .....	3,385
Simpson, ditto .....	3,503
Colls and Co. London .....	3,800

The building about to be removed is of the ordinary meeting-house character of a century and a half ago, but there is a residence attached to it, containing some very interesting oak carving, and an ornamental plaster ceiling of the seventeenth century in good condition. The new chapel is calculated to hold nearly 1,200 persons, and is designed in the Decorated style of Ecclesiastical architecture, in accordance with the advancing ideas of the leading members of the Dissenting interest.

**Rickmansworth.**—Several labourers employed on the works at the cemetery which is being formed at Rickmansworth, had a very narrow escape from accident last week, while engaged taking away the centres from underneath the arch of the entrance-gateway. One of the buttresses was observed to give way, and the men had scarcely time to get out of the way when the arch fell.

**Llandaff.**—The restoration of the interior of the cathedral has been nearly brought to a close, after an outlay of nearly 23,000*l*. An eminent Welsh ironmaster, says a contemporary, being recently solicited for his subscription, asked the probable cost of the works. "23,000*l*," said the applicant. "Good God!—two miles of railway!" emphatically exclaimed the man of iron, with a shrug of the shoulders.

**Coventry.**—The memorial window in commemoration of the death of the Hon. Colonel Hood, of Whitley Abbey, is now completed, and placed at the north-east end of St. Michael's Church. The subject is "The Ascension," and its execution was entrusted to Messrs. Hutton and Butler, of Coventry.

**St. Helens.**—The church of the Holy Trinity, erected on the north side of Traverses-street, Parliament, St. Helens, as a chapel of ease in connection with St. Mary's parish church, has been consecrated. It is a cruciform building in the Gothic style of architecture, and is built of the black slag produced from the copper furnaces, which, contrasted with the red sandstone quoins and tracings of the windows, gives the edifice rather a striking appearance. The windows of the nave are ornamented with stained glass borders and texts. The church contains about 650 sittings, 639 free. It has been erected at a cost of about 2,500*l*, by Messrs. Harris and Sherratt, builders, St. Helens; Messrs. Hay, of Liverpool, being the architects. Attached to it are boys', girls', and infants' schools, in which 200 children are being daily educated; and it is intended to erect a parsonage house adjacent.

**Doncaster.**—In reference to improvements at Christ Church, Doncaster, the local *Gazette* states that the patron and a committee have in contemplation the removal of the eastern window, and to replace therein another of five lights, and decorated. The windows will be formed of malleable shafts, with provision for the tablets, containing the commandments, &c., and running crocketed gables, terminating with

carved finials. The lights will be filled with stained glass. The design is the production of Mr. Scott. The work has been let to Messrs. Irson, of Northampton, for 245*l*. The carving is to be executed by Mr. Phillips. This alteration will not interfere with the service, as the stone will be prepared before the window is removed, and the new one will be erected in the course of a week. It is also intended to have a new pulpit and reading-desk of wood, after drawings by Mr. Scott.

## PROVINCIAL NEWS.

**Banbury.**—The site for the Cornhill Corn-exchange, says the local *Guardian* of last week, will apparently be cleared by the end of the week. To the accepted tender of Mr. Kimberley, should be added one of Messrs. Thorpe and Pounder for carving, 185*l*. An alteration in the design as first exhibited has been made, by elevating the base of the building, so as to give an approach to the various entrances by steps. The architect is Mr. Hill, of Leeds.

**Portsmouth.**—In reference to the garrison gates for the Portsmouth Dockyard Railway, a Hampshire paper says,—Mr. Bushby has, in connection with his contract for making the railway, a curiosity on his Littlehampton premises, in the garrison gates. They are in pairs, with a semi-circular head, are of the best picked oak, solid, and of 6 inches thickness throughout, except that the flush panels, which are moulded, are in two thicknesses, of 3 inches each, in order that the plank on one side might be put in diagonally. The gates are of the weight of 3½ tons a pair. The railway is now nearly completed as far as the dock-yard itself. It is rather over a mile in length—about 1,800 yards.

**Salisbury.**—An effort is being made to erect, in St. Edmund's parish, schools for boys, girls, and infants, together with residences for the master and mistress. The probable cost of the buildings will be about 1,800*l*, and if a moiety can be raised by private subscription, the other half will probably be supplied by the Committee of Council on Education. A site in Bedwin-street has already been purchased at a cost of upwards of 200*l*, and more than 850*l* have been subscribed towards the object.

**Pembroke.**—The extensions and improvement of the dockyard at Pembroke are this year to be carried out to the extent of 120,000*l*. The widening of the entrance dock is to cost 8,000*l*, and the lengthening and widening of the dock, so long in hand, 20,000*l*. The two new slips and boat-basin extending along the wharf are also to be carried on, and these, with provision for scouring away mud in front of the dockyard, will cost 30,000*l*. The erection of larger saw-mills, engine-house, workshops, a new foundry, and plumbers' shops, is to cost upwards of 20,000*l*. The saw-mills are advancing towards completion, and sheds are being extended. The foundry is to be erected on the site of the old iron store. New slips are being constructed. The work of each contractor is performed under the superintendence of an inspector.

**Manchester.**—The Bantock monument, some years ago erected in the market-place, is said to be in a neglected state. The monument itself wants completion by the introduction of a figure of Lord George, in the opening left for that purpose. The church of St. Johns, lately erected in this town, with two chapels now in progress for the cemetery on the Nottingham-road, says the *Nottingham Guardian*, when completed, will strongly contrast with the dingy appearance of the monument.

**Liverpool.**—The contractors for the landing-stage, Messrs. Thomas Vernon and Son, have made such progress with the work, that within a few weeks from the present time the whole of this gigantic work, according to the *Journal*, will be completed. All the air-tight pontoons, or floating tanks, have been completed and placed in relative position. That connection also has been fixed by the placing of the longitudinal keelsons; and the wood framing for supporting the stage has likewise been finished. The deck or flooring of the stage has been nearly all laid down, fastened, and caulked; about a fourth part only of the deck remaining to be laid. The stage is 1,000 feet, or nearly a quarter of a mile, in length, perfectly level to within a few feet of each end, where a gentle slope allows a easy access to vessels of comparatively small size; and two points, near the centre, similar accommodation is afforded by short flights of steps. For the convenience of launching and floating, the stage has been disconnected at three equidistant points. The connecting bridges, four in number, are ready at Manchester for being put together.

**Preston.**—The foundation-stone of the new Petty Sessions Court and Police Station, Preston, was laid last week by the mayor. The site is in Lancaster-road. The new building will have a frontage to Lancaster-road, and also to East-street, which runs from Lancaster-road to Back-lane.



**Norwich.**—The free library will be thrown open to the public on Monday.—A railing has just been placed round the Wellington statue, in the Market-place, under the direction of Mr. Benest, the city surveyor.

#### FOREIGN INTELLIGENCE.

**Munich.**—*Restoration of the Dome.*—Although the cathedral of Munich is not one of the most important in Germany, its restoration has been taken in hand, but the way in which it is to be done is not yet quite settled. Messrs. Bergen and Foltz, architects, are engaged to assist the meetings. It has been resolved that the arch, of the Renaissance style, which intercepts the principal nave, is to be removed, as well as the old rubbish of closets and platform, surrounding the choir. After the effect thus produced has been ascertained, the demolition of two lateral altars and the principal altar encompassing the choir will be begun.

**Hamburg.**—*Demolition of an old Building.*—The so-called Baumhaus, one of the oldest buildings of the House city, will be removed. It was built by the architect, Hans Hamelin, in 1622, in the Netherland style; and from its uppermost story, surrounded by two verandahs, one of the finest views of the city, and the Elbe harbour, is to be enjoyed. Being situated at the end of the Steinhöft, the surrounding streets will profit by the demolition; still it was a fine memento of the traffic of old, once carried on within its walls.

**Paris.**—*New Scientific Inventions.*—The barometer (of Torricelli) consists in the method of measuring the pressure of the atmosphere. The Father Secchi, of the Observatory of Rome, has invented an instrument to weigh the pressure of the atmospheric column.—M. Seguin has invented a steam-engine, which utilizes the heat of the steam after it has exercised its moving force.—After 1,300 patents have been taken out in France and England, for the consumption of smoke in steam-engines, a new grille à gradins promises to supersede them all.—A new mode of panification,—the making of cheap bread of perfect whiteness,—has been invented in France.

#### THE ARCHITECTURAL ASSOCIATION.

The meetings of the Association are continued with regularity, and some interesting papers have been read. The condition of the finances has been brought before the Association, and it has been shown that at the end of the session it will be in debt 50*l*. The expense of the Architectural Exhibition first caused the deficiency, and the cost of the *conversations* given during the present session has increased it. The following resolution, proposed by Mr. T. J. Rawlins, and seconded by Mr. B. A. C. Herring, was passed at the last meeting:—

"That considering that the full benefits to be derived from the Architectural Association cannot be realised until the existing debt be cleared off, it is expedient that a subscription be entered into forthwith, and that the friends and members of this Association be solicited to aid in enlarging its sphere of action. That the amount of subscription for the above purpose shall not exceed the sum of 1*l*. each person."

It is most desirable that the Association should be relieved from the embarrassment of debt, and we trust that its friends will come forward in aid of the endeavour now being made to effect this. The treasurer, Mr. Banker (1, Dames-inn, Strand), will receive subscriptions.

#### THE ARCHITECTS' BENEVOLENT SOCIETY.

On Wednesday, the 11th, the general meeting of this excellent society was held in the rooms of the Royal Institute of British Architects, by the permission of the council. Mr. B. Ferrey presided, and addressed the meeting in favour of the objects of the society. The report of the council which was read congratulated the members on the fact that no diminution had taken place in the amount of the subscriptions, and proceeded thus:—

"A sense of delicacy forbids, of course, our adverting to particular cases, but we feel it incumbent on us to state that several cases of a peculiarly painful nature have come before us during the past year. It appears to us one of the strongest recommendations of our society, in which both those who give and those who receive are alike members of the same profession, that it should be the means, in some measure, alleviating the sad consequences of those reverses to which all are liable, without aggravating the distress of the unfortunate recipients, by making it known out of the pale of the profession."

We take this opportunity of cordially and earnestly entreating our provincial members, and especially our corresponding members of council, to extend the sphere of our usefulness, by making widely known the name and objects of the society, and by availing the list of its members.

Amidst the eager competition, and occasionally opposing interests, which are too apt to disunite the members of our profession, this society appears to form an agreeable spot of neutral ground, on which all may meet with no feelings but that of kindness, and no object but that of mutual assistance."

The balance showed that during the year the sum

of 244*l*. 11*s*. had been received in donations and subscriptions, and that 170*l*. 5*s*. had been paid to applicants for aid. The sum funded amounts to 707*l*. 13*s*. 8*d*.

Donations were announced from Messrs. M. D. Wyatt, 5*l*. 5*s*.; H. E. Kendall, jun. 5*l*. 5*s*.; T. E. Kendall, 5*l*. 5*s*.; David Brandon, 5*l*. 5*s*.; C. C. Nelson, 5*l*. 5*s*.; George Mair, 5*l*. 5*s*.; H. B. Hodson, 5*l*. 5*s*.; and W. W. Pocock, 4*l*. 4*s*.

The committee and officers were re-elected; and various votes of thanks, including one to the honorary secretary, Mr. John Turner, were passed; Mr. Charles Mayhew, Mr. Sancton Wood, Mr. Pocock, Mr. Papworth, Mr. Tite, M.P. Mr. Hesketh, Mr. Simmons, Mr. W. Papworth, and others, taking part in the proceedings.

The number of members ought to be very much larger than it is, and we invite our readers to help in making it so.

#### THE REVELLE!

(As sung in the Pens, near Spalding.)  
(After Shakespeare,—a long way.)

HARK! hark! A Clerk at Moulton sings,  
And two pounds is the prize  
He offers for those trivial things,  
The architect supplies;  
And winking governors begin  
To close their knowing eyes,  
And hope for plans that pretty bin;  
Sweet architects, arise!

Arise, arise!

J—S—U—

#### THE CASTS IN THE GOVERNMENT MUSEUM.

A VERY competent authority writes to us as follows: The authorities at the new Exhibition building at Brompton are now arranging their classic casts; but the classification seems to be confined to inexperienced hands; for, instead of the visitor being instructed by the proper classification of the objects, the Greek and Medieval are mixed up with Roman; and the portions of the same edifice, instead of being kept together, are promiscuously mixed. Thus the visitor will be bewildered and led astray, and the judgment of the guides of the public taste be a subject of great ridicule.

#### BURLINGTON HOUSE.

The new meeting-room and library for the Royal Society, which have been formed under the direction of the Office of Works, Whitehall, in the western wing of Burlington House, are now ready for the decorator. The meeting-room is an apartment of large size, 77 feet long, 42 feet wide, and about 30 feet high. Here the fine collection of portraits, belonging to the society, will be open to the public at stated times. It will be heated by hot water. The library is a room of good size, but comparatively low. Mr. Myers and Mr. Smith, of Piccadilly, have executed the principal works.

#### THE LONDON HOMES OF EMINENT MEN.

In various of the old parts of London, inscriptions are to be found, which from time to time have been renovated by well-disposed persons, and which help often to give an interest to the long and monotonous walks some are often obliged to take along London streets. This goodly custom has of late years been almost abandoned, although many matters might be noted at small expense which would give much interest to what are at the present time unmeaning blocks of brick and mortar. In particular, it would be well worth while to affix small tablets to houses in which eminent men have been born or lived. On the house once occupied by Milton, in Westminster, a stone has been put up, on which is inscribed that the house was formerly the residence of the "Prince of Poets." This, however, is placed at the back of the premises, and is of course not visible to the generality of passers.

It is surprising often to find the great difficulty there, particularly in London, of getting information in the neighbourhood respecting places which have historical and other associations. We went a little while ago in search of the birthplace of Turner, the landscape painter; and, although provided with the number of the house, thought it better to inquire how much of the prophet was known in his own land. The respectable man of business who actually occupies the place in which the greatest landscape painter the world has yet produced was born, was not aware of the circumstance; nor were other persons living round about better informed. Would it not be worth while to place a record on this house (24, Maiden-lane, Covent-garden), and also on No. 47, Queen Anne-street, where he so long resided and produced such famous works?

Scores of houses in London could be mentioned which might with much advantage be treated in a similar manner; for instance, the house occupied for long by Woollett, the engraver, in Green-street, not far from the National Gallery, on the top of which the engraver was in the practice of firing a small piece of ordnance on the completion of an important plate.

There is also Hogarth's house, in St. Martin's-lane, where he resided before his removal to the square. The residences of Newton, Reynolds, Lawrence, and others, are well worthy of a mark; so is the house in Brook-street, in which poor Chatterton unhappily died. There is also the poet Dryden's house, in Fetter-lane; places connected with Benjamin Franklin, and a hundred others. Many of the London streets are dreary enough, and would be much enlivened by such memorials, which, in many instances, would add to the value of the premises. We throw out this hint, not for the first time, in the hope that it may be the means of inducing some of the owners of property which has a public interest to state, shortly, the circumstances, in a visible and permanent manner.

#### THE BUILDING TRADES.

We have received statements, addressed to Tradesmen of all Callings, and signed Thos. M'Anaspie, proposing the formation of a "Trades' Protective and Grievance Society." The following will show the object of the proposed association:—

"Perceiving there is a spirit abroad, and that it is admitted on all hands that something is wrong which requires a great radical change, we therefore submit that each separate trade is entitled to the full control and benefit of that trade; and we call upon the public and Government Boards, private persons and men of business, as well as all architects, at once to alter the mode lately adopted in the advertising or giving away of the different contracts under their control. In place of giving to one capitalist the power and benefit of monopolising the work of eight or ten separate trades, let them subdivide the contracts, and thus give an opportunity to each tradesman to contract for his own department. By so doing there would be more competition, less jobbing, and the work would be done better and cheaper; no such trade would be more competent to inspect his or their own department, and thus a stimulus would be given to emulation, and the talent of the country would not emigrate to America and elsewhere."

#### THE ART-UNION OF LONDON.

OUR advertising columns have shown that the subscription lists will close on the last day of the present month, and we take the liberty of suggesting to such of our readers as may not already be members of the Art-Union of London, the desirability of becoming so forthwith, not merely because of the personal advantages, equal to much more than the amount subscribed, but because of the great good which has been effected, and is being effected, by the Society's operations. By its means more than a quarter of a million of money has been spent in aid of art and artists, and one expense of which would otherwise have been so spent; a love of art has been widely induced, and a desire for knowledge of it spread. Each subscriber for the current year will receive, on payment of his guinea, two prints, "The Clemency of Cœur-de-Lion," by H. C. Shenton, from the picture by John Cross, which gained the Government premium of 300*l*.; and "The Piper," by Edward Goddall, from the original picture by Frederick Goddall, A.R.A.; to say nothing of the chance of obtaining one of the prizes to be allotted in April next, which will include the right to select for himself a work of art from one of the public exhibitions, statuettes in bronze and porcelain, medals, mezzotints, and lithographs. Should the prints of the year not suit the taste of the subscriber, previous works may be taken in lieu. "The Piper," by the way, engraved by the father after the son, is a very charming specimen of the art of both, and is sure to be popular.

#### WORK TO BE DONE.

That bread, &c. may fall, let us no longer be dependent on foreign supply for our daily wants, but cultivate the waste lands, most particularly those near the metropolis; such as our Wimbledon, Wandsworth, Tooting, and Barnes commons, all within the reach of its manure and sewage. Look at Hounslow-heath as an example. 2ndly. For remunerating employment, and plenty of it,—put a spade, pickaxe, or hoe, into the hands of the unemployed, and let them drain, trench, and level these and other wastes. Suppose we tried the experiment with a few. Could you find ten times as many hands, in shape of discharged prisoners and others, there is work for them, by which the cause of humanity would be essentially served, the noble hero saved his suffering, and the country benefited beyond belief. It is, in a word, by laying down the granite kerbstones of the streets, in a double line, for the wheels of all carriages to run on, as in Friday-street, Bread-street, Cheap-side, the Commercial-road, our Beigate-hill, the Corso of



Milan, &c.; or, perhaps, large blocks of semi-vitrified clay, or other hard, impervious substances, might answer the purpose. In streets of great traffic, these double lines, on the near and off sides, leaving the middle for passing, of gravel, if you please. In streets of less traffic, two lines in the centre would suffice. At one blow, you abolish the distracting noise of the City, its dust, dirt, and, I had almost said, draft of the horse. Mr. Jenson proved, before the Lords, that one horse, on the Darlington railway, drew 12 tons, three miles an hour; that one gig-horse drew forty-one people eight miles an hour. Thus, half the number of horses would be dispensed with,—much of the least traffic, pleasure, and convenience of the public roads would return,—the produce of the land consumed by horses,—and Sir James McAdam assured me, "it was four acres per horse per annum,—enough for eight men,"—would afford employment and bread for the poor,—and there would "be no complaining in the streets." D. F. WALKER.

#### TURKISH CEMENT.

THE Turks use common red earthenware pipes, with socket-joints, to convey water from springs to reservoirs and fountains. They make and use mortars and cements as under:—

**Mortar.**—Fresh slaked hydraulic lime, one part, by measure; pounded brick or tile, finely sifted, one part, by measure; chopped tow, sufficient to mix into the consistency of ordinary hair mortar—the ingredients to be mixed dry immediately before use, and then to be well incorporated by the aid of water;—the mortar to be used fresh.

**Cement.**—Fresh slaked hydraulic lime, one part, by measure; pounded brick or tile, finely sifted, half part, by measure; chopped tow as above;—the whole mixed with oil, in place of water.

The earthenware pipe-joints are made water-tight with this cement.

#### ARCHITECTURAL INSTITUTE OF SCOTLAND.

A MEETING of the Architectural Institute of Scotland was held in Glasgow, on the 25th ult. when Mr. John Murray, of Murrayfield, advocate, read a paper on Church Towers, with special reference to the towers of parish and lesser churches. He said that the original type of the church towers of this country was to be found in Italy. The northern architects, however, introduced an important change in the disposition of the building, and the tower was generally made an integral part of the plan of the church instead of being detached as in Italy. This modification of the plan of the Romanesque church and campanile had always been a distinguishing feature of northern church architecture, though it might with some ground be maintained that it was not adopted by the Celtic tribes. The lecturer proceeded to point out some of the most prominent characteristics of the Norman, Early English, Decorated, and Perpendicular towers of England and Scotland, and concluded with some hints regarding modern adaptations, condemning in strong terms the very common practice of adopting the Gothic steeple and applying to it Italian details.

In the course of the conversation which followed, it was observed that many of the Celtic towers referred to by the lecturer were in reality more ancient than any of the campaniles of Italy.

Mr. Honeyman remarked that the nomenclature adopted by Rickman, when applied to Scotch architecture, was quite unintelligible, and that a perfectly different and independent classification was absolutely necessary to prevent confusion.

#### SMOKY CHIMNEYS.

SINCE no abler pen than mine has been taken up to furnish your correspondent, "X," with an answer to his question, I will, with your permission, trouble your readers with a few remarks; but do so more in the hope of eliciting further information than with the idea that my mite of knowledge will be of much use to them.

Smoky chimneys are the architects' bugbear: they cause more trouble between them and their clients than almost any other subject. As such, surely they should be dealt with boldly, and an attempt be made to exterminate so great an evil, instead of allowing it to remain as it is, unexamined and unheeded.

The cause of smoky chimneys is usually, if not always, down-draught. A body of heated air ascends, but being rarified, cold air has a tendency to rush into it to keep up the equilibrium. There is, therefore, I presume, always some down-draught in the top of every chimney; but it is only when it overcomes the tendency of the hot air to ascend that a chimney smokes.

The various methods in use for supplying cold air direct to the fire appear to me to be useful; thus, by

bringing oxygen freely to the fuel, causing more rapid and perfect combustion, thereby diminishing the quantity of smoke, and by diluting the remainder to such an extent that we have a column of comparatively-speaking pure heated air rather than one heavily charged with carbon ascending the flue.

The cowls which adorn our house-tops are, theoretically speaking, useless; for it is absurd to attempt to interrupt nature. Equilibrium must be maintained. How far they practically answer their purpose, your readers will be the best judges. For myself, I am convinced that their success is in any case fortuitous, rather than the result of experience.

There is in use a ventilator, the principle of which I would apply to chimneys.

Two tubes are fixed in the ceiling, near each other, and it is found that hot air ascends the one whilst cold descends the other. I would therefore divide the flue at the top, and for some distance downwards, into two, with perhaps sheet iron or zinc. Experiment must at first determine how far down it is necessary to bring this division; but of course the nearer it approaches the fire the hotter will be the smoke, which will therefore ascend more rapidly, and create more draught. It will pass up one side of the division, and carry the cold air which has descended on the other up with it. Cold air will, to a certain extent, descend in every flue; therefore let us make an entrance especially for it.

A. F.

#### ILLUMINATED CLOCKS.

THE attention of the readers of the *Builder* having recently been directed to the subject of illuminated clocks, perhaps the following suggestion for their improvement may be of interest.

In the science of optics it is an admitted fact that white on a black surface is visible at a much greater distance than black on white. In accordance with this axiom I suggest that the usual mode of constructing illuminated clocks be reversed; that is, instead of the entire face being illuminated and the figures and hands showing black, the figures and hands are proposed to be illuminated and the face black. To effect this object, the dial must be of copper, or some other opaque material painted black;—the figures and hands being perforated, and filled in with white transparent porcelain;—the dial to be constructed of three concentric parts, the outermost of which (for the figures), to be fixed, and the other two parts, with the openings in them to serve as hands or pointers, to revolve. It is obvious that there is the further advantage, in this arrangement, of avoiding the necessity of counterpoising the hands.

GEO. GUILLAUME.

#### LOCKS AND KEYS.

As one of your oldest subscribers, and who has seldom troubled you with a letter, may I venture to offer you a short space on the subject of "locks and keys," so fully treated by you in the *Builder* of the 28th ult.?

I shall not enter into the question as to whether a lock or keys may or may not be scientifically picked. I have no intention of attacking the inventions of other manufacturers, my sole object being to uphold the reputation of my own. The question, so far as my locks are concerned, is this: are they up to the mark? I propose to answer the purpose for which they are intended, viz. to keep property safe from thieves and housebreakers? I am content to let their reputation rest upon this issue. As to the controversy, lectures, and illustrated hand-books on the subject of lock-picking, equally accessible to thieves and honest men, the result has been that public confidence in the security of Chubb's locks has increased instead of diminished. Some people, it is true, expect perfect impossibilities, and imagine that having obtained a secure lock they have done all that is necessary. This is a great mistake. No lock whatever will guard against culpable negligence with regard to its key; or, as in the late South-Eastern bullion robbery, the treachery of supposed trustworthy servants.

Since 1851, I have made and adopted many improvements in my locks, besides those you mention, and more still have been tried and rejected, as interfering with their proper working. Complexity of action in any lock will, sooner or later, inevitably prove fatal to its success. A lock is not like a watch, or other delicate machine, that is treated with a considerable amount of carefulness. It is subject to every-day hard wear and rough usage; and it has been, as it always will be, my endeavour not to overlook these facts in making whatever may from time to time appear to be desirable alterations or additions. Absolute perfection is perhaps an unattainable perfection in locks as in other matters, nevertheless the present is an age of progress. Lock patents by scores have appeared within the last seven years; some good, others indifferent or bad in principle, and many of them embracing as new ideas certain principles of construction long since exploded or laid aside. Of those practically deficient (and they are many), my opinion is, that the ingenuity of their inventors has generally been allowed to overrun their perception of the before-mentioned fact, viz. that a lock is a very hard-worked machine, and that in its construction simplicity is as necessary an element as security.

JOHN CHUBB.

\* It will be remembered that the notorious lock-picker Agar said the robbery would be impossible unless copies of the keys could be taken. By the connivance of Tester this was accomplished, and yet the duplicate keys thus made were useless until Agar had travelled seven or eight times to Folkestone with the chests, altering the keys until they fitted.

#### REGULATIONS AS TO THE FORMATION OF NEW STREETS IN THE METROPOLIS.

##### METROPOLITAN BOARD OF WORKS.

At a special meeting of the Metropolitan Board of Works, held on Tuesday, the 10th inst. Mr. J. Thwaites in the chair, the following by-laws were agreed to:—

- "Six weeks at least before any new street shall be laid out, written notice shall be given to the Metropolitan Board of Works, at their office, No. 1, Greek-street, Soho, in the county of Middlesex, by the person or persons intending to lay out such new street, stating the proposed level and width thereof, and accompanied by a plan of the ground, showing the local situation of the same."
- "Forty feet, at the least, shall be the width of every new street intended for carriage traffic; 20 feet, at the least, shall be the width of every new street intended only for foot traffic; 20 feet, at the least, shall be the width of every new street; provided that the said width, respectively, shall be construed to mean the width of the carriage and footway only, exclusive of any gardens, forecourts, open areas, or other spaces in front of the houses or buildings erected, or intended to be erected, in any street or new street."
- "Every new street and every new street shall, unless the Metropolitan Board of Works otherwise consent in writing, have, at the least, two entrances of the full width of such street or new street, and shall be open from the ground upward."
- "The measurement of the width of every street shall be taken at a right angle to the course thereof half on either side, from the centre or crown of the roadway to the external wall or front of the intended houses or buildings on each side thereof; but where fore-courts or other spaces are intended to be left in front of the houses or buildings, then the width of the street, as already defined, shall be measured from the centre line up to the fence, railing, or boundary dividing or intended to divide such fore-courts, gardens, or spaces from the public way."
- "The carriage-way of every new street must curve or fall from the centre or crown thereof, at the rate of three-eighths of an inch in the foot, for every foot of breadth."
- "In every new street the curb to each footpath must not be less than 6 nor more than 8 inches in height above the level of the roadway, and the space between the curb and the channel of roadway, except in the case of crossings, shall be paved for the use of foot passengers; and the slope of every footpath must be half an inch to every foot of width if the footpath be unpaved, or not less than a quarter of an inch to every foot of width if the footpath be paved."
- "In these by-laws the word 'street' shall be interpreted to apply to and include any highway (except the carriage-way of any turnpike road), and any road, lane, footway, square, court, alley, or passage, whether or not, and as a part of any such highway, road, lane, footway, square, court, alley, or passage."

#### INSTITUTION OF CIVIL ENGINEERS.

On the 3rd inst. Mr. I. K. Brunel, V.P. in the chair, the paper read was "On the Results of the Use of Clay Retorts for Gasmaking," by Mr. Jabez Church. The substitution of fire-clay for metal in the construction of retorts, was attributed to Mr. Grafton, and dated back as far as the year 1820. Originally they were square in transverse section, but that form was soon changed for the  $\square$ , or oven-shape, which had been since adhered to, both in this country and abroad; this latter form of retort admitting of a stratum of coal being distributed of an equal thickness throughout.

The comparative quantities of gas made by iron and clay retorts, of the  $\square$  form, of 15 inches by 13 inches in section, and 7 feet 6 inches in length, had been found by the author to be as follows:—

The iron retorts lasting 365 days, and working off  $1\frac{1}{2}$  cwt. of coal for each charge, effected the carbonization of 2,190 cwt. of coal, which, at 9,000 cubic feet of gas per ton, gave a total quantity of 985,500 cubic feet of gas per retort; whilst the clay retorts lasted 912 days, carbonized 5,472 cwt. of coal, which, at 9,000 cubic feet of gas per ton, gave 2,462,000 cubic feet of gas per retort. It would thus be seen, that the clay retorts yielded a greater quantity of gas, from the same weight of coal, than the iron retorts, but the specific gravity of the gas so made was less and its illuminating power was diminished, in consequence of the increased temperature of the clay retorts, which caused the last portion of the gas to be decomposed.

The most practical method of working clay retorts in large works was with the addition of an exhauster. This reduced the pressure on the retort, and prevented the escape of gas through the pores and fissures; and by that system the quantity made was increased about 200 cubic feet per ton of coal. In small works, the expense of an exhausting apparatus, and steam machinery to work it, would not be compensated by the gas saved.

#### THE EMBANKMENT OF THE THAMES.

In a paper read at the Society of Arts on the 11th ult. Mr. Bridges Adams spoke of the great accommodation afforded by railroads in several cities of the United States, and advocated that similar ones should be established in London, recommending the way in which they could be conveniently constructed. In the discussion on this subject, objections were raised to such railroads on account of the narrowness of the streets; but though this might be the case in some localities, it was not pretended to hold good in other instances. Mr. Bannoch proposed, instead of such



railroads in the streets, to construct one on an embankment of the Thames; but these two plans need not interfere with each other. For instance, a proposal of Mr. Page's for this purpose was entertained by the Government Commissioners for the Improvement of the Port of London about a dozen years ago, and they said the necessary funds might be raised by a tax on the coals imported. This appearing objectionable, I ventured to submit to the commissioners a proposal by which the expenditure might be rendered self-paying, as in several works of the late Sir Samuel B.atham.

In the first place, instead of a sewer on the lowest story of the embankment, it was suggested that this portion should be appropriated to warehouses for inflammatory stores, such as tar, &c. which could be easily submerged, such storehouses being well dried and ventilated. Sir Samuel gave a convincing proof of their efficiency in Portsmouth Yard, where the subterranean cellars over the reservoirs were used for the desiccation of block shells. An upper tier of warehouses was proposed by me for such goods as timber and planks, likewise capable of being flooded, and a portion of the chambers always above water were intended for rooms for refreshments, such as pastry-cooks, restaurants, &c. The surface of the embankment was proposed to be strengthened by Sir Samuel's mode of projecting iron stays, which would at the same time protect foot passengers from the railroad carriages. This embankment was to be on a level with the street. Another feature of this plan was the leaving the existing wharfs and warehouses within the embankment (thus obviating one of the most powerful objections to the scheme) by keeping the water up to a convenient height, and avoiding the cumulations from muddy banks. There are various details in the proposed plan which might be worthy of consideration, should this embankment be carried out.

M. S. B.

### Books Received.

*The Kirk and the Manse.* By the Rev. ROBERT M. FRASER, M.A. Fullarton and Co. London, Edinburgh, and Dublin.

THE twentieth part, just now published, concludes this work, which consists of sixty illustrative views in tinted lithography, of parish kirks and manse in Scotland, by Messrs. A. and J. Macpherson, with descriptive and historical notices, and an introduction. Mr. Fraser remarks, in the latter, on not only the want of taste as to Ecclesiastical architecture in Scotland, but the positive prejudice against it which has prevailed, and rejoices in the great change for the better in that respect which is now evident.

Considerable improvement has been observable in the views during the progress of the work.

### VARIORUM.

THE "Essay on Labourers' Cottages" for which the Royal Agricultural Society awarded their medal to Mr. T. W. P. Isaac has been printed in their journal and reprinted in a pamphlet form.—"Australian Essays, on subjects Political, Moral, and Religious," by Mr. James Norton, Sen., Member of the Legislative Council of New South Wales (Longman and Co. publishers), are interesting, from their antipodal origin, and show that literature is making its own way in the wilds of the true new world of modern times. Indeed one cannot well conceive a position more suitable to the exercise of the reflective faculties than the solitude of "the bush," unless, by the way, some hungry bushranger, native or transported, happen to have his eye upon the reflective *absentee*. We suspect, however, that even though an Australian, our present author is much more familiar with the "legislative council" than the "bush." His essays, at all events, display no Cruscan isolation from his mother country, as his interest in the Gorham and other English questions of the (waning) day will testify. The most interesting to us amongst his essays, nevertheless, are those which relate to Australia itself. Mr. Norton complains of the apathy of his co-exiles in respect to the advantages of railway and telegraphic communication, and urges them to reflection and to action on the spot. One of his essays contains an account of Port Jackson and the City of Sydney, in which it is painful to be reminded that the town of Sydney is still "totally undrained," and still full of malarious ghost-like faces which proclaim the malarious influence under which they suffer.—That original and somewhat eccentric author, Mr. Alfred Snice, has just had published, by Longman, a tract titled "The Monogenesis of Physical Forces," forming the subject of a lecture delivered by him at the London Institution, on 18th ult. Mr. Snice is evidently labouring in a rich mine of thought, but the ore he may have as yet dug out is rather crude and meagre. The correlation (or identity rather) of the physical forces, so far forth as they manifest the influence of attractive

power, he appears to appreciate, but although the changes of convertibility in such forces may be rung *ad infinitum*, his ideas seem to be exceedingly defective so far as regards not only the power antithetical to attraction, namely, repulsion (if, indeed, it be proper to use such hypothetical terms as either of these), but also as regards the forms (or whatever else they may be) on which those differences depend, which plainly show themselves amid the identity, in light, heat, actinism, &c. and their correlative and co-operative antitheses. The causes of difference, in the midst of identity, while treating of mechanical force, hydrostatic force, and pneumatic force, Mr. Snice sees, so far, clearly enough, where he says that "when a new attraction is exerted, the force emanating therefrom may be propagated through acclim bodies, when it is termed pneumatical force; through fluid bodies, when it is called hydrostatic force; through solid bodies, when it is called mechanical force." Why does he not endeavour to point out how light, heat, &c. differ in a similar way, as they plainly do, though not exactly from the same causes? In fact, however, he has not caught the identity in these forces, far less the difference.

### Miscellaneous.

**MANSFIELD CEMETERY.**—On Tuesday, the 24th ult. the first stone of the chapels proposed to be erected in this cemetery was laid by Sir Edward Samuel Walker, the chairman of the Mansfield Burial Board, amidst a large assemblage of people. A bottle, containing the current coin of the realm, and a scroll of parchment, inscribed with a statement of the event, was deposited under the stone, after which a suitable address was delivered by Sir Edward, who spoke of the beautiful site which, under the Act for inclosing part of Sherwood Forest, had been set apart for the purposes of a cemetery, and which, in a few years, when the shrubs had become well rooted, would be second to none in England, its natural beauties being such as to require little aid from the landscape gardener, and being adorned with a few relics of "merrie" Sherwood's rare old oaks. The ground contains ten acres, situated about a mile south of Mansfield, on the Nottingham road. The architects are Messrs. Pritchett and Sons, of Darlington. Mr. Lindley, of Mansfield, is the builder; and Mr. Mansell Powell, the clerk of the works.

**THE SEWERAGE OF TYNMOUTH AND NORTH SHIELDS.**—Mr. R. Rawlinson, C.E. has reported to the local Board of Health for the borough of Tynemouth on the completion of their public sewerage works, of which he was the engineer. The following extract from the report will show generally what has been done, and at what cost:—"The estimate given in my report of October, 1854, provided for 16,162 lineal yards of cast-iron, brick, and earthenware pipe sewers, together with 150 manholes and lampholes, 600 gullies, and three flushing chambers. The total cost was estimated at 13,668*l*. I have before stated that the General Board of Health suggested some additional works and alterations in the arrangement of sewers. The cost of these was estimated at 800*l*. making a total sum of 14,468*l*. as required for the completion of the public sewers. The total length of public sewers actually laid down amounts to 18,046 yards; the number of manholes and lampholes to 276; and the gullies (fixed) to 559—42 remaining in stock—making a total of 601. The cost of these works, including payments amounting to 304*l*. 17*s*. 11*d*. for previously existing sewers which have been adopted, together with all engineering and other expenses, will not exceed the sum of 12,500*l*." Two outlets have been provided for the Tynemouth village discharge, and seven for North Shields.

**THE LONDONDERRY MONUMENT.**—The foundation-stone of the monument to the memory of the late Marquis of Londonderry was laid on Saturday week, and was witnessed by a large assemblage of people from Belfast and the Londonderry estate, including the Marquis and Marchioness, and a party from Mount Stewart. The spot selected for the site is the summit of one of the loftiest hills of the Scrabo range, within a mile or two of Newtownards. The monument is to be a tower, square in shape, and rising to a height of 130 feet. There will be a guard chamber, and a winding stair will conduct to the battlements, which are to be at a height of 95 feet from the base. At the east corner of the square a round tower is to rise, which will form a conspicuous landmark visible to a great distance at sea. The plan is by Messrs. Louyon and Lyan, architects, and it was chosen by the building committee in preference to several others sent in by architects in different parts of the country. The structure will be built of Scrabo stone, quarried on the spot. Mr. W. Sharman Crawford, chairman of the building committee, delivered an address, as did also Sir Robert Bateson, who laid the stone, after prayer by the bishop of the diocese.

**STRIKE AT DOVER.**—A considerable number of bricklayers in the employ of Mr. Moxon, on the Government works on the Heights, resolved to strike—not for wages, nor from any ill-will to their employer, but simply from a resolution to choose their own foreman. Mr. Moxon discharged the whole, and immediately telegraphed to London for a reinforcement of men, who have supplied the place of the malcontents.

**THE LONDON OPERATIVES AND EMIGRATION.**—There have been other meetings of the unemployed besides that reported in our last. At Bethnal-green, between 4,000 and 5,000 persons were present. A resolution was passed appealing to the Government to recognise the urgency of the present crisis, and to take prompt measures to enable those who are starving here to emigrate to the colonies, where their labour and their skill, while raising themselves from destitution to the enjoyment of an abundance of the necessities of life, would, by the development of the vast resources of these possessions, give a healthy stimulus to the industry and a sound and safe expansion to the commerce of the mother country. One speaker very reasonably urged that as so many millions had been freely given to feed the poor in Ireland, and to liberate the slaves in Jamaica, surely a single million might, if requisite, be given to supply our colonies with labour and our unemployed with work.

**GAS.**—At the half-yearly meeting of the Birmingham and Staffordshire Gas Company, the usual dividend, at the rate of ten per cent. per annum, was declared.—The Bigley Gas Company have issued a notice for the reduction of the price of gas, from 5*s*. 6*d*. per 2,000 cubic feet to 5*s*. from the 21st of December last. The quality of the gas, it seems, is not first-rate at present. The consumers may as well have cheap and bad gas as dear and bad, but the company would find it to their advantage to improve the quality of their gas while affording additional inducement (in price) to use it in private dwellings.—At the meeting of the Grimsby Gas Company, the directors reported that their works are in good repair, that since the last meeting a new gas-holder and tank have been constructed; that they intend to offer the old gas works for sale by auction during the spring, and hope to be in a position before long to reduce the price of gas. A dividend for the last half-year, at the rate of 8½ per cent. per annum, was declared, leaving a considerably increased balance in hand.—The Banff Gas Company have entered into a portion of the contracts for mason work and excavations has been taken by Mr. Hunter, mason, Banff.

**SHAKESPEARE'S HOUSE.**—A meeting of the Birth-place Committee was held last week, and the *Birmingham Gazette* says, that "it was unanimously resolved to proceed no further in the work of conservation until the opinion of some eminent architect has been taken upon the subject." We are glad to find our advice has not been thrown away.

**CANADIAN EXHIBITION AT THE CRYSTAL PALACE.**—The Parliament of Canada voted last session a sum of 2,000*l*. for procuring a proper exhibition at the Crystal Palace of the products, both raw and manufactured, of that country, together with models of almost all the important public works there. A large space has been allocated for this purpose, and in a short time, says the *Canadian News*, an exhibition, exceeding in extent and interest that displayed by Canada at the "Exposition Universelle" of 1855 will be completed. A sum of about 500*l*. a year will be expended in maintaining and adding to the collection.

**JOINERS' STRIKE AT DUMFRIES.**—The journeymen joiners of Dumfries struck work for an advance of 3*s*. a week. The present wages vary from 1*s*. to 20*s*. a week—18*s*. being the general rate for good workmen. Except one firm, the master joiners refuse to agree to a general advance of 3*s*. but some of them state they are willing to give an increase where they think the workmen merit it.

**HOLYHEAD HARBOUR.**—Mr. John Hawkshaw, C.E. has been appointed, by the Admiralty, engineer in chief of the New Harbour Works at Holyhead, vice Mr. Rendel, deceased.

**THE WELLINGTON MONUMENT AT LIVERPOOL.**—We understand that the committee appointed to superintend the Wellington monument at Liverpool have resolved to adopt the design of the Messrs. Watson, of Edinburgh.

**NOTICES UNDER THE BUILDING ACT.**—In the case of the militia depot about to be built for the city of London, the authorities refused to give notice to the district surveyor, Mr. Hammond, claiming it was exempt from the assertion that it was a building "employed for her Majesty's use or service." It was argued before a magistrate on the 10th, who decided that the building is *not* exempt from supervision of the district surveyor; and who fined the builder, Mr. Jay, after three days' hearing. The Court of Lieutenancy have given notice of appeal to the Court of Queen's Bench; but this, it appears, the builder repudiates.



**ST. EUGENE, PARIS.**—A correspondent writes,—"When in Paris I saw the church of St. Eugene, recently illustrated by you. To the lovers of out-and-out polychromy, it must be a treat: every imaginable colour (except black and white) plays its part: this, with gilding and stained glass windows, gives a curious effect. Were it not for the style of architecture, it would be a very appropriate building for a bazaar. There is no solemnity about the place: the mind is excited and disturbed with its gaudy colouring, and it does not seem that it would be a desecration to commit a polka therein. Very different are the feelings with which we enter and leave the old Gothic cathedrals in our country and in France."

**"THE PEACE CONFERENCE."**—M. Dublé's picture commemorative of this event, painted for the Emperor of the French, is now on view at Messrs. Leggett's, Cornhill. It is 17 feet long and 10 feet 6 in. high, and contains sixteen portraits,—Orloff, Clarendon, Cowley, Walowski, Buol, Cavour, Brunov, and the rest, of the size of life. The figures are skillfully grouped, and the result of the whole is very excellent. It takes rank amongst the finest works of its class.

**PORTLAND CEMENT FRONTS.**—Will you allow me the use of your columns to ask a question? My house, situated in the country, has been altered, enlarged, and succeeded. The Portland cement, it was said, would "set" of one uniform stone colour; but instead of that, I find it sadly mottled, although it is upwards of three years since it was done. What is the remedy? The painter recommends oil paint: good taste forbids; it would be too shiny; and as the surface is extensive, the expense would be an objection. The plasterer recommends a wash, which I fear would require renewing annually. Many besides myself would be glad to be informed how such a difficulty is to be met with good effect as regards appearance, and with moderation in the demand upon the pocket.—**RUSTIC.**

**THE LITERARY FUND SOCIETY.**—At the annual general meeting of this admirable and important Society, held on the 11th instant (Earl Staunton in the chair), another attempt was made to pass a vote of censure on the committee, but which, being altogether groundless, utterly failed, notwithstanding the position and abilities of the objectors. Mr. Dilke, Mr. Dickens, and Mr. John Ruskin, Mr. Robert Bell, Mr. Monckton Milnes, and the Bishop of Oxford spoke on the other side. In answer to some charges against the committee in respect of the late Mr. Haydn, which have been industriously circulated, a triumphant reply was given, and the meeting showed their full appreciation of it by voting sixty-nine against the motion, eleven for. Unanimous testimony was borne to the value of Mr. Blewitt's services as secretary.

**BRANCOE CHURCH COMPETITION.**—Correspondents complain, and with good reason, of the terms put forth in this matter, which end with the intimation that "The committee do not intend to give any premium or other remuneration for designs, and will not bind themselves to accept any of the designs which may be sent in." But what can we say more than we have already said a thousand times? While architects are to be found who will send designs, no matter what the conditions may be, it is hopeless to expect improvement.

**SALE OF GENUINE PICTURES.**—On the 18th inst. Messrs. Foster will sell a number of first-rate drawings and paintings, the property of Mr. Lewis Pocock, F.S.A. who has purchased so many pictures during the last few years, that he now finds some of them in the way. The sale will include Millais's "Proscribed Royalist," Linzell's "Wold of Kent," Dobson's "Children in the Market-place," and many charming specimens, by E. M. Ward, F.R. Pickersgill, Goodall, Frith, Holman, Hunt, Leslie, John Lewis, Webster, and others.

**MILBORNE REFORMATORY.**—This Reformatory School is now ready for the reception of boys convicted under the 17th and 18th Vict. c. 86, and similar Acts. It is built upon the most economical principle consistent with health and comfort, and consists of a large school-room, two sitting-rooms, a kitchen, and small store-room on the ground floor; a dormitory for twenty boys, two bed-rooms, and an hospital on the first floor. A master, matron, and bailiff will have the supervision of the boys.

**COUNTY SURVEYORSHIP, ESSEX.**—The following gentlemen were selected from fifty-eight candidates:—Mr. Whitcher, London; Mr. Smith, Hertfordshire; Mr. Webb, Chelmsford; Mr. Chas. Forster Hayward, Colchester and London; Mr. Channell, Chelmsford; Mr. Pritchett, Bishop's Stortford; Mr. Phipson, Ipswich and London; Mr. Henry Stock, London; and Mr. Crewe, Aldershot Camp. The latter five gentlemen have been chosen for further selection in April next, when the election is expected to take place. The salary is 300*l.* per annum.

**LETTERED GLASS SCREENS: GLASS TRADE ALMANAC.**—The globe and other gas-lighting in shop windows are now being improved in effect by lettered screens of ornamental glass, made to serve the purposes of advertising shop goods, &c. and which might also be made very serviceable in pointing out the thoroughfares after dark, if applied to the public thoroughfares of these screens is attractive, and lamps. The effect of these screens is attractive, and lamps. The effect of these screens is attractive, and lamps. The effect of these screens is attractive, and lamps.

**"ARCHITECTURAL SKETCHES FROM THE CONTINENT."**—Messrs. Day announce a work under this title, consisting of a series of views and details from France, Italy, and Germany, by Mr. Richard Norman Shaw, architect. The author says,—"While every corner of the United Kingdom has been ransacked for fresh examples, and nearly every building of note has been more or less illustrated, many of the most beautiful works in France, Italy, and Germany remain entirely untouched, and very little known. This is, perhaps, chiefly remarkable in the case of France, the country of all others the most accessible, and undoubtedly the most richly stored with the triumphs of mediæval genius."

**THE METROPOLITAN BOARD AND THE NEW PARK FOR FINSBURY.**—At the ordinary weekly meeting of the Metropolitan Board of Works on the 6th inst. a report from the Committee of Ways and Improvements was presented, recommending the Board to replace the Bill of the Finsbury-park promoters by a new Bill of their own; to consider whether the expenses incurred by the promoters should be paid by the Board, and, in the event of adopting the Bill, to retain the services of Mr. Barnett, surveyor, in its prosecution. The recommendations of the committee, after some discussion on proposed amendments, were agreed to by a majority of nineteen to twelve.

**ST. JOHN'S CATHEDRAL, LIMERICK.**—According to the design of the architect, Mr. P. C. Hardwick this church will comprise a nave, two aisles, north and south transept, chancel, four side chapels, and a tower. The tower will be raised in the angle formed by the projection of the north transept beyond the aisle. Two sacristies will be erected to the eastward of the chapels. The total length of the church, chancel inclusive, will be 168 feet; width across transepts, 116 feet,—across chancel and chapels, 118 feet,—across nave and aisles, 74 feet; depth of chancel, 43 feet; height of nave to underside of ridge, 77 feet 6 inches; external height of west front, 88 feet 6 inches, from ground line to top of cross. The tower will be upwards of 200 feet in height, and at base 37 feet 6 inches in breadth.

**LIVERPOOL ARCHITECTURAL SOCIETY.**—At the eleventh meeting of the present session of this society, held on Wednesday, the 4th, Mr. James Hay, Vice-President, in the chair, a paper by Mr. W. J. May, "On Improved Machinery for the Manufacture of Bricks," was read.

**RISE IN VALUE OF SANDSTONE AT BANYE.**—Owing to the large demand for sandstone, says the *Banffshire Journal*, occasioned, it is said, chiefly by the large quantity required for the railway bridge across the Spey, the price of the stone has risen, in this district, within a short period, by 8*d.* a cubic foot. The stone for the bridge is said to be chiefly from the Coveea quarries, in Morayshire, known for hard close grain.

**ARCHITECTURE IN NEW ZEALAND.**—Under the heading of "Our Want of Practical Architecture," the *New Zealander* says, "This is a want we have more than once had to speak of in reference to our public buildings in this city; and both from editorial articles and newspaper correspondence we learn that the decision of the Architectural Commissioners of Wellington, with reference to the plans for the proposed new Government Offices and Assembly Houses in that city, has met with anything but general approval. One writer, 'Public,' deals with the several designs very sensibly (his remarks, indeed, have more than a merely local application), and shows that not one is suited to the province or the locality where the edifices are proposed to be raised: all are too costly and ambitious: none are characterized by that utility and simplicity, and regard to judicious economy, which are all so requisite in young countries—even in the Empire City. The critic thus concludes his review of the first prize design:—

"In this design there is nothing for Wellington to feel proud of,—no display of good workmanship, practical knowledge, architectural ability, or the principles of construction suitable to this province. The committee think that a design may be made up out of three accepted designs,—but how a row of cottages with two Vandellian porches, a Gothic building, and an Italian villa, can be amalgamated, is a puzzle."

**ARCHES.**—Allow me to enter into a few particulars on this subject, and at the same time to point out what I consider a great defect in the common arch. In the ordinary radiating arch, resistance to upward pressure is effected by loading, which, however, is only efficient to a certain extent, and that in some instances very limited. Now, I propose to construct arches in such a manner that resistance to upward pressure should be obtained in the arch itself. For this purpose, the arch stones should be so made as to fit into one another in such a manner, that no arch stone can move on account of the ones on either side of it. According to the form of the arch, whether semicircular, elliptical, or otherwise, so will be the form of the voussoirs. It is difficult without diagram to show how the form of the key-stones could be got, but if from the upper end of an ordinary radiating key-stone a vertical line be let fall (which of course will be parallel with the line representing the rise of the arch), and the height of the key, or any other stone be bisected by a line drawn from the centre of the arch, where this bisecting line intersects the line whose top represents the upper end of the key-stone, a line should be drawn to meet the vertical line first spoken of, where it cuts, or would seem to cut, the under line of voussoirs. The same process should be gone through on the opposite side of the keystone, and thus the key-stone would become of such a shape as to be incapable, when surrounded by the rest, of moving upwards or downwards. When this has been done, the same process should be gone through with all the stones in such a way that the, so to speak, projecting parts of every stone should fit in and hold together the indented parts of the neighbouring ones, and vice versa. As, when this has been done, no stone can move on account of the stones on either side of it—and this is the case with all,—it must follow that the arch itself as a whole is incapable of motion if rightly constructed. An arch of this sort would, of course, be in stable equilibrium, and would stand without abutments if the foundations were sufficiently strong, but like all others, it would be better with them.—**J. A. D.**

**TUNNELLING IN THE BORE GHAT.**—The *Bombay Times* says the slope or incline intended for the rails at the Bore Ghat is nearly 15 miles in length, ascending between the two points at an elevation of 19,000 feet. Stretching along the face of the precipice, the line is every now and then seen to plunge by tunnel into the bosom of the rock; to shoot by some light airy viaduct across the chasm, or extend itself over the more substantial-looking support of an earthwork.

About three-fourths of it crosses one of these, containing no less than 200,000 cubic yards of material. There are in all twelve tunnels, measuring between them 2,300 yards, or about a mile and a half. These works were commenced under the auspices of Mr. Faviell, the contractor, in January last: the contract is to be completed in February, 1861, at a charge of 634,000*l.* There are at present ten thousand workpeople employed on this part of the line, the average pay being about 1,500 rupees a day. The cost of the whole work amounts to 10,000*l.* to 12,000*l.* a month. There are 3,000 men employed in boring or jumping the rock. The charge of each mine amounts on an average to about 12*l.* 1*s.*, and about a ton of gunpowder (made on the spot) is consumed daily. Near Poona, Mr. Faviell employs 7,000 people, and the line from the top of the incline to Poona will be opened before the rains in 1858.

**HOUSE-BUILDING AND RENTS IN PARIS.**—The Prefect of the Seine reports that the number of houses pulled down in the last five years amounts to 2,524, whilst the number of new buildings is 5,238, or more than double of the former, and that inquiries made in the arrondissements of St. Denis and of Sceaux show that in the suburbs the houses newly constructed surpass sixfold the number pulled down. Thus, in Paris and the suburbs, 18,594 houses have been constructed, against 4,667 houses pulled down. The prefect also states that the old houses were not more subdivided, nor contained a greater proportion of lodgings, than those recently constructed in their place. It is thus maintained that the increase of rents does not proceed either from the diminution of the number of houses or of the number of lodgings; and the prefect points out that it proceeds from the rapid increase of the population of the capital, and from the number of foreigners and persons from the provinces, attracted by the facility of communications, the population of the capital having increased, in the last five years, 305,000. "Houses," says the *Constitutionnel*, commenting on the prefect's report, "cannot be built by enchantment. There is a limit to the capital applied to building. But as the money invested in houses gives so excellent an interest, the building movement, far from diminishing, cannot fail to spread. The incessant multiplication of lodgings will forcibly bring about a fall in rents, a result that cannot long be delayed, thanks to the measures of the administration."



# The Builder.

VOL. XV.—No. 737.



THE exhibition of the designs sent in competition for the Memorial Church at Constantinople projected building, was opened to the public on Monday last, and comprises a collection of great interest and value to the profession. The drawings are arranged at King's College, in one of the corridors, 69 feet long, and fill the walls to more than the usual height for exhibition, as well as both sides of a screen down the centre of the corridor. There are about 370 drawings in the forty-six sets. Mr. Edmeston, to whom the superintendence of the arrangements was entrusted by the committee, has made the most of the space, and deserves the thanks of the competitors.

At the same time, we should not discharge our duty did we omit again to say that the space allowed in such cases, bears little relation to the thought and labour expended on designs, or to the requirements for simple inspection. We may be told that no ordinary exhibition-room would contain drawings displayed on the principle of ample area for their observation and study, that we venture to contend for. The point, however, with which we have to deal, is not as to what rooms are available in London, but is as to the reasonable expectations of competitors in answering an appeal to their exertions.

Every drawing should be placed so that its minute details could be examined, and that the real character of the several designs could be gathered, in order to their comparison with each other. The ample space is necessary for proper adjudication; and it is equally required if the profession and the art are to gain by mutual improvement,—in the manner we have spoken of, as possibly the chief gain that should be looked for in entering into a competition. It would assist the object if the space would allow drawings to be in the same relative positions,—say, as to the plans, by having them hung always on the lower line. And it would assist arrangements if a uniform system could be devised for mounting,—avoiding wide margins to drawings, and to admit of their suspension without injury.

In regard to the freshness of conception which is displayed in many of the designs for the Memorial Church, we regard the present occasion as one of much importance. A wider field of study has been entered upon; the right value, as with reference to new art, of English and continental models both, is being perceived; and that there is value in what may be old, and a necessity for the new, is being equally admitted. Designs which there happen to be in this exhibition, such as were the works of our best architects scarce ten years ago, already fail to satisfy, even where scrupulously correct,—for the simple reason that they belong to a school which was ever wanting in the art. Of some of the dangers however, incidental to the present position, we have very lately spoken.\* We have also given particulars of the designs to which premiums were awarded.†

Italian Gothic character is exhibited in many

of the works; indeed, in several cases, one or other version of the general style has been taken as a basis. One of the principal designs of this class is that of Messrs. Weightman, Hadfield, and Goldie (one of the five "especially mentioned"), which, in plan and exterior at least, most resembles the Gothic buildings of Lombardy, though its details are modified rather from those of the Campanile at Florence. The plan has long nave and aisles, short chancel and transepts, each with octagonal ends, a tower at the intersection, western turrets, and an atrium or cloistered court at the west. This feature in the plan, we may observe, is perhaps more characteristic of the Romanesque and Byzantine churches, than those of the Gothic period. We mentioned it as existing at Verelli, on the trustworthy authority of the writer in the *Quarterly Review*,\* who shows it in a plan; but no such feature is shown in the work of Osten on the churches of Lombardy. A square paved space is, however, remaining, according to information derived from Mr. Burges. We should also state that in designating the different sides of a building, we use the points of the compass as they would apply in England, though in Italy, in Romanesque churches, the altar may be at the west end.

In the design we were speaking of, the atrium has semi-circular arches, in the spandrels of which are pateras representing the colours of England, France, Sardinia, and Turkey. Generally on the exterior of the building, except as to the use of bands of dark marble, coloured decoration is confined to the windows—as by ornamental tiles in splayed reveals—and to the cornice, and the use of red tiles to the roofs. The roofs are of no great elevation; the main gable, below the coping, is stepped with arches, and an arcade extends along the front below from tower to tower.

The buttresses of slight projection of most of the competitors, appear to be adopted under the idea that they are best suited to the climate, and that they were on that account used by the Italian architects. Certainly, whether by bold projections as those of ordinary buttresses, the general breadth would be interfered with, may deserve consideration: the treatment of the *drawing* before us, seems to show that such was the idea in the design. On the other hand, the evidence would lead us to think that the shallow buttress, like the low gable, was simply a reproduction of a classical feature,—in that case, the pilaster. A question analogous to that just referred to, suggests itself as to the substitution of broad reveals for mouldings. In short, were such deviations from the general Gothic system made from considerations of *art*, as supposed, or are they simply the results from attempting a style different to that to which the architects were accustomed? These observations are introduced now as bearing upon questions of general importance, rather than as applying to the one design which happened to lead to them. Our notice of it should, however, add that the central tower introduced, does not solve the problem of the appropriate termination of that of Giotto, which otherwise it resembles: indeed, the pyramidal cappings to all the towers are the least successful portion of this design. The interior of the building here has principal arches of stone, as the support to a ceiling panelled at the slope of the roof. It is questionable whether the curve and the raking lines harmonise in such cases. A quasi-triforium is introduced; rectangular openings, having columns with red marble shafts, being coupled in the thickness of the wall. This design is illustrated by very good perspective views, the best of which, however, is "killed" by ornaments in the corners, such as it is the fashion of architects just now

to place for the destruction of what there is of real merit.

Mr. C. Gray's design ("especially mentioned") is a combination of Romanesque general character and forms, with Gothic details. The plan consists of nave and aisles; transepts, formed by semi-circular projections from the aisles, and by broad piers at the point of intersection with the nave; of a chancel, also with semi-circular apse; a north porch; a square tower, joined to the south aisle by a long passage-way, or entrance-porch; and an octagonal vestry. The roof of the clerestory, which is of low pitch, has a range of trefoiled arches, with shafts, and mouldings with stones set anglewise, as cornice to the eaves—also continued up the raking lines of the gable. There is a rose window at the end, the proportion of the gable being given by mouldings below,—in continuation of the decoration to the eaves of the aisles,—and this arrangement gets over appearance of imitation of the classical pediment. The windows generally, which in the apses are closely set, have trefoiled arches and shafts. The interior has more of the Early English character. It has round piers and arches, with the dog-tooth ornament. The tower has a weathered lower stage, lofty plain walling, belfry windows, and a pyramidal roof of great apparent height.

In the selection of designs for approval, the general principles appear to have been acted upon by the judges which are put forth in the report. The English Gothic designs, or those having rich tracery and elaborate mouldings, are generally passed over, and all designs with domes are "nowhere." There are, however, works of considerable merit in which a dome is introduced. Mr. S. J. Nicholl has such a design, deserving attention. It exhibits, perhaps, the best attempt at a Gothic dome that has yet been made. The main portion of the building derives some of its features from the cathedral at Florence, aided, however, by considerable freshness of thought. The west front might, with some modification, serve for a front for the cathedral. The dome, however, is very different. The plan may be described as a modification of the Greek cross, the re-entering angles thereof being in part filled up, the nave slightly extended, and towers added laterally to the west front. The dome is carried by pointed arches, which spring from columns arranged on the plan of an octagon, or more properly a square with the angles cut off so as to leave the four principal sides double the width of those at the angles. Above, by pendentives or corbelling, the plan becomes a figure of twelve sides, above which is the dome. This is decorated externally by panelling and mouldings; and at the base are Gothic windows, nearly in the form of spherical triangles, and filled with cusping, and around the exterior clustered shafts and pinnacles terminating the actual buttresses; whilst the whole is surmounted with what may be called a smaller Gothic dome, with polygonal base and perforations, and an enriched finial and cross. According to the plan, the gathering over from the arches would require unusual skill; but there is great merit in the work—clever adaptation of one example and an equal amount of invention. The western towers are square, with pyramidal cappings, the latter having, independently, details which are suggestive. Coloured marbles are introduced sparingly in compartments. The grouping of the mouldings and panelling throughout is excellent.

Somewhat on like good principles—as regards new forms in church architecture, with the provision of space on a plan more concentrated, and therefore in some respects more suitable than the traditional oblong, and with an application of the dome,—is the design of Mr. G. Aitchison, jun. It should not, however, be classed with designs of the character of either Northern or Italian Gothic. Its merits are not enhanced by the

\* See ante, p. 126; "The Church of St. Andrea, at Verelli, and the Gothic Architecture of Italy."

† In our present number (pp. 162 and 163) will be found a view and plan of the second prize design, with a statement of the considerations which guided the architect.

\* Vol. LXXV. 1845. "Gally Knight and Bunsen, on Ecclesiastical Architecture," p. 399.



profuse striping of coloured materials,—even allowing for exaggerated colouring in the drawings; and the west front, which comprises a great arch under a low-pitched roof, and two square towers with corbelled parapets, and low lead-covered spires, is weak in design. The main portion of the plan, however, deserves to be examined. There is a central octagon of coupled columns and arches, and an aisle or ambulatory around, in the form of a polygon of sixteen sides. The tambour of the dome is converted into a polygon of the same character by supporting shafts and corbelling: it contains a triforium gallery, and a clerestory with windows, and vaulting shafts supporting the ribs of the pointed vault or dome. The sixteen windows of the tambour, or clerestory, externally, have gables, and their roof covering meets that of the dome; which last covering forms a polygon of thirty-two sides on plan,—in other words, is arranged in ridge and valley form. The dome itself carries a small open lantern and spire capping. The windows are plain pointed openings, with central shafts and sub-arches, and the effect is got chiefly by the study of plan and the colour—which internally is of some merit. Porches, each in the plan of a half-hexagon, are placed north and south. The chancel, carrying out the general principle, is chiefly internal—being advanced to the octagon of piers and arches.

Mr. G. J. Wigley has also essayed the dome, and has, we presume, been passed over for similar reasons. His design is a modification from the church of Sta. Sophia, with a great increase of altitude in the dome. There are apsidal ends to the wide chancel and transepts. In the internal arrangements, the study of the same model—with, however, many important innovations—may be observed throughout. The main bays of piers and arches rise to the full height of the church, and are filled in with secondary divisions of three bays on the plan, and in two stories,—providing the lofty triforium. The west front is extended by towers—which have pyramidal cappings,—and large arches for a carriage-way under each, are provided. The dome rises from a low tambour, arcaded, and is surmounted with a very large ball and cross. All the arches are pointed, and are chiefly without moulding. The capitals and bases are foliated.—Mr. H. B. Garling, also, has a dome in his design, which generally is Gothic on a Romanesque basis. It is conceived on the same leading principle as the design of Mr. Gray, both as to position of the tower, and general decorative detail, but appears to be inferior in general proportions. A different kind of termination, however, is adopted for the tower, instead of the blank pyramidal capping, which spoils many designs. The dome, with a cluster of crocketed gables, recalls that of Pisa. In the interior, which is hardly ecclesiastical in character, the principal effect is given by a pannelled ceiling. The coloured decoration has a pervading blue tint, which could scarcely be satisfactory in any climate. Messrs. Guillaume and Campbell have adopted a plan similar in principle to that of Mr. Burges, so far as regards the apse occupying large space, and the aisle carried round it, are concerned; and their design also exhibits a feature perhaps derived from some of Wren's churches, as that of St. Magnus, London-bridge, namely, the combination of the domed capping to a tower, with a spire as the termination. Internally, they provide a gallery in the lantern, octagonal in plan, carried on pendentive vaulting. One or all of such latter features are, we think, introduced in one or other of Mr. T. C. Sorby's "alternative" designs at the opposite end of the room; but the drawings are placed too high for us to discover more than that the author has gone to an extraordinary amount of labour, though not without falling into mistakes, as in the bulkiness of his tracery. Some of his views and sections,

however, exhibit novelty, both in plan and decorative treatment.—We must break off till next week.

#### MR. G. G. SCOTT'S LECTURE AT THE ROYAL ACADEMY ON MEDIEVAL ARCHITECTURE.\*

It is with feelings somewhat closely bordering upon trepidation that, availing myself of the liberty given by the regulations recently passed by the council of the Royal Academy, I venture to address you on a subject which has never, till now, been more than incidentally touched upon within these walls; a subject, indeed, dear to my heart, and entwined among my inmost thoughts and affections, but one which, perhaps for that very reason, I feel it the more difficult to bring before you, through the medium of a lecture. It may be at first sight imagined that love, of all the human feelings, is that best calculated to aid in describing the beauties of its object, and in advocating its claims upon the admiration; but it is not so. We can hardly state the reasons why we love our parents, or our brothers. We know that it is a feeling which has grown with our growth, and is a part of our very existence. Yet it is probable that an acquaintance who has never shared in these warmer sentiments might describe their character and even their virtues more successfully than ourselves. If we seek to investigate them, we find the research all too cold and too methodical, to accord with the tone of our feelings; and, like the poet who wished to sing of the Atrides and of Cadmus, the chords of our hearts respond only of love.

So it is with those who have harboured an early affection for the architecture of their native land. Strongly as I appreciate the intrinsic beauty of the monuments of classic antiquity, and the merits of very many works of the Revival, I should doubt whether it were possible for any unsophisticated youth, before studying their architecture as a science, to entertain towards its productions in this country, any feelings bordering upon real affection. He may see in them much to admire,—much to lead him to study the art which has produced them; and this study will, no doubt, often kindle those warmer feelings which ripen into love; but this is a very different feeling from that deep and filial affection which many a youth, untaught in art, but gifted by nature with a perception of its beauties, has entertained from his tenderest years towards the old churches of his neighbourhood, and which has impelled him to walk from village to village, not only under the balmy influences of summer, but along muddy roads or snowy paths; and with glowing heart but shivering hand, to sketch the humble porch, the uninspiring steeple, and the mutilated though venerable monument, with feelings of indescribable delight.

It is this instinctive affection which it is so difficult to reason upon, and to which cold investigation seems so uncongenial; yet most pleasant it is, in after life, to find ever new proof that our early feelings have not been misplaced; that those once callous warm up when they are led to examine; that those who, strange to say, disliked the architecture of their forefathers, are now forced to admit some of its beauties; that the style, once despised, has become gradually appreciated, and its study become the favourite pursuit of thousands, every county having its society organised to promote it; that in every country in which it once flourished (Italy herself not excepted), the same revived feeling towards it has arisen; and, finally, that this distinguished academy has stamped it as equally classic with the architecture of the ancient world, and admitted it to an equal place in the instructions offered to her students.

Having found it impracticable, from previous engagements, to give, as had been kindly suggested to me, a short course of lectures during this season, I propose, on the present occasion, to limit myself to some introductory remarks on the study of Medieval architecture, which I trust, with the kind permission of the council, to follow up next year by one or two further lectures, both upon its original productions, and upon the bearing of the study of them upon

our own practice and the architecture of the future.

I will commence by considering the different claims which Pointed architecture has upon our study.

The more carefully we examine into the subject, the stronger and the more numerous do we find these claims to be. To a casual observer, the interest we feel in the subject may appear to be the result of local prejudice, or of arbitrary choice, and our Medieval styles may seem to have no greater claim upon us than those of a hundred other periods or countries. The fact, however, is the very reverse, and that Pointed architecture is marked out from among others in the most signal and remarkable manner, I will briefly point out some of the circumstances which thus especially single it out.

In tracing the history of civilization, we cannot fail to perceive that, from the earliest ages to the present, it has followed one, not unbroken, yet connected stream, and, though branches have struck off in different directions, it has ever had one main channel which at each period represents the central mass of civilization; this stream, passing now through this country and now through that, but its place being nearly always so marked as to leave no doubt as to where, in each succeeding age, the main seat of civilization is to be found. Art has in regular succession followed in the same course,—the main channel of civilization and art having been the same, though each possessing its minor branches.

The earliest seats of mental culture were the great valleys of Egypt and Mesopotamia. There, too, were the cradles of primitive art. The less enduring materials of the eastern valley have deprived us of the remains of its earlier architecture, but the imperishable ruins of Egypt will tell till earth's closing day how mighty was her primeval civilization.

Persia seems to have succeeded to Egypt and Assyria as well in art as in dominion; but long before her political power had been overthrown, the stream of mental power had been transferred to Greece, whose arts and knowledge, partly indigenous and partly derived from Egypt and Assyria, so infinitely excelled all which had preceded them, that we are apt, and with reason, to view both as the only genuine art and civilization of the ancient world.

Rome, succeeding Greece in external power, borrowed both her arts and literature, but, throughout her whole career, was as subordinate to her in these as she was predominant in power; and when that great catastrophe occurred which crushed to dust the mighty fabric of Roman domination, it was again in Greece that civilization and art flowed on, and it was thence that those friendly streams proceeded which enabled the Gothic conquerors of Rome to reconstruct what they had destroyed, and, among the *debris* of ancient art and knowledge, to sow the seeds and to foster the growth of that richer and mightier civilization which distinguishes the modern from the ancient world.

In all its earlier stages, the growth of civilization in the modern, as in the ancient, world was marked by corresponding changes in its architecture. Every age had its architectural style distinctly and strongly marked, a style which, though connecting itself unmistakably with the long chain of ancient art, that, though rudely broken in the West, had been continuous in the Eastern empire, was nevertheless so distinct from any former link in that chain as clearly to mark a new dynasty in human affairs, and to show that the stream which had passed successively through Egypt, Assyria, Persia, Greece, and Rome, was now making wide and deep its channel among those Gothic nations whose progenitors had been viewed as the enemies of art and knowledge; and that the seat of art was henceforth to be established among those vigorous races which had destroyed that of the ancient world.

My object in going over this well-beaten path is to draw your attention to three very marked *prima facie* claims which Gothic architecture has upon our study. 1. That, though we are in the habit of considering it antiquated, it is in fact the architecture of the modern as distinguished from the ancient world,—that

\* Read on Monday, March 16th.



just as the architecture of the earlier half of the world's history culminated in that of Greece, which must ever be viewed as its most perfect and most glorious representative, so did the indigenous architecture of the newer world reach its culminating point in the thirteenth and fourteenth centuries among the nations of Western Europe—the depositories of a new civilization. Secondly, that it is the architecture of the Germanic nations, through whose land the main stream of civilization now runs, as of old it did through Egypt, Greece, and Rome; and, thirdly, that it is the latest original style of architecture which the civilized world has produced; that the chain of architectural styles, commencing in Egypt, and passing on in continuous course through Assyria, Persia, Greece, Rome, and Byzantium, and thence taken up by the infant nations of modern Europe, and by them prolonged through successive ages of continuous progress, terminated in the style which we are treating of, and has never since produced another link of its own.

As, then, the architecture of Egypt claims our respect as the earliest link in the history of architecture, so are our own Mediæval styles especially marked out from all others as being its latest creation. That continuous stream of indigenous art which from the earliest ages of the world had unceasingly flowed onwards,—now through this country, and now through that; now smoothly flowing on through a deep and copious channel, now choked up with rocks, or spreading itself sluggishly, unhealthily, through marshes and morasses, but ever progressing, seemed at the end of the period we are speaking of to turn back upon its course, and, instead of creating as heretofore ever new beauties of its own, to content itself with reproducing those of bygone periods; instead of illustrating, as it were, the collateral stream of civilization which flowed on so mightily by its side—it accompanied it by images of that of an older world—of another family of nations—of another religion; and since then, though civilization has rolled on in a continuous course, it has failed to produce any style of architecture of its own.

Mediæval architecture, then, is distinguished from all other styles as being the last link of the mighty chain which had stretched, unbroken through nearly 4,000 years,—the glorious termination of the history of original and genuine architecture.

The next claim to which I will direct your attention is, that our style is *par excellence* Christian architecture.

This is a claim which it is so much the fashion of the day to dispute, and even to deride, that it demands somewhat careful investigation. Many who have no hesitation in using the terms Mahomedan, Hindoo, or Buddhist architecture, and who do not, in the least, deny the influence of the various religions of the ancients upon their modes of building, see nothing but fanaticism in attributing any such influence to Christianity; or if they do not deny this influence they view Pointed architecture as the special property of the Roman church (though Rome herself boasts of having scarcely admitted it within her walls), and find no style to symbolize their Protestantism but that derived from the heathenism of the ancient world, and whose more recent type is to be found in the great metropolitan church of modern Rome.

Other more reasoning persons object that, as Christianity, in its purest ages, adopted a modified form of the ancient Roman style, and bent it to their uses, the Roman style became by that process a *bona-fide* Christian architecture; and, further, argue that Pointed architecture, having derived some of its forms from the Saracenic, has thereby lost its title to being considered a purely Christian style.

To meet these objections, it is necessary to explain what we mean by Christian architecture.

There can be no doubt that nearly all forms of architecture have taken their rise in the temple, whose form and character have been regulated by the religion for which it was created. From the temple it has diffused itself throughout all classes of buildings, carrying with it, in a certain degree, the feeling it had

already acquired. No one will deny this of the Egyptian, the Greek, or the Saracenic; and, so inconsistent are people on such questions, that the very persons who would laugh at the term "Christian architecture," will almost, in the same breath, object to the use of our style for secular buildings, on the ground that it will make them look like churches!

Now, what we claim for Pointed architecture is, not that it is the only Christian style which has arisen, or is likely to arise, but that it has been more entirely developed under the influence of the Christian religion, and more thoroughly carries out its tone and sentiment than any other style. It is not exclusively, but, *par excellence*, Christian. The early Christians naturally adopted the style which was ready-made to their hands. That this style, as they found it, was essentially Pagan, it would be absurd to deny, but it was the only one they knew; and, carefully avoiding the types of Pagan temples, they adopted one of its secular forms, and wholly adapted it to their uses. The buildings thus produced were unmistakably Christian, but it would be absurd to say so of their style. This being nearly identical with that of their heathen predecessors, it needed a long course of remoulding before it could justly be predicated of it that it was a Christian style,—a style generated under the influence of Christian customs, to fulfil Christian requirements, and to harmonise fully with the sentiments of the religion of those who made use of it.

The earliest style which may fairly be called Christian was the Byzantine. In the East no sudden revolution had affected art or civilization, but the Greek empire, founded at the moment when Christianity became the established religion, went on quietly adapting its arts and institutions to its new religion. Art having already degenerated under the later Pagan emperors, and difficulties both from without and from within gradually weakening and undermining the power of the state, it was natural that the changing style should not have that full scope which would have been afforded it had the purifying influences of Christianity acquired full sway during the Augustan age. Painting, sculpture, and architectural carving had lamentably fallen off before they were transferred from the heathen temple to the Christian church, and even the more mechanical features of Roman architecture had departed widely from their original purity of form. The task prescribed to the new religion was not to take the highest form of Pagan art as it had existed under Pericles or Augustus, and to mould it to its own uses and its own purer and holier sentiments: what she had to deal with was a mere wreck of its former self: all its early simplicity destroyed, its vigour enervated, its magic instinct for beauty gone, its artists fast falling back into barbarism; and that not the savageness of early but untutored art, but the effete and nerveless heartlessness of a race whose glory had departed. It was this lifeless body which Christianity had to awaken to new energy,—this dull and spiritless lump out of which she had to mould her future arts, and that at a time when the western half of the empire was about to be crushed to powder by the mighty storm of northern barbarism, and the eastern portion itself weakened by gradual decay and by the incursions of the Goths, Huns, Persians, &c. and eventually by the tremendous inundation of the followers of Mahomet. That such a glorious result as Byzantine architecture should have been produced out of materials so lifeless, and through the agency of a decaying nation, speaks volumes for the power of religion over art.

Let us turn, however, to the Western Empire. There the case is still stronger. With the same decayed and lifeless art as their nucleus, the people of Christian Rome had the additional disadvantage caused by the removal of the seat of government, and with it of the seat of art, to Constantinople; nevertheless, their first efforts were so successful, that though, in the words of Thomas Hope, "The architecture of the heathen Romans, in its deterioration, followed so regular a course, that that which most nearly preceded the conversion of its rulers to Christianity is also the worst,"—the same author tells us that the early Christian buildings, "from their simplicity, the distinctness,

the magnificence, the harmony of their component parts, had a grandeur which we seek in vain in the complicated architecture of modern churches."

What course art would have taken had the Roman empire continued, it is impossible to judge. It was destined to share the fate of the empire itself, and to be utterly overwhelmed by that mighty deluge which severs the ancient from the modern world; so that its Christianization, instead of being gradual and progressive, as in the East, became a complete reconstruction by the successors of those who had destroyed it, though aided in their work by the friendly hands of those who, in the Eastern empire, had kept alight the lamp of civilization. The architecture of the West, therefore, instead of being a mere translation of the old style from Pagan to Christian uses and expression, was a new creation, formed, it is true, out of the ancient *débris*, but, nevertheless, originated, carried on, and perfected by Christian nations, and for Christian uses, and may, consequently, be said; even in a stronger sense than that of Byzantium, to be a distinct Christian style; and I suppose none would doubt that its culminating point, and that to which all its progress tended, was the Pointed architecture of the thirteenth and fourteenth centuries.

An argument against its claim to the title has been founded on the theory that the Pointed arch, which is in some respects the culminating feature of the style, was not developed spontaneously by our Christian forefathers, but learned by them from the Saracens. As well may it be attempted to sever Grecian architecture from the mythology and traditions of the Greeks, merely because some of its details may find their prototypes in Egypt or Assyria; or to disconnect the native architecture of India from their religion because its first inspiration seems traceable to the Fireworshippers of Ancient Persia! Even Saracenic architecture itself was an emanation from that of Christian Greece, so that if we are indebted to it for the Pointed arch (a question which I will not now attempt to investigate), she only paid back to the religion from which she had borrowed. No one, however, can study the tendencies of the late Romanesque without seeing that the Pointed arch was becoming every day more necessary to the development of the germ which it contained. The gradually increasing predominance of the vertical over the horizontal; the increase in the height of pillars and jambs demanding a proportionate addition to the arch; the necessities of groined vaulting over oblong spaces; and a hundred other evidences, proved the Pointed arch to be the inevitable result of the already attained developments, and often had it, almost unconsciously, appeared in intersecting arcades. If its systematic adoption can with certainty be traced to the suggestive architecture of the East, surely this does not unchristianize the already Christian architecture of the soldiers of the Cross, who brought the idea home, among the spoils won from their unbelieving foes! Is it not rather in the spirit of our religion to receive tribute and homage from all the nations of the earth? And if it may be said of the Christian Church, that—

"Eastern Java there  
Kneels with the nation of the farthest west;  
And Christian spreads abroad the hand,  
And worships."

It is equally reasonable to expect of her material temples, that—

"The looms of Osmus, and the mines of Ind,  
And Java's spicy groves, lay tribute there."

The character of a style of art does not depend upon the mere material from which it has been fabricated, but upon the sentiments with which it has been developed. Were not this the case, all styles, excepting, perhaps, those in China and Central America, with a few others still more obscure, would be more or less connected with the religion of Egypt, or of Nineveh; whereas, in fact, every race up to the sixteenth century, had so moulded the original materials upon which its arts have been founded, as to render them expressive, in a great degree, of their own sentiments, and especially of their own religion; and more strongly than in any other was it so with our own forefathers, when developing the latest of all styles of genuine



architecture, and forming it to harmonise with the sentiment of our holy religion.

The last of the historical claims of Pointed architecture to which I will call your attention is, that it is the native architecture of our own country, and that of our own forefathers. Here, again, I must define my meaning for the sake of meeting a class of objectors who delight to attach a false and exaggerated meaning to an expression.

I do not, then, mean that Pointed architecture belongs to us in any different sense from that in which it belongs to France or Germany: I do not mean to revive the claims of our country to its origination, nor to assert in its behalf any pre-eminence share in its development. All I mean to urge is the simple fact that, by whatever members of our family of nations it was shared, it was, nevertheless, the architecture of our own country, just as much English as we are ourselves, as indigenous to our country as are our wild-flowers, our family names, our customs, or our political constitution.

In England, as in France and Germany, the same Romanesque architecture had (with local varieties) grown up with the new civilization: as it perfected itself it showed in each the same tendencies and the same yearnings, which Pointed architecture could alone satisfy. If it were so, that these were at length met by suggestions from the East, it was our forefathers who fought there side by side with those of our neighbours; and the lessons learned and the trophies won were common property. It is possible that France was more rapid in making use of them, and it is certain that Germany was the most tardy in doing so; but in each the result had long been aimed at; in each it was the natural consequence of what had already been attained, and was therefore not the property of one, but the common inheritance of all; and each having attained it, carried it on and developed it in her own way; thus making it in every sense her own.

I am, however, only urging this as a claim which our old architecture has upon our own study. If we investigate the architecture of Egypt, of Persia, or of the East, we find that it tells of races with whom we have no national or personal sympathy. If we go to the classic shores of Greece, though there we should be viewing the work of a race whose arts and literature are more than those of any other people, the property of the world, we nevertheless fail to find anything to connect them in any special sense with ourselves. If we transfer our researches from Greece to Rome, though we now view the vestiges of that mighty nature whose world-wide sway stretched its iron sceptre over our own land, and though we find among them the germ of the arcuated architecture which forms the nucleus of our own styles, they are still severed from us by so wide a gulf that, were it not for the modern revival of their style, they would appear perfectly alien to our race and climate. All these studies must be followed up in distant lands, excepting only those few fragments of Roman work scattered here and there in our own and neighbouring lands, the evidences of universal empire, the footsteps and symbols of ancient servitude. How different is the study of Gothic architecture! Its original exemplars are at our own doors; the very churches perhaps in which from our infancy we have worshipped; the monuments of our own forefathers; the works of men bearing our own names, whose armorial badges we are still proud to use; who spoke, in its pristine form, our own language; who sat in our own parliaments, were lords of still existing manors, founders of still surviving charities, men who fought the battles of which we are still proud, and laid the foundations of our liberties and of all those institutions which render the name of England illustrious among the nations of the earth. Surely the architecture which grew up among men so nearly allied to us has a pre-eminence claim upon our attention.\*

PARIS.—A fine collection of drawings by Leonardo da Vinci has been obtained for the Louvre, at the cost of 1,400*l*.

\* To be continued.

### MICHELANGELO'S "DAVID," AT BROMPTON.

THE great attraction for artists and art critics in the coming Exhibition at Brompton will be a cast of Michelangelo's celebrated statue of David, the original marble of which stands in the Piazza in front of the Palazzo Vecchio, at Florence.

For this grand acquisition to our national collections, we are indebted to the King of Sardinia, who, in a spirit worthy of a kingly patron of the arts, presented the cast to the English Government, as a memento of our alliance and his visit to London.

The history of this statue is as remarkable as its excellence is wonderful, and shows how genius and perseverance, when combined, can overcome even the greatest difficulties.

When Soderini was made Gonfaloniere of the Republic of Florence, Michelangelo, then in Rome, returned to Florence, in order that he, in common with other Florentine sculptors, might enjoy the liberally bestowed patronage of Soderini. On his arrival, Michelangelo made an earnest appeal for a certain huge block of marble, which had been embossed, or rough hewn, for a gigantic statue by Fiesole, but which had lain in its incomplete state for many years, regarded as spoil for a large figure, and too fine a piece of stone to be cut into small pieces. The Gonfaloniere had intended to present the stone to Leonardo da Vinci, but, at the time of Michelangelo's application, was preparing it as a present to a celebrated Florentine sculptor, Sansovino. The block was, however, given to Michelangelo, who determined to make a single statue out of it,—an undertaking which, from the heaped condition of the marble, no one else would attempt.

The difficulties to be surmounted were of the most perplexing character, for the previous *embossing* had so destroyed the original capabilities of the piece, that no figure in violent action, or with extended limbs, could be wrought from it, and it was much feared that other pieces of marble would have to be joined to it before any work of character could be produced. Instead of resorting to this expedient, Michelangelo adapted his design to the dimensions of the block, which he obtained by careful measurement, and having in his usual manner received the sacrament before commencing the design, he modelled a small statuette in wax, of David as the youthful shepherd boy, preparing to sling the stone at his giant opponent. This design was so exactly calculated to the dimensions of the marble block, that on the shoulders and toes of the large statue may yet be discerned the rough marks of his predecessor's chisel, and which Michelangelo was too scrupulous to erase, for fear of risking the minute proportions of his own gigantic work. His devotion to the task of transforming this disshapen mass to his own exquisite design was entire, permitting no one to see the work during progression; and it is of the head of this statue the tale is told, that upon having completed it, even to his own ideal, he struck the marble with his mallet, and exclaimed, "Now speak I for I know you can."

To say little of the excellencies of this mighty performance would be to do it an injustice, and to say much would be folly. The perfect expression of youth in every feature and limb, in so gigantic a figure, is a triumph of art, whilst the deep cuttings and apparent exaggerations of a work intended to be seen at a distance, cannot in a single feature be detected on the closest and most minute inspection.

Vasari's own remarks upon it are, perhaps, slightly influenced by his intimate friendship with Michelangelo and admiration of his genius, but may, nevertheless, be here appropriately given:—

"The work fully completed, Michelangelo gave it to view; and truly may we affirm that this statue surpasses all others, whether ancient or modern, Greek or Latin: neither the Marforio at Rome, the Tiber and the Nile in the Belvidere, nor the giants of Monte Cavallo, can be compared with it, to such perfection of beauty and excellence did our artist bring this work. The outline of the lower limbs is most beautiful. The connection of each limb with the trunk is faultless, and the spirit of the whole form is an attitude, so perfect a grace, such beauty of head, feet, and hands; every part is replete with excellence; nor is so much harmony and admirable art to be found in any other work. He that has seen this, therefore, need not care to see any production besides, whether of our own times or those preceding it."

The eyes, mouth, and toes are so minutely elaborated that, though a nude figure, it may be called

\* The original anatomical studies for this figure were exhibited some time ago at Marlborough House, and are now added to the Museum of Science and Art. The careful rendering of each muscle and tendon, in these wax models, shows how minutely Michelangelo studied every detail before he attempted to commit his design to the marble, a lesson not to be thrown away.

the foundation and masterpiece of the "natural" school of sculpture; these, as well as other details, being these especially being direct transcripts from nature.

The height of the figure is 16 feet 6 inches. It came to England in five pieces,—the trunk, legs, head, and two arms. The legs were slightly shaken, either in the journey or during the unpacking, so that it was feared they would not support the enormous weight of the trunk and head. It became necessary, therefore, to add a large iron support to the inside of each leg; and this necessitated the moulding of the legs, in order that the outline of the figure might not in any degree suffer from the mending and fitting in of the grooves cut for the insertion of the supports. So large a portion of the figure having been moulded, Mr. Bruciani completed a mould of the whole, and thus an accident has proved a boon, for we shall now hope to see casts of this grand work in the Crystal Palace, and other such institutions. Portions of the figure, such as the mask, hands, and feet, will also be of valuable assistance in schools of art, as well as private studios.

So great is the enthusiasm aroused by this cast (the first ever made in plaster, only one having been cast in bronze), that applications have been made for permission to make copies of it in Parian and terra cotta,—an enterprising terra-cotta manufacturer having offered to try the experiment of burning it in one piece, which, if accomplished, would be almost as wonderful as the circumstance of its original production.

### THE SCENERY IN "RICHARD II." AT THE PRINCESS'S THEATRE.

SCARCELY has the curtain fallen upon the crossed and wayward loves of Hermia and Lysander, Demetrius and Helena;—scarcely has the last burst of laughter died away, as Bottom, the weaver, perpetrates his crowning drollery by his hard and difficult death; the city of Thebes, restored, yet rears its temples and its palaces in our fresh remembrance;—Puck still seems to plague us by his mischief, the fairy-train of Oberon and Titania, to weave their mad dances upon the moonlit greenward, or make the woods re-echo to their wild and superhuman chorus;—and the last notes of the creations of the gifted Mendelssohn yet linger upon our charmed sense, when again the curtain rises, and yet another revival from the works of our great dramatist, in all respects equalling, in some, perhaps, outrivaling its predecessors, is presented before us by the enterprising and indefatigable manager of the Princess's Theatre.

We have followed Mr. Kean to the capital of Assyrian Ninus; have trod with Macbeth the wilds of Scotland and visited its pre-Norman fortresses; have seen the eighth Henry in his voluptuous court, and studied in his palace the magnificence of the last period of the Gothic style; have thence transferred ourselves to Sicily, and in the picture of Doric Syracuse, second to Athens only in arts and luxury, contemplated a portraiture of the architecture, costume, and domestic manners of the Greeks never before attempted upon any stage; and lastly, in the revival immediately preceding the present, obtained a glance, though but transient, of the Athenian capital itself.

And now the scene is once again in merry England;—the subject, the three last years of the short and disastrous reign of King Richard II.;—the date from 1396 to 1399, when the Decorated taste was merging into the Perpendicular, and when a semi-barbarous, semi-civilised taste in dress and equipment, symbolical of the state of society at the time, gave the opportunity for a display of military and heraldic gorgeousness never before excelled, if equaled.

This opportunity has not been neglected. The performance of "Richard II." has not hitherto been marked by any very great success. The absence of what is called "plot," has proved in general a want of that popular element without which mere dialogue, however poetical and beautiful, has failed to secure public patronage; but the happy idea in Mr. Kean's various revivals, of investing narrative with all the illusion which scenery, costume, and circumstance, in the strictest accordance with historical tradition and antiquarian sanction, could confer, has, in addition to the surpassing merit of the plays themselves, called forth an amount of appreciation from the public, which seems to indicate that the one thing wanting has been supplied. In the present instance, every available authority has been consulted, to identify scenes, actors, and circumstances with whom and what they represent, and it is only where actual warranty fails, that invention has been called in to supply the deficiency, and in such case every precaution taken not to exceed or diminish aught that might be deemed essential to the semblance of truth. From the beardless and juvenile-looking monarch, as described by the Monk of Evesham, and whose exact resemblance to his con-



ventional portraits may be recognised at a glance, down to the lowest menial in his train, every detail has been scrupulously observed, to stamp the period with reality.

In the opening scene of the Council Chamber in Westminster Palace, and the following one in the palace of the Duke of Lancaster, two styles of internal decoration are presented; the latter being of the thirteenth century, the former of Richard's own period. A ceiling, whose beams and panels are highly ornamented and polychromatised,—walls hung with tapestry, embellished with the kneeling and chained hart, the pod of the *plantagenista*, the rosemary-branch, and the letter R,—a throne, the satin canopy of which is embroidered with the same devices, and an inclosure of stalls for the Privy Council, constitute the leading features of the first. An air of agreeable simplicity characterizes the latter in its equilateral arched stone ceiling, of low spring; the ribs of which are ornamented with the dog-tooth and other mouldings picked out in colours; its small stained glass window at the further end; the nicely drawn door and ornament that encircles it, and the sideboard with its accessories.

A very remarkable scene is that of the death of John of Gaunt, in Ely House. It occurs in an old baronial apartment of unexceptionable form, into which a subdued light is thrown from a bay window. The walls are covered with paintings, elaborately and minutely executed, of passages in the lives of St. Edmund (Richard's patron saint) and St. Fremund, from an illuminated manuscript in the British Museum. The fitful light from the expiring embers of the ample-hooded chimney illumines the costly hangings and coverlet of the couch upon which time-honoured Lancaster reclines; and the warning words that fall from his lips assume a doubly prophetic significance from the solemn air that pervades the whole apartment. The painting of this scene is highly creditable to Mr. Lloyd.

Of the architectural restorations, perhaps St. Stephen's Chapel, painted by Mr. Dayes, presents the greatest amount of elaborate panelling and tracery, albeit, the chapel itself, seen through the arched entrance, is but faintly delineated. Founded by Stephen, the chapel was rebuilt in the reign of Edward II. between 1320 and 1352, and until its destruction by fire, in 1534, to which time, from the reign of Henry III. it served for the House of Commons, was considered, as all our readers know, a fine specimen of Decorated. Drawn in angular perspective, and seen through the arches in the foreground, it makes a very beautiful and effective scene.

Westminster Hall forms another elaborate interior, the fine roof of which would be seen to still greater advantage were the gallery erected for the spectators of Richard's abdication a little lower, and of less size. The hall was materially changed in the latter years of the reign of that unfortunate king, when the walls were heightened and the present fine roof constructed. It is not a little singular that the first use made of the building should have been for the deposition of the monarch who restored it. Acting on the evidence, documentary and otherwise, that remains of the use of colours on roofs and walls during Richard's reign, polychromy is introduced, though but sparingly.

The scene, however, that will be last forgotten in this list of revivals, is a street scene in old London, where the crowd have assembled to welcome Bolingbroke and insult their fallen monarch. A block of picturesque, half-timbered houses, stands obliquely in the centre of the stage, from which streets run to two separate vanishing points. The varied designs of these houses, all adorned with tapestry and hangings, from which festoons hang from side to side of the streets, and whose windows are crowded with the gaily-attired spectators,—the motley crowd in the street below, dressed in every variety of costume of the period,—the feats of jugglers, jesters, and "titanic fools," the shouts of merriment from the mob, and the enlivening sounds of a real peal of bells, form the most exciting *tableau* of the piece.

One more interior, and of a different character to the others, should not be overlooked: the dungeon at Pomfret Castle, a Norman crypt with the vaulting carefully made out.

Two other restorations of great merit deserve consideration: the exterior of Plant Castle, and the Traitor's Gate at the Tower of London. The first of these, in exact accordance with the type of the Welsh castles, is excellently painted, and has an extra air of substantiality given to it by the raising of an actual portcullis and lowering of the drawbridge by which the unfortunate Richard throws himself upon the mercy of his rival. The second shows the internal elevation of the tower formerly called "St. Thomas's," but, from the water entrance beneath it, through which State prisoners were brought, known better by its present name. It is nicely painted by Mr. Gordon.

In the Duke of York's garden at Langley, adapted from the M.S. of the *Roman d'Alexandre*, in the Bodleian library, we have a specimen of the style of

the fourteenth century, new in effect, and very well painted by Mr. Cubbert. Two country scenes of great beauty, and a representation of Milford Haven, with Pembroke Castle restored, and the fleet lying at anchor that conveyed Richard back to England, as copied from the Metrical History in the British Museum, form an agreeable relief to the architectural substantialities: one of these is a charming landscape, with practical bridge, showing the band of Mr. Grieve himself, under whose able direction the whole has been done.

In the scene of the Lists near Coventry, the artifice employed with such success in the Hall of Sardana-palus and the Banqueting-room of Henry VIII. for procuring indefinite length by angular position as regards the stage, is resorted to with complete success.

For the aid and authority of Mr. Salvin and Mr. Godwin, in the architectural restorations of this play, and for the antiquarian knowledge of Mr. Henry Shaw and Mr. George Scharf, Mr. Kean tenders his acknowledgments in the play-bill.

The subject of costume we dare not here touch upon; suffice it to say, that the French metrical history of the deposition of "King Richard II." has furnished much authority in its illuminated pages, in addition to various other manuscripts, and the works of Strutt, Meyrick, Fairholt, and Shaw.

As regards Mr. Kean's conception of the part of the king, there seems to be but one opinion,—that of unqualified praise. The various phases in his eventful career of absolute and imperious authority, surprise, rage, hope, despair, all receive their full value at his hands; all have their exact weight assigned them in his balance of the whole.

Not less meritorious in her degree, is Mrs. Kean, who in the little she has to do as his queen, throws a depth of feeling, an intensity of grief, into the part, that raises the character into an importance it has not hitherto enjoyed. And if our province were to speak of acting, Mr. Ryder and Mr. Walter Lacy would certainly come in for a full share of praise.

A. F. A.

#### NATIONAL INSTITUTION OF FINE ARTS, AT THE PORTLAND GALLERY.

TEN years have elapsed since certain adventurous and self-dependent artists resolved to afford themselves and others more extended opportunity of becoming known and appreciated according to their particular merits, by the somewhat hazardous experiment of allowing all who chose to contribute to the expenses and formation of a Fine Art exhibition, a fair proportion of the most favourable positions, irrespective of professional precedence. For a season or two the result was necessarily a heterogeneous combination of the good, bad, and indifferent; but sufficiently encouraging for its originators to persevere, and by a little judicious restriction and modification of first intentions, gradually attain success.

Although the advantages offered by this institution are palpable enough to invite new-comers, it still devotes on the nucleus of its members to support its character.

Mr. R. S. Lauder, R.S.A., is almost singular in historic and dramatic compositions. Mr. Lauder has gone to his old source for inspiration, and seems to cling tenaciously and gratefully to the works of Sir Walter Scott, perhaps because they are associated with early triumphs. (132) "Meg Merrilies and the Dying Smuggler," proves how sympathetically he can embody the author's meaning. In the (286) "Death of Arthur, duke of Bretagne," these qualities for which he is renowned are still more conspicuous: whatmuck Falconbridge lacks in character is made up for by pathos in demeanour, and one forgets to look for finish where the desired impression is conveyed so powerfully.

The chief component of the present collection is essentially landscape, and the most attractive realizations emanate from the Williams' family, whose industry is only equalled by their ability of turning it to the best account. (44) "On the Welsh Hills," has furnished Mr. A. W. Williams a theme to dilate upon most glowingly—"The shower passed, a gleam of sun makes nature doubly joyous."

It would be difficult to exceed this in rich local colour, and truthful effect; every passage suggests conscientious study of Nature and an intuitive perception of its most beautiful phases. The same remarks would apply to (343) "A Tranquil Eve," and (466) "Haymaking." Mr. S. R. Percy also delights in the grandeur of Welsh hills (82), "In the Vale of Ffestiniog;" but, investing them with a distinct effect, leaves them cold, massive, and uninfluenced by atmospheric medium. He, like his brother, is an earnest student of all he represents, and has marvellous dexterity of manipulation; but in this very fine picture, so well composed and drawn, the preponderance of slaty greys is not agreeable to the eye. (21) "In the Highlands," C. Leslie, surely one of the same family,

is forcible and real-looking. (31) "Bolingbroke's Entry into London," F. Cowie, has many good points. (34) "Dutch Tankard and Fruit," W. Duffield, is so closely imitated as to be worthy of G. Lane. (50) "Rochester from Strood," E. C. Williams, with (265) "Unloading a Collier—Night Scene, Hastings," and others, proclaim facility of execution, as well as knowledge. (51) "A Bye-way among the Hills," F. W. Hulme, is delightfully fresh and true. (99) "River Longwy, North Wales," by the same, appeals at once to the attention. (66) "Haymaking in Switzerland, Lausanne," by H. Moore, looks painted on the spot, and is a very clever performance, in which every incident is most faithfully transcribed. (70) "A Mountain Mirror," G. Pettitt, a lake reflecting the surrounding scenery, has been elaborately studied. (87) "The Mountain Stream," W. Underhill, is a pleasing agroupment of rustic figures. (109) "Westminster Abbey" (Henry the Third's Tomb), Harry Williams, is cleverly painted. (120) "The Painter's Studio," J. D. Wingfield, is a repetition of a successful picture, only deteriorated by its want of novelty. (246) "The Merry, Merry Month of May," J. S. Raven, looks rather chill and bare, yet wears withal the aspect of probability. (281) With no title, but to which some lines are appended, is really a transcript of one of those little islands met with in a row up the Thames (well known to aquarian picnic parties), poetically imbued with the declining sunlight of a summer's evening, by G. A. Williams, and pleasantly contrasts with (404) "Winter—Sunset," by the same. (315) "Interior, Accrington, Lancashire." There is always something admirably quaint and pleasing in Mr. D. Pasmore's works, but in this case he has produced a perfect little gem. (395) "Morning Light on the Hills," is by A. Gilbert, another Williams—and as this asserts—not the least clever of the number. (50) "A Family Group," H. B. Willis, consisting of two goats and a kid, is carefully, but somewhat timidly executed. Amongst other taking pictures, will be found (25) "The Scarecrow," P. R. Morris; (69) "Returning from the Conventicle," H. Stacy Marks (a capital impression of character); (79) "A Ragged Path," C. Dukes; (276) "Crossing the Stones," J. Dearn; (307) "The Taming of the Shrew," W. M. Egley; (321) "Modena Minstrelsy," Rossiter; (373) "Morning in a Glen," R. S. Boud; (439) "In the New Forest," H. Moore; (446) "Salmon and Trout," H. L. Rolfe; (448) "Cottage Interior," J. B. Burgess; and lastly, we would mention, having nearly overlooked it, (231) "Ashford Mill, Derbyshire," A. Fraser.

#### THE MODEL OF WREN'S FIRST DESIGN FOR ST. PAUL'S.

THE Architectural Association have addressed a memorial to the Dean and Chapter of St. Paul's Cathedral, on the present condition of the model of Wren's first design for St. Paul's Cathedral. The writers say:—

"The fact of its being the work of that great man would alone entitle it to the reverent consideration of all architects; but when, in addition to this, the model is admitted to be a work of extraordinary beauty, and that it remained to the last the favourite design of Sir Christopher Wren himself (he himself desiring the model to be perfectly preserved), notwithstanding the numerous works of beauty afterwards produced by his hand; no architect can see it gradually dropping to decay without feelings of extreme regret, or without protesting, in the name of the art which gave it existence, against the neglect which has allowed it for so many years to be threatened with total ruin."

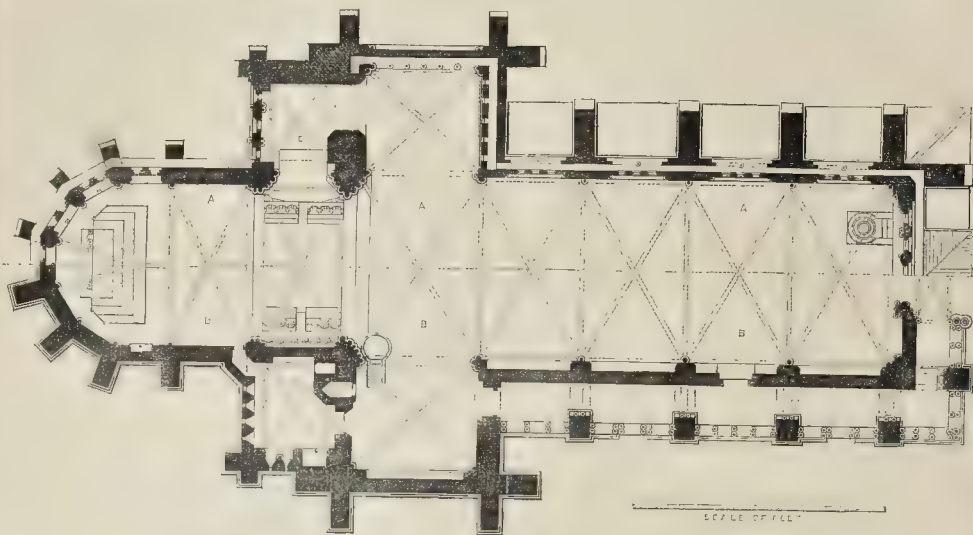
They further suggest that the position of the model in the room in which it is exhibited is not favourable for inspection.

#### THE MIDDLE TEMPLE LIBRARY.

THE new library which is to be erected for the Society of the Middle Temple, from the design of Mr. H. R. Abraham, will be 55 feet long, 42 feet wide, and 62 feet high to the underside of the ridge. Beneath, will be class-rooms and rooms for the benches. The building is Gothic of the Perpendicular period in style. There will be an oval window at the end next Garden-court, and a large traceried pointed window in the end, which will be seen from New-court. There will be a louvre and spiral on the roof. The new library will be connected with the old hall by means of a new turret to be added to the latter, with a flight of stairs which externally will take the shape of a flying buttress. The library will have an open timber roof.

ST. HELEN'S CEMETERY.—The burial board has accepted the tender of Mr. John Midgham, St. Helen's, for the erection of the three chapels and two lodges, at the sum of 3,286*l.* 1*s.* 3*d.*, and that of Mr. Edwin Knight, Manchester, for the earthwork, road-making, drainage, &c. at the sum of 2,286*l.* Mr. Barry of Liverpool is the architect.





MEMORIAL CHURCH, CONSTANTINOPLE.—PLAN OF SECOND PRIZE DESIGN.

## THE SECOND PRIZE DESIGN FOR THE MEMORIAL CHURCH AT CONSTANTINOPLE.

THE author of this design claims to have attempted to secure the object which the committee had in view by making his design avowedly monumental. He considered, therefore, that a fine simple chapel without aisles was the most suitable form to adopt; and though the width of his church is considerable when judged by our English ideas, it is below that of a large number of continental examples. In his memoir Mr. Street strongly argued against the impropriety and absurdity of taking a cathedral as the type for the proposed church, which ought rather to be considered as a chapel for the English residents in Constantinople than as the church of a future bishop. He considered, also, that the church should distinctly proclaim its English origin, and not be an imitation of foreign buildings to such an extent as to render it difficult to distinguish it from a building devoted to the use of Italians or others. He looked, therefore, to Italian buildings only for the best modes of securing his church against the heat of the climate. These he found to be, generally, very few and small windows placed at great height from the floor, groined roofs, and external cloisters or porches. Besides this, in Constantinople it is the custom to have large blinds in front of the windows. The windows in the design are therefore arranged with outer and inner traceries, and so narrow is the light and so high from the floor that the sun would never have fallen upon the people occupying the seats on the floor of the church. There was a passage round the walls also at the base of the windows, to allow of blinds of lattice-work being put up and taken down if it were found necessary. The spaces between the buttresses were converted into a small cloister, which would protect the doors from the sun and keep the walls cool. No one who has not been in a hot climate knows how intolerable a large amount of window is in such a city as Constantinople, and in this case, as figures and subjects were expressly forbidden, it was useless to think of filling the windows with stained glass sufficiently rich in colour to subdue the light.

It was proposed to build the walls of rubble stone of the neighbourhood, covered occasionally with stone of other colours. The use of marble was intended to be mainly reserved for the interior. As the native workmen are incompetent to execute any but the simplest work, it

was felt to be a great point that there should not only be as much simplicity but as much similarity as possible. The groining, therefore, though of large dimensions, was of the simplest character, and similar throughout. Following the example of architects in similar climates, the mouldings were all to be very simple.

The designs for pulpit, font, stalls, altar, and reredos, sent with the design, were not included in the estimate of 20,000, but were proposed by the committee as the objects of future donations, by way of memorials. The committee gave no instructions as to monuments, &c.: no place was specially provided for what in England are rapidly being expelled from our churches; but it was thought that the external cloisters would afford all the space which would be required for this purpose.

## REFERENCES.

- A. Half plan at level of windows.
- B. Half plan at level of cloisters.
- C. Sacristy.
- D. Organ chamber.

## ART TREASURES' EXHIBITION BUILDING, MANCHESTER.

THE decoration of the Manchester Exhibition building is now being proceeded with. The centre nave is being executed by Mr. Crace, and the side galleries are being done under his direction, but by a Manchester firm.

All the principal constructive features in the centre nave, such as the columns and main girders, are of a pale bronze, relieved slightly with gold. The walls are a deep but subdued tone of red, finished at top by an ornamental frieze. The main arches of the roof are of pale bronze, the rivets being gilt, and the thickness relieved with gilt patera, the filling-in between the flanges of the arched ribs being painted in red scroll or fret work alternately, on a vellum ground. The ground of the ceiling is a warm grey, the purlines being vellum colour, relieved with red; gilding is but sparingly introduced. In the side galleries, the walls are olive-green, finished with a frieze on a red ground. The ceilings here correspond in general tone of colour with that of the grand nave.

## ILLUMINATED CLOCKS.

I beg to remind you that it is now more than two years since I suggested that the face of illuminated clocks should consist of concentric discs. In my plan I did away with the necessity of hands altogether. My proposition was, that the centre disc should be fixed, that a concentric disc, with a circular opening, should encircle it over an illuminated red set of

figures, and that another disc should encircle that with an illuminated set of white figures, the consequence of which would be, that there could always be visible a red and a white circular space. In the day time, of course, when the circles were exactly opposite the figures, they would be visible; but even when not exactly coincident, the time would be equally well ascertained, as the relative position of the hands on a blank face is pretty well known by habit of observation: indeed, if one might analyze the action of the mind's eye, on looking at a watch, it is only the ends of the hands that are required. The only objection to the plan that has been suggested is the amount of power required to turn the discs. I contend that if they were made of sheet copper, and travelled in a rebated joint, the power required would be less than for the large hands now in use, and the power of the wind would be at zero. In this plan the instant the spots are visible the time would be known: in all the present plans an illuminated clock is seen long before you can ascertain the time.

W. H. BUTTERFIELD.

P.S. The white spot might be the minute, the red the hour.

## CONGRESS TO SETTLE THE PRINCIPLES OF GOTHIC.

ALL architects, I think, agree that one of the causes of the beauty of the Gothic architecture of the thirteenth century was the unanimity of the Freemasons as regards the principles of Gothic, and one of the great defects of the present day is, that every architect has his own principles. Now the only way to arrive at unanimity is for architects to form themselves into a society after the following plan. Let us request them to convene a meeting in some spacious hall in London, and request the attendance of all architects of England, elect a president, and proceed to work by holding daily meetings and discussing the various principles, and thereby come to some general understanding, and frame rules and principles for the system of Gothic architecture to be pursued. I doubt not that the Freemasons settled their principles by a similar system in the thirteenth century. They must have done something of the sort. I do trust we shall see again a regular system of principles laid down, and then we shall have some chance of seeing as fine buildings as those of the Middle Ages. Architects of original talent would then have some fixed system, and not lose time by giving themselves up to wild speculations about the so-called principles of Gothic art, but would be employing their talent to raise a new style suited to the nineteenth century, upon a true basis, and the thorough study of previous styles; for, as Mr. Sydney Smirke remarked, a new system will not spring up in a night. Hoping that some such meeting may be convened, I remain,

CHARLES DE VERE.





MEMORIAL CHURCH, CONSTANTINOPLE.—DESIGN BY MR. E. W. STEAR, ARCHITECT, TO WHOM SECOND PRIZE WAS AWARDED.



## INFLUENCE OF FASHION ON TASTE.

Is the influence of fashion on taste beneficial, or prejudicial? Does fashion really affect taste at all, or does taste affect fashion? Taste and fashion are more frequently antagonistic than friendly. They do not often row in the same boat, or march in the same path. They frequently diverge widely apart, yet sometimes, for brief intervals, they converge, and while the convergence lasts they beneficially affect each other; for, if any particular species of taste becomes fashionable, it is patronised by the *haut ton*, by parties of influence, by men ambitious of being distinguished in peculiar matters of taste, whether architectural or artistic. Fashion is variable, ever-changing, and mutable: it moves in cycles more or less short, dies, and renews at intervals. What is old-fashioned to-day may be quite new twenty years hence, and what is quite the rage to-day is only some modification of the *crête mode* in the time of our grandfathers.

These observations apply to architecture, sculpture, painting, decorations, furniture, and the kindred arts, with quite as much force as to mere sumptuary matters, modes, and manners, but they do not apply to *high art*, for that is of all time, independent of the petulant changes of mere fashion in taste. Here lies the distinction between art and taste. One is real and permanent, the other temporary and artificial.

A "thing of beauty is a joy for ever," but a thing of fashion is only considered beautiful while in fashion. If based on the principles of real art, it will remain beautiful to all ages; but if based on mere fashionable taste, its beauty fades with the fashion that gave it birth. From being admired as a thing of beauty, it becomes odd, quaint, or curious, a mere type of past tastes, a prized article in the "old curiosity shop"—a gem with the antiquary, but not an object of art.—the work of genius challenging admiration through all times, simple, pure, and true, perfect of its kind. If conceived in the true spirit of art, the stamp of genius is ineffaceable; it endures through a hundred cycles of mere fashionable art and tastes too fickle to fix a thought which the "world will not willingly let die." Architecture moves in cycles: we live in the midst of revivals, of styles resuscitated, and of blending styles. New combinations of old parts create a novelty, with nothing new in principle, but new only in arrangement, with no great range of variety in detail; each style being more or less rigorously confined to its peculiar type of ornamentation. No one would insert Gothic details in a Corinthian building, or introduce Corinthian details into a Gothic structure. Inigo Jones put a "magnificent portico" to old St. Paul's: the portico might have been good in itself, perfect in detail and proportion, but yet an excrescence on the building to which applied. These freaks of fancy are not unusual, especially during the last century. This curious species of barbarism is not uncommon on the continent any more than in England. Many beautiful internally by the injudicious application of classic ornamentation. Corinthian altar-pieces and Ionic organ-lofts do not accord with elaborate tracery in Gothic churches. They may be good in themselves, but are incongruous when placed in forcible and direct contact with groined vaults and oriel windows. Rich specimens of this ruthless defiance of every rule of art and real taste are common in France. Narbonne, Capetang, and Beziers cathedrals have all been beautified in this fashion, for it was once the fashion of the day to improve Gothic choirs with classic decorations. The fashion was to introduce many-coloured marbles, as a direct contrast to the rich grey of the original time-honoured stone. Clustered pillars, beautifully moulded arches, and panels rich in elaborate tracery and diaper, were ruthlessly cut away, or lined with slabs of variegated marbles, doublets cautiously polished, and "adorned" with columns of a "severe and classic taste," which may be good enough, *per se*, but are sadly out of place. Many beautiful side chapels, rich in elaborate tracery, are spoiled and disfigured by the erection of cumbersome classic shrines for the Virgin's throne. Fancy a Corinthian or Ionic throne in the House of Lords, with the whole of that end of the building encrusted with slabs of veined marble, "beautifully polished, and highly wrought," and the effect of the once fashionable classic improvements in many of the old French cathedrals will be fully realised. This style is now happily out of date; yet it seems to linger; for a recent French writer, in criticising the Queen's throne, in the House of Lords, states,—"Il symbolise à merveille la royauté constitutionnelle: il ressemble à une cage dorée" and that the whole chamber is "un monumentale," and resembles, in fact, "nos très-beaux magasins de thé!"

The rage for classic restorations or transformations in Gothic buildings is dead, clean gone, unless confined to Boetian churchwardens, in remote places,

where locomotives never whistle nor penny papers penetrate.

From introducing classic work into cathedrals, the fashionable taste of the day turned to improving ancient châteaux in the same style: here, however, it was of less consequence, though a really fine old weather-beaten château is worth preserving intact the taste of its time. Externally many are marked by well-defined lines of hoar antiquity: internally they are almost fresh from the "improver's" hands, in a style totally different. You pass under grim towers and turrets, through groined arches, and into rooms rich with the handicraft of fashionable upholsterers, in the taste of the present day. Old panelling gone to the brokers; old tapestry to the curiosity-shop; canopied chimneys replaced by modern stoves; millioned windows "richly light," modern slabs of plate-glass, and carved ceilings by plain stucco!

The walls covered by flock or satin paper, "beautifully panelled" with elaborate borders, block printed, and heightened up with genuine Dutch gold. Reality abolished to make room for sham.

At Windsor—royal Windsor—we have the St. George's Hall, Waterloo Gallery, and ball-room, all different in fashion, style, and taste. Our French friend, before quoted, is enraptured at this ball-room. He says: "*La salle de bal, tendue de tapisseries des Gobelin, décorée dans le style de Versailles, est la plus riche, la plus délicate qu'il soit possible d'imaginer.*" In the style of Versailles! and this of Windsor, with St. George's Chapel; its castellated walls, towers, turrets, and donjon keep!

The old feudal fortress of Alwicks is being restored, and transformed at the same time; and here comes the question in all its force.—What is the influence of fashion on taste?

This kind of restoration will become fashionable: more than one feudal stronghold will follow in the wake of Alwicks: the fitness of things will be overlooked, this hybrid fashion of questionable taste predominate, and restoration become synonymous with transformation: they will become nothing more than "*un decor, ajusté dans un théâtre Gothique.*"

Will modern decorators and upholsterers assimilate with the sturdy master masons of olden time? Can ancient Alwicks and New Belgravia accord? Would the Alhambra and Vatican be harmonious if united? Can modern "house decorators" be in unison with ancient masters in the cunning craft of castle building?

Fashion has given rise to deadly feuds between architects and upholsterers. It rages even now, as fiercely as the wars of the Roses, or the wars of the Montaus and Capulets. An architect designs a building: no sooner is he ready to lavish his skill and taste in the judicious decoration of his rooms and halls, in unison with his general design, than in walks the upholsterer, takes forcible possession, and expels the architect. The architect makes the building, and designs its proportion; but the upholsterer stalks in with his high priest,—"the house decorator,"—to finish it off, without the slightest reference to the injured feelings of the agonised architect,—whose work they are conspiring to spoil,—whose skill they fore-stall,—the proportion of whose work they destroy,—and leave to bear the blame of their blunders.

Small rooms are "decorated" with papers of prodigious pattern; large ones "beautifully panelled in the French style," and licked into shape with the paperer's paste-brush and shears. The cornice,—a grand subject with the "decorator,"—must be picked out with gold, and filled in with green; or touched with silver, and tinted with blue,—delicate cream, or sickly salmon, to say nothing of clear-colling and flattening. The walls are now ready, and completely decorated in the highest style of the latest fashion,—glowing in all the colours of the rainbow, for such discriminating patrons are so fond of "colour,"—or done and subdued to very baldness, for such as prefer to gaze in the placid beauty of "neutral" tints.

As soon as the decorator has exhausted the mighty cunning of his craft, in comes the great man of the day,—the upholsterer, to "cry havoc, and let slip the dogs of war;"—heally war! the architect, and a disguised one to the decorator,—his chosen friend and comrade. The architect is spoilt by the skill of the decorator,—and the decorator by the mistress of the upholsterer,—though I wish to say *so sotto voce!* And how is all this slaughter occasioned? Why thus? The upholsterer kills, at one fell blow, all the laborious ingenuity, all the skill and taste, of the most fastidiously fashionable decorator, by the introduction of a *paddington* carpet. The blushing glories of paper, panels, and paste-pot are eclipsed in an instant,—a thousand rainbows woven into one are condensed on that carpet,—the decorator is done,—the architect defunct,—they have perished by a *coup-de-carpet*. All

the picking out with gold and filling in with silver are eclipsed by the glowing brilliance of the strongly-favoured carpet, and its large small family of table, chair, and sofa covers, equally dazzling with the great Mogul of a carpet,—which converts a fashionably embellished room into a "chamber of horrors," where art and taste are often done to death by those who try to give them birth. Fashion in furniture varies much,—at one time brilliantly polished mahogany, at another dark and sombre rosewood, then sometimes light-toned maple. They are often selected for the fish on of the furniture, irrespective of their being in harmony with the general character or colour of the "highly-decorated" walls. Too often a huge music-box, shaped like a coffin, and called, *par excellence*, a grand piano, is foisted into a room, utterly regardless of effect. And, generally speaking, a grand piano, at best, is no beauty, either in colour, form, or execution. Whatever progress may have been made in the internal parts of pianos, externally they remain much the same as when first rising into fashionable repute. They are rarely so constructed as to be ornamental in a room decorated according to the present taste. There is much scope for improvement in the external ornamentation of pianos. They retain their old features too strongly, and are evidently designed in general by "cabinetmakers," and not by artists. Why should they not become ornaments to a room, instead of mere pieces of "furniture." They are nearly all of one prevailing type, and stick to the same form and pattern as pertinaciously as if designed by Chinese artists,—who would copy old patterns in everything.

But who would pay for an artistically-designed piano? Who cares for a combination of art and beauty in the external case of a piano? Very few, it is to be feared. They are treated as mere music-boxes on a large scale; as mere cases to cover an ingeniously-contrived combination of hammers and wires. But why should they not be so formed as to please the eye as well as the ear? Let us hope the time is not far distant when the case of a piano will be looked upon as a work of art, and so designed as to be an elegant and appropriate ornament to a tastefully-decorated apartment. Its colossal size in a modern room imperatively demands ornamentation, in harmony with the general features of the prevailing decorations: to which at present they violently contrast in every particular.

Ladies are generally allowed the privilege of selecting carpets, chintz, and furniture, and exercise a powerful influence in the choice of paper for decorating or disorning their rooms. Perhaps *milady* has been to Marlborough House, visited the "chamber of horrors," wandered through the deserted halls of Soyer's Symposium at Gore House, or even had a peep at the growing glories of the "Brompton boilers," whereby *milady's* taste has been boundlessly refreshed.

But being dazzled by the brilliance of carpets, the glories of glazed chintz, the beauties of elegantly patterned papers, and dambounded by the "horrors," *milady* is confused at her ideas, mistakes brilliancy of colour for beauty of design, and confounds simplicity with baldness. "*Milady*" fuses "about from shop to shop, makes inappropriate purchases, sends them home in triumph,—to meet with disappointment and vexation on finding what a comical combination of colours she has jumbled together; what poor effect is produced; how, after all her trouble her rooms do not look what she expected, or what they ought to be. Something is still wanted, although there is excess of everything—but taste. I vain beautiful table-covers are purchased; elegantly bound books, shining in gold and morocco, scattered on the table; the chimney-piece crowded with ornaments, reflected in splendid glasses: all these efforts fail: *milady* feels that something is wanting; but, not exactly knowing what that something is, she consoles herself by saying, 'the rooms at least are comfortable,' and so dexterously evades the difficulty.

Fashion has much to do with these matters. Some twenty years ago it was fashionable to have rooms so crammed and charged with furniture of all kinds as scarcely to permit moving in them,—species of furniture pantechnicons! The fashion changed: rooms were stripped bare,—the less the furniture the greater the fashion: even pictures were tabooed, and received the route for other rooms less used for grand occasions and state displays. Fashion ran from one extreme to another, but let taste stand stock still, or ignored it altogether, as is too often the case with fashionable patrons of "painters or decorators."

When the Duke of Brentford or Marquis of Carabas shall employ real artists to design their furniture and fittings; when the Duchess of Putney and Countess of Cripplegate shall employ able artists, cunning in the craft of designing chintz, carpets, and table-covers, really pure in taste, and veritable works of art, then will fashion operate beneficially in the spread of general taste in house decoration.

The *bas monde* will ever follow the *beau monde*.



the lower ten thousand tread in the steps of the "upper ten thousand." If once our patricians set the example of following sound rules of taste, instead of the whims and fancies of mere fashion, the parvenus will extend the practice, and spread a knowledge of it to the out-side circles: and surely if taken in a proper spirit, it is just as easy to make true taste fashionable as false taste. Example is the best precept. It ought not to be beneath the notice of a man of fashion to study the designs of his furniture and employ artists for the purpose, instead of leaving such matters to the crude skill and untutored taste of mere "cabinet-makers." In the olden time half-a-dozen artists or more, each of eminence, did not disdain to unite their abilities in the production of a piece of furniture,—and why should they now? The cheap and nasty system at present in vogue cannot be expected to elevate taste or produce works of art. The best that can be said of the productions of such a system is that their works are "good enough for the money." Many of the upper class, who are wonderfully particular in the pattern of their cravats, are utterly careless as to the designs of their furniture. They spend thousands in the erection of a house, and thousands more to spoil it, by reason of following fashion instead of taste in their attempts to decorate and furnish—a matter quite as difficult as to build the house itself.

JOSEPH LOCKWOOD.

## THE BUILDING CLASSES.

As I am convinced it is your desire to hold the scales equally between the employer and the employed, I am induced to trouble you with a few remarks respecting the present scarcity of employment, particularly among the building classes, which has now continued for a long time, and without any immediate signs of improvement. For a long time the average yearly earnings of thousands of skilled workmen have nothing like equalled the pay of a policeman, and that not through any fault of their own, but entirely occasioned by the scarcity of employment: but I contend, sir, the pay of a policeman is no criterion to go by, as a good character and the blessing of a sound constitution are sufficient to procure him employment. How different is the case of the building classes, who in many cases have served an apprenticeship, have to purchase tools, and cannot ensure anything like constant employment, leaving illness of themselves and family out of the question.

One cause that has operated much to the injury of the building classes is the vile system of contracting, and letting, and again sub-letting, until sufficient time is not allowed to execute work as it ought to be done, and scarcely with safety to the public. Before the present monopolizing system came into operation, in the erection of a mansion, a master of each trade was employed, and the work was generally done in a good and workmanlike manner, and of course occupied much longer time than in the present day: there was also the inducement that, by good conduct, the man could obtain a fair chance of becoming master, with benefit to himself and family; but as monopoly increased that chance gradually disappeared, and for the loss of this the building classes up to this day have not received an equivalent. Well might the purchasers of the late Mr. Holford's mansion, in the Regent's-park, congratulate themselves with having met with such a bargain, as it would not require half the expenditure to keep it in repair as one of the same size built by contract in the present day would. For years past, every means has been adopted both by machinery and otherwise to reduce the amount of labour in every branch of the building line. I could name a branch of my own business where work which as formerly done would have had a day's labour given to it, I have seen none in the present day in less than one-fourth of that time. Of course, it was not worthy to be placed by the side of the former, but still it is allowed to pass even in a Government building. Yet we have schools of design, in order to produce superior workmanship, that very branch that I have alluded to, and the complaint has been for a length of time—"We are excelled by foreigners." Indeed, that is not much to be surprised at, as has been most justly observed—quantity is everything, and quality but little thought of. Let the English workman but meet with encouragement and fair play, and the complaint I have alluded to will soon pass away. It is a fact, that the English workman performs more than double the work the foreigner does in an equal space of time.

If peaceable conduct under privation is any recommendation, surely the Government will adopt every means in their power to counteract the present want of employment. Prompt measures are required: the case is urgent. Emigration, and a return to the better execution of the different branches of work, appear to be the only remedy.

R. S.

Reading, with regret, the statement, in p. 139, "On the Decline of Skill in Operatives," I have a

few observations to make on this serious subject. The system of apprenticeship is very defective: most masters keep their apprentices employed in the most ordinary work: this may answer their profit very well, but they seem to forget the conditions required of them, to teach their apprentices the "art and mystery" of their various professions. I respectfully submit a remedy for this willful neglect on their part. If magistrates were empowered to insist on the masters performing their part of the contract, or agreement, or, in default, to impose a pecuniary fine, as a compensation to their injured apprentices, the result would be productive of much good. But this is not all: I have to regret how much valuable time and money are thoughtlessly wasted by the apprentice and young mechanic. Let them resist temptations, and devote their time and means to the acquirement of what will prove of ultimate benefit to them, "useful knowledge" required in their several professions and trades.

T. G.

The Duke of Wellington having headed a subscription list for the promotion of emigration for the unemployed with 1,000*l.*, and various other considerable sums having been forthwith added, the fund thus in progress of accumulation has been called the Wellington Emigration Fund, and a committee has been formed, including various influential names, such as those of Lord Stanley, Mr. Labouchere, M.P. Mr. S. Herbert, M.P. the Lord Mayor of London, Mr. T. Baring (who has contributed 500*l.*), and others, with the Duke of Wellington as chairman. The emigration, as a means of relieving the distress among the unemployed, will chiefly be directed to those colonies which may contribute most to the fund, and subscribers are allowed to specify the colony to which their subscription is to be applied. Lord Goderich, the Rev. F. D. Maurice, and others, are acting on behalf of the working classes for the selection of emigrants, who will repay the sums advanced on their behalf by instalments, after they have been fairly set a-going in the colonies.

## BRISTOL LUNATIC ASYLUM COMPETITION.

The committee, acting according to their statement, "with the advice of Mr. Salvin," have awarded the first premium of 100*l.*, to Mr. T. R. Lysaght, of Bristol; the second premium of 50*l.* to Messrs. Meilaud and Maberly, of Gloucester; and the third premium of 25*l.* to Mr. J. H. Hirst, of Bristol. The letters accompanying the designs of the other competitors were opened, and the plans were returned without even the cold and costless courtesy of thanks. We understand that there were twenty-seven competitors. According to the Bristol papers, "The cost of the erection of the approved plan is guaranteed at under 20,000*l.* We believe that the estimate is 18,000*l.* The cost of the land will be about 3,000*l.* and when the furnishing has been completed, the entire cost will probably be about 25,000*l.* The payment will be spread over twenty years." We have received two very indignant letters. One writer says,—"The Bristol committee have sent off all the drawings, and have not permitted even the selected designs to be seen, having even returned the 2nd and 3rd prize drawings to the authors of them. Coupling this with the fact that the selected men are all of Bristol and Gloucester, it looks very like a job. As a ratepayer, I protest against the whole proceeding, and hope the rejected competitors will at any rate take means to exhibit their designs. Can you not get a little light thrown upon the affair?"

A BRISTOL MAN."

## COMPETITIONS.

Moulton, near Spalding, Lincolnshire.—Most of your readers have, doubtless, seen an advertisement in the *Builder* of the 7th inst. from the "Governors" of a certain school near Spalding, for plans, &c. for (No. 1) a new "school and class-room for 150 boys; (No. 2), school and class-room for 60 boys; (No. 3) alteration of present school-house for head-master and 12 boarders; and (No. 4) a house of six or seven rooms for the under-master." The whole cost not to exceed £1,200. So far, so good,—but few of your readers will find fault with the terms up to the present period. But the next sentence is a *stunner*. Two pounds! for the best plan! and one pound!!! for the next best!!!! Such is the burden of the next sentence, and a burden that ought to break the camel's back. The profession have long had indignities showered down upon them by Competition Committees—have groined under the burden; but this rare insult, one would fancy, would be the one either to break down the sufferer, or to make him discard the load with one gigantic superhuman effort. We see clearly to what competition has led: in your pages of some weeks back we saw some instances which have strengthened the hands of the oppressors—acts

emanating from professional men themselves—but never before have we witnessed such a humiliating instance of the low standard awarded to the profession by *educated laymen* (laymen as far as the profession is concerned) and GENTLEMEN. It is matter for serious reflection—it is food for deep thought, and a warning cry to us to unite, as we should do, to stop the raging of this giant disease. I need not occupy your space further. As a member of the Institute, I look to that body this time to take the initiative: the provincial architectural societies will render it all the support possible, and the London Architectural Association will be cordial co-operators in the work. The time has arrived for something to be done. I, as an individual member, feel *lowered* in the eyes of the public from such occurrences, and soon shall find but little pleasure even in the name of architecture. It is of no use saying this is a solitary instance, or one only of a few: from my intimate knowledge of scores of committees in the Midland Counties, I know to the contrary, and architects themselves seem to foster the impression scattered abroad. I write, perhaps, despondingly, but no one will be more ready to be up and stirring, or work more cheerfully in counteracting the doings of these committees than your ardent, hard-working

A. R. I. B. A.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the ordinary meeting, held on the 23rd ult. Mr. Ashpitel in the chair, a paper by Mr. J. W. Papworth was read, entitled, "On Beauty in Architecture and its Alliance with the Past."

A discussion followed, in which Mr. M. D. Wyatt, Mr. Jennings, Mr. C. C. Nelson, and the chairman took part.

Mr. Fraser, contributing visitor, called the attention of the meeting to an article in the newspapers, from which it appeared that a suspension-bridge was to be erected across the ornamental water in St. James's-park. This he considered would be a very great eyesore. Where there were high tides or violent currents suspension-bridges were most useful (as in the cases of the Britannia and Conway bridges); and in France such bridges were properly employed from motives of economy; but over a quiet lake, as that in St. James's-park, always at the same level, a suspension-bridge was totally out of place, and would by no means add to the beauty of the scene.

Mr. M. D. Wyatt said, that as his name would probably be hereafter associated, to some slight extent, with the bridge referred to, he begged to say publicly that he agreed with the general principle laid down by Mr. Fraser, and considered that a low bridge on arches, recalling the Palladian bridge at Wilton, would have been a more classic and picturesque object in St. James's-park than any suspension-bridge could possibly be made. When he was applied to by the late Mr. Rendel the matter was a *fait accompli*. Mr. Rendel's engineering arrangements were nearly completed, and it was in respect to the precise forms of all the ironwork that could be made in any wise subservient to the laws of beauty, that his assistance had been invited.

Previously to the reading of Mr. Papworth's paper, Mr. C. F. Hayward, associate, called attention to the dilapidated state of Sir C. Wren's model of St. Paul's Cathedral, with a view to memorialising the authorities to effect a restoration, and to place it in a more advantageous position. Mr. M. D. Wyatt, and Mr. Parrie, visitor, explained that the subject had not escaped the attention and care of the surveyor to the fabric.

Mr. Twining, contributing visitor, then exhibited some sketches of churches in Bavaria. The towers, he stated, were generally surmounted by small cupolas, modelled after that of the cathedral of Munich, but modified in various ways, and it appeared to him that these cupolas, though by no means beautiful in themselves, harmonised with the rocky outlines of the Bavarian Alps much better than the spires of the Tyrolean churches assimilated with that mountainous region.

At the meeting held on the 9th inst. Professor Donaldson in the chair, M. Labarte sent his "Recherches sur la Peinture en Email dans l'Antiquité et au Moyen Age," M. Didron, *siné*, his "Manuel d'Iconographie Chrétienne, Grecque, et Latine," and Mon. M. H. Durand, "Le Moniteur des Architectes, Journal Indicateur Général et Spécial, à l'usage des Architectes, Entrepreneurs, et Constructeurs."

Mr. Ashpitel read a paper "On the different Theories respecting the Forum at Rome, particularly those of the Commendatore Canina."

One of twenty pendants, carved by Mr. W. G. Rogers, for the new Palace of the Sultan, Constantinople, was hung on the wall.\*

\* At the next meeting, to be held on the 23rd, a paper will be read, "On Furniture, its History and Manufacture," by Mr. J. G. Grace, contributing visitor.



## CHURCH-BUILDING NEWS.

**Frampton Cotterell.**—The ancient parish church of Frampton Cotterell is about to be taken down, rebuilt, and enlarged, at the cost of one of the joint patrons of the rectory.

**Maestefeld.**—A rich stained glass window has recently been put up in Christ Church, from the designs of Mr. A. Bell, and executed by Messrs. Pilkington, of St. Helen's.

**Little Vinborough.**—The church here has been lately re-opened, after having been restored. The west end, which previous to the restoration was of lath and plaster, has been pulled down and rebuilt with a bell-turret and angle buttresses of rubble flint-work, and Bath stone dressings. The interior has been entirely reslated, with open benches, and a new screen, pulpit, and reading-desk have been erected, all of English oak. The floor has been relaid, with Minton's red, black, and buff tiles. The roof has been covered with old plain tiles, in lieu of the thatch previously existing, and a barge-board and cross of oak have been added at the east end. The whole cost of the various works, including architect's commission, has been 280*l*. About 40*l*. are still wanted: this, however, it is expected will be given by the authorities of King's College, Cambridge, the patrons of the living, who it is also expected will put the church in a state to accord with the rest of the church. The works have been executed by Mr. Betts, of Stowmarket, builder. The architect was Mr. Edwin G. Pennington, of London.

**Mosley (Birmingham).**—On Mosley-common, and occupying a situation on the south side of Birmingham, very similar to that which Great College occupies on the north, stands Spring Hill College, an institution for training ministers in connection with the Independent A.S. The old building being very inconvenient for collegiate purposes, a fund for the erection of a new one was started in 1840, and at the close of 1856 this fund amounted to 12,985*l*. Twenty-two acres of land on Mosley-common form the site for the new college. The building was begun early in 1854, and a formal opening will take place in June next, but the professors and students have already taken possession. The style of the building is of the Decorated period: three sides of a quadrangle are occupied by it, and in the centre of the south front is a battlemented tower, 78 feet in height, flanked by a bell turret, carried 14 feet higher. In this tower is the principal entrance to the building. Above the main entrance rise in succession three large bay windows, for the light in respectively of council-room, museum, and laboratory. To the west of the tower is the library. It is lighted by four large moulded windows of stained glass. Over the tracery of these is a pierced parapet, surmounted by four carved pinnacles. Immediately beyond the library, and forming the west angle, is the warden's house, flanked by an octagon turret, on the summit of which is a water-tank for the use of the establishment. To the east of the tower is the dining-hall, with lecture-rooms over it, and beyond these the warden's residence. The wings are two-storied, and have transomed windows. At the end of each wing is a turret, intended to carry a bell. The entrance-hall is paved with encaustic tiles. A corridor window immediately fronting the entrance-hall is to be filled with stained glass. Along the north side of the principal building runs a corridor, with pointed arches. The wings are appropriated to the students, the studies being on the first-floor, and the dormitories overhead. There is at present accommodation for thirty-six students, but this can be doubled. Mr. Joseph James, of London, is the architect; Mr. G. Myers, of London, the contractor; and Mr. H. Beson clerk of the works.

**Bangor.**—A Wesleyan church is being constructed in Bangor upon a large scale, in the Elizabethan style. It is to be ornamented with what a contemporary calls "a spiral steeple" placed at its centre. The altar is to be elevated with three steps to approach it, and to have in it, or attached to it, a baptismal font.

**Liverpool.**—The Wesleyans here propose to erect three or four new chapels, on a large scale, with schools attached, in neighbourhoods at present wanting such accommodation. About 15,000*l*. have already been subscribed, but 20,000*l*. is the sum wanted. It is proposed to erect one chapel in Grove-street; another in Prince's-park; to enlarge the one in Stanhope-street; and to refit and decorate the one in Pitt-street, increasing its capacity, and improving its appearance. The building committee are commencing forthwith to realise their objects.

**Blackburn.**—Mr. R. Hopwood, of Rockcliffe House, Blackburn, and his sister, Miss Hopwood, says the *Preston Guardian* have undertaken the erection of a church and schools in Nova Scotia, at their own expense. Church accommodation has long been required in the locality in question. A large number of plans were submitted for inspection, and those of Messrs. Taylor and Eggert, of Blackburn, were adopted as the most suitable. There will be no gallery

in the church, which will contain benches for 700 people. The schools will afford accommodation to 1,000 children. The entire cost is estimated at 6,000*l*.

**Elgin.**—Contracts have been entered into for the Moss-street United Presbyterian Church. The successful candidates, according to the local *Courant*, were:—Builder, Messrs. John Lamb, 1, 12*l*.; carpenter, Alex. Forsyth, 731*l*.; slater, J. Findlay, 91*l*.; plasterer, Joseph Stuart, 74*l*. 19*l*.; plumber, John Gordon, 45*l*.—in all, 2,065*l*. 19*l*. exclusive of the cost of clock and bell. The church, which is in the florid Gothic style, from a design by the Messrs. Reid, of Elgin, architects, is about 60 feet long by 42 feet wide, within walls, and the side walls are to be 26 feet high. The tower, which is on the east end fronting Moss-street, is to be 90 feet high, with corner turrets and crockets, &c.

## STRAW-THATCHING UNDER THE BUILDING ACT.

The Crystal Palace Company erected a building within 5 feet of the public way, without giving notice to the district surveyor of Fenge (Mr. Nash), in area, 61 feet by 32 feet, and intended to be used as a store-house for rough ice. Its roof was covered with straw-thatching, and its door-frames were placed flush with the external faces of the walls. Upon discovery by the district surveyor, he gave legal notice to the Clerk of the Works of irregularity in the said items of roof and door-frames, requiring that the roof should be covered with incombustible material, and the door-frames set back an inch and a half, being a warehouse building. Upon non-compliance with the notice, information of such non-compliance was laid before the magistrates at Crofton, on the 13th of March, and a summons issued for the attendance of the case was then heard. The decision was, that as straw-thatching was the best covering for an ice-house, and as double doors were required in the walls, the building was to remain without alteration.

The decision is manifestly an illegal one; inasmuch as the Building Act does not place any power in the justices to deal with the rules of construction contained in the Act, their duties being merely administrative. Moreover, the building, though an ice-house now, may be something else another day.

## TUNSTALL NEW COVERED MARKET.

I MIGHT have treated the charge brought against me by Mr. James Haywood, jun. of Derby, and published in your number of the 28th ult. with contempt, but as a very brief space in your columns will show the absurdity of the attack, and at the same time be useful in cautioning builders in such matters, I have to state that Mr. James Haywood, jun. sent in a tender to Mr. Batty, builder, of Tunstall, to complete the ironwork for 1,750*l*. subject to a discount of 11 per cent.; also a tender to the Local Board, as he himself states, "to supply and fix" the ironwork required in the erection for the same amount (1,750*l*.); and another tender to myself also for 1,750*l*. "delivered and fixed," with this important difference, that "no amount is included for scaffolding," nor was any discount mentioned. The internal area of the market is 22,000 superficial feet, and a considerable quantity of scaffolding must necessarily be required in fixing a roof of such extent, which Mr. James Haywood, jun. not only expected me to furnish him gratuitously, but also to pay him the precise amount for the ironwork which I am to receive for it.

I did not keep copies of my letters to Mr. Haywood at the outset of the negotiation, but I transmit to you the whole of the correspondence in my possession, from which you will be enabled to judge whether the attack does not recoil on his own head, as I deem it "most unfair conduct," when he was in treaty with another builder and myself (and probably others also) to submit any tender whatever to the Local Board, and especially so, as that tender was at a less price than his offer to me.

With the correspondence in my possession, I now detailed estimate for the ironwork; a letter from Mr. Robinson, the architect; and one from the east-town founders, received at the eleventh hour, which I used me to reduce my estimate.

[With this, the correspondence must terminate, so far as we are concerned].

## TESTIMONIALS TO CLERKS OF WORKS.

I SHOULD be sorry for the remarks that appeared in your number for March 7th (p. 134, &c.) in "One who speaks from experience," to pass without notice, and shall be glad if I have been anticipated by some one more able than myself in protesting against his sweeping assertion, that the majority of clerks of works are such worthless individuals as he describes.

I am not ashamed to say that I have worked manually, and did not leave it from being too lazy so to do, but being desirous to better my position (and who is there, I would ask, who ought not to aspire to go forward by all honourable means?) by dint of study and perseverance I have succeeded to some extent.

"One who speaks from experience" reasons illogically in speaking of testimonials. Surely every practical architect would form a tolerably correct estimate of any man's character and abilities before he would give him a written certificate. The writer seems to think that a certificate as to character is obtained as some "tickets of leave" are granted, for a little assumed good conduct.

I am proud to say that I have had written testimonials,—ay, and handed to me too,—from gentlemen under whom I have acted for several years past, and I think each successive expression of opinion adds weight to that which preceded it.

It should be some consolation to us poor clerks of works to find that the writer finds his innuendos at gentlemen of his own profession for their lack of discrimination, &c.; although I think he fails to make out his case, as very few architects would fail to discover the shortcomings, or roguery, or whatever else he may term it, of a clerk of works, until his delinquency was made apparent in a court of law.

I will pass over my "regret that a superior class of men do not qualify themselves," and, in conclusion, will boldly assert that the position of a clerk of works in carrying out his duties is attended with difficulties enough, without being publicly assailed as "One who speaks from experience" has thought fit to do.

A LOVER OF FAIR PLAY.

Another correspondent writes:—

"One who speaks from experience," says that two-thirds of the clerks of works consist of men who are too lazy to work at their trade; they prefer (naturally enough), superior pay, position, freedom of action, and builders' gratuities. As regards their being too lazy to work at their own trades, I know, but the nothing, but the nothing, I should think that jobs where clerks of works get three guineas per week are like 'angels' visits.' How many are they who do not get thirty shillings per week? but then there is the position, which of course is very cutting, that is, being placed between the architect and the proprietor, so that if anything is wrong, he may get all the blame, and, as before stated, screen the architect. I should think that jobs where clerks of works must be honest, let architects give them a salary to sustain that position, and keep themselves respectable, and above suspicion. "ONE WHO SPEAKS CANDIDLY."

## BUILDERS' BILLS.

WOOD E. KING.

THIS case, tried in the Greenwich County Court on the 11th inst. before Mr. J. Pitt Taylor, appeared to cause some excitement. It had been previously heard and twice adjourned.

The plaintiff was a builder on Blackheath-hill, and claimed the balance of account, 7*l*. 12*s*. 6*d*. from the defendant, an artist of the same place, for work and interior fittings to his shop-window. From the original estimate given by plaintiff to defendant, alterations had been made, at the request of the defendant, which increased the account above the contract, and which formed the subject of action. At the last hearing the plaintiff called, as a witness, Mr. Banks, surveyor of Lewisham, to prove the value of the work done; but as the defendant, under advice, would not admit Mr. Banks to measure the work, he could only make his calculation from a drawing that he had been given by plaintiff, and upon that he made the value of the work to exceed that charged by plaintiff. On the other hand, Mr. Badger had measured the work on the premises for the defendant, and contended that 4*l*. 16*s*. was a sufficient charge for the work in question, instead of that charged by the plaintiff, whose bill was 8*l*. 10*s*. 4*d*.

At the adjourned meeting, Mr. Banks said he had now measured the enclosures of the windows in question, and found them to contain 140 superficial feet, upon the making of which no man could get a living at 9*d*. a foot, which had been asserted by Mr. Badger to be a sufficient charge. He (Mr. Banks) had upon the drawing only on the last occasion, made a calculation of 1*s*. per foot, but now he had been inspecting the work and dissecting it, he had made his present estimate instead of the plaintiff's charge of 8*l*. 10*s*. 4*d*. to come to the amount of 10*l*. 18*s*. 1*d*. in examination, the witness said that the framing (which Mr. Badger contended was made from 1*l* in deal) was manufactured from 1*l* in deal.

On measuring one of the panels, the Judge found that in its present state it measured 1 in. 4*d*. and 1-16th of an inch in the frame.

The Judge pointed out that the defendant's surveyor had asserted that he had divided and measured the panels separately—the framework at one price and the panels at another, and then took an average, and called it framing, by which means he had arrived at his charge of 8*l*. a foot, whereas Mr. Banks contended that it was 1*l* 13*d* moulded framing, worth 1*s*. 2*d*. a foot.

Evidence having been given on both sides, the Judge, in summing up, said he could not see how the work brought before him could be made out of 1*l* 13*d* stuff, unless it had been very thick; and he believed it to have been made from 1*l* 13*d*, which probably might have been thin of the last. He should take Mr. Badger's measurement and Mr. Banks's price, and give a verdict for the plaintiff for the full amount, with costs of seven witnesses and attorney.

## PORTLAND CEMENT FRONTS.

YOUR correspondent "Rustic" has opened up a subject of great importance to architects, builders, and the public. That many of the Portland cements now in use dry off in colours as numerous as the tints of the rainbow, experience is continually proving, and it has become an evil of such magnitude that, unless some method be adopted to check it, a highly valuable material will be dissipated for the purpose of facing buildings. The course I would suggest to prevent future failures (I fear "Rustic" has no satisfactory remedy) is to ask the favour of your publishing in the *Builder* the names of those manufacturers whose Portland cement can be relied on for facing purposes, and I have no doubt there are many gentlemen who would be glad to give this information, and whose names would be a guarantee for truthfulness. I am aware I shall be told that the cement is not to blame, but the mode of mixing,—the sand,—that different makers' cements have been used on the same works, and so forth; but, as far as my



own experience goes, I deny all this, and believe that the fault is in the manufacture of the cement. If you would lend your powerful aid in this case, you would, I think, have the thanks of many others besides your subscriber.—W.

\* We cannot undertake to carry out the request: but we insert the letter, as a suggestion to manufacturers who prepare a really good cement, that they may use their own means to make the fact known.

In answer to the article in the *Builder*, p. 156, respecting the defective colour of the Portland cement front referred to, I would recommend colouring the front twice with Portland cement colouring. Calculate the quantity, and mix the cement well: dry first, as I have found, when opening casks of Portland, the cement of different shades. I am sure, if the above be attended to, it will answer the purpose, and not dry in different shades: it will also form an additional hard casing. I also beg to recommend to any that may stucco the front of a building with Portland cement:—First calculate the quantity of cement required, and then mix the whole of the cement dry, in a large trough formed of boards temporarily for that purpose, and under cover; then mix the quantity of washed sand required, and of one colour: mix the whole up, sand and cement, well together: the plasterer can then take any quantity to mix with water as he may require.—A CLERK OF WORKS.

### Books Received.

*Examples of Ancient Domestic Architecture.* By FRANCIS T. DOLLMAN, Architect. Part II. London: 6, Albert-street, Regent's-park: Bell and Daldy.

This present number of Mr. Dollman's work is devoted to the Hospital of St. Cross, near Winchester, and contains ten plates, carefully drawn and engraved, including, with plans, the gatehouse, the refectory, the dwellings, the ambulatory, &c. The examples are of a practically useful character.

*Landed Property: its Sale, Purchase, Improvement, and general Management.* By FRANCIS CROSS, Architect. London: Simpkin and Marshall. 1857.

Mr. Cross's book, to which we have already briefly alluded, is addressed rather to those who already briefly allude to own, land than to the profession. His main object is to aid the farmer in arriving at a notion of the value of land, and the points to be attended to in making purchases. The management and improvement of a landed estate are treated of, and incidentally points on which legislation is required are discussed. In the endeavour to make the treatise "light" for the general reader, Mr. Cross adopts a style which, in some minds, serves to throw a doubt on the soundness of the information so conveyed. We must have a little fault with him, too, for going out of his way to discourage the preservation of our national antiquities,—those footmarks of past times which afford food for thought, enlarge the mind, and nourish the heart.

"Antiquaries," he says, "are alarmed at the manner in which agriculturists of the present day disregard all historical associations in carrying on their work of improvement, trying within the sound of 'Bow bells,' we are so 'sentimental' enough to puzzle ourselves with debatable matter like the Cromlech, or altar stone, and the ogan, or rocking stone. To speak the truth, the growing luxuriant crop of wheat where once stood the Druidical temple is eminently characteristic of the genius and progress of the nineteenth century. Our sympathy does not, therefore, extend to a writer in a newspaper (March 1856), who deeply regrets to learn that the Druids' temple on the estate of Moyness, in the parish of Alden, within a gunshot of the ruins of the old castle of Moyness, has been recently interfered with, and in a short time, if the lord of the manor, the Earl of Cawdor, do not put his veto to the contemplated 'improvements,' all trace of this,—the most complete of the ancient Druidical monuments in the province of Moray,—will be obliterated."

The removal of a Druidical temple, and the growth of its place of a crop of wheat, may be "characteristic of the genius and progress of the nineteenth century," it is not well to remember that man shall not live by bread alone!

The book will, nevertheless, be found very useful to those for whom it is intended. The measures he suggests for the advantage of agriculture are thus summed up:—

1. The freely granting of leases with liberal covenants.
  2. The improvement of the moral and physical condition of the labourer.
  3. A cheap and easy transfer of land.
  4. The abolition of burdens that press heavily on the rights of industry,—such as the claims and rights of the lords and their stewards.
  5. The remaining acres to which we look for success, improve.
  6. Facilities and encouragement for land drainage.
  7. The material good likely to result from scientific discoveries and mechanical inventions.
  8. The collection of statistics, and the diffusion of sound practical views, on all that relates to agriculture.
- The means of a cheap and easy transfer of land are

much to be desired, and the author rightly urges such legislation as might effect this. Land is increasing in worth. Estates now ranging in value from twenty-five to thirty years' purchase, will eventually realize, our author suggests, from thirty-five to forty years' purchase, and seeing that, do what we will, we cannot add an acre to England while the supply of gold is daily becoming greater, we should not hesitate to endorse his opinion.

### Miscellanea.

**FURTHER IMPROVEMENTS BY MR. BESSEMER IN THE IRON MANUFACTURE.**—Mr. H. Bessemer has just filed specifications of two patents for further improvements, which are thus described in the *Mechanics Magazine*. "By the process of puddling," says Mr. Bessemer, "the iron is found to be more or less injured by the gaseous matters thus brought in contact with it, while the consumption of coal adds greatly to the cost of the process. The object of the first of his new inventions is to render malleable either the crude molten iron obtained from the smelting furnace, or remelted pig or refined iron, in part by the process of puddling (or by a process producing a similar effect), and in part by forcing into and among the particles of such fluid iron, jets of air, or of some other gaseous matter containing sufficient oxygen to raise the temperature of the metal, so far as to admit of the puddling or other analogous process being carried on without the use of any fuel, or any other heat than is obtained by the introduction of oxygen or hydrogen into the metal. The second of his new inventions consists in obtaining crude or grey pig iron, hard white iron, or steel, and malleable iron, direct from carbonaceous iron ores, or from any mixtures of carbonaceous ores with oxides or other ores of iron, by the application thereto of a blast of hot or cold air, or steam, or of any other gaseous matter containing oxygen or hydrogen, and without requiring any fuel except such as is evolved from the said ores of iron, and from the gaseous matters forced in."

**THE HORTICULTURAL SOCIETY, CHISWICK AND REGENT STREET.**—Some important changes have been introduced amongst the Society's regulations, and it is confidently believed that these will be of great public benefit. Amongst them are a plan of admitting all kinds of manufactured articles connected with Horticulture, and arrangements for an autumnal Fruit Exhibition. The new council have resolved, with a view to promoting good gardening, and rendering the Society more stable, to establish a new class of two-guinea members, and abolish admission fees, all new subscriptions being in future payable in advance; and to place the Chiswick Garden under one general superintendent, whose standing in the horticultural world will secure general confidence. Such a person has at length been found in Mr. George McEwen, formerly gardener to the late Duke of Norfolk, at Arundel. With this accession, and the aid of funds voluntarily provided by a large number of Fellows, the council believe that the Garden at Chiswick will become a great seat of instruction and education, as well as of experimental Horticulture.

**IMPROVEMENT OF OPERATIVES.**—I hope your remarks of last week respecting the closing of Gore House will have the desired effect, and that another school at the same rate of charges may be established at or near Kensington, to enable mechanics, their sons, and others, to learn something of drawing, but who are shut out from Cromwell-lane School by higher charges and a greater distance. But why educate and teach to draw, seeing that at the present day men are not paid according to merit, but equal wages are paid to the bad as well as the good, and in many instances the indifferent workman is employed in preference to the good? I readily admit the utility of drawing; and if we call back the remarks lately made on the decline in skill of building operatives, we shall there see the use of it in a greater degree if we could follow it; but until men are invited to a more recreative and instructive enjoyment than a public-house, so long must we expect to follow in the same path we now tread. Unless we receive the benefits of our own trade, we shall never arrive at that proficiency that our "Well Wisher" complains of; but if architects were to exercise their rights, and take each trade separately, we might still hope to add something to our reputation.—ONE GOOD IN TRADE.

**THE BUILDING TRADE IN THE NORTH.**—Everywhere, says John O'Grady's *Journal*, there is likely to be a short supply of mason labour this season, and good hands will be at a premium. In Wick and Pulteneytown the erection of several dwelling-houses intended to be built, will have to be postponed; and in Inverness, our correspondent says, a similar state of matters prevails, owing to the large number of masons required at the erection of bridges on the Inverness and Aberdeen Junction Railway, where they are in receipt of high wages.

**MANCHESTER SCHOOL OF ART.**—The annual meeting of this school was held on Monday in last week, at the Manchester Royal Institution. Mr. Potter, the president, occupied the chair. He regretted the small attendance. At the last meeting, he said, he made some remarks of a rather doleful character: then they were 400% in debt; but the debt had now been reduced one half, and things looked, on many accounts, more cheering. The improvement had been upon the best possible basis; for their fees were increased, in consequence of the much larger attendance of students. He believed that there was no similar institution that stood firmer; but there was one clog—the school was desperately heavily rented. Sheffield had built what he understood to be a very handsome building for itself; and most of the other schools were rent free, or nearly so. Considering the Art Treasures Exhibition, if something was not done this year to put the school upon a higher footing, the chance might almost be considered as gone for ever. During the twenty years' existence of the school, they had certainly improved as to the system of teaching; but, generally, they had not taken the rise they ought to have done. This year he thought that a move should really be made to attach the school to the Royal Institution.

**INSTITUTION OF CIVIL ENGINEERS.**—At a meeting on the 10th inst. Mr. R. Stephenson, M.P., President, in the chair, with reference to the discussion at the previous meeting "On the Results of the Use of Clay Retorts for Gas-making," it was remarked, that the merits of iron retorts had scarcely been fairly stated, as, in some instances, quite as much gas has been made by the latter as by the former, unless in cases of peculiar qualities of coal being used, and that the iron retorts had been in constant work for two years and a half. It was stated, that the course the discussion had taken might lead to fallacious conclusions, for although clay retorts, when well set and carefully managed, might endure twice or three as long as iron retorts, and the materials of these retorts and also of their settings were cheaper than those of iron retorts, yet on the other side of the account must be placed several important items of charge, which under certain circumstances would turn the balance in favour of iron retorts; in certain other circumstances render it matter of indifference which description of retort was used; and in a third state of circumstances prove that clay retorts ought to be preferred. The Paper read was "On High Speed Steam Navigation; and on the Relative Efficiency of the Screw Propeller and Paddle Wheels," by Mr. Robert Armstrong. The first part of the Paper was devoted to the consideration of the circumstances which appeared to limit the maintenance of higher speeds than were now attained by steam ships, in deep sea navigation, and the causes which had hitherto prevented the asserted high speeds of steam navigation on the American rivers from being attained in England. In the second part of the Paper the relative efficiency of the Screw Propeller and Paddle Wheels, when applied to vessels of identical form, tonnage, and steam power, independent of the use of sails, was considered.

**THE BROMPTON SCHOOL OF ART AND ITS PROFESSORS.**—On looking over the article on the Letter Box, in your paper of the 21st ult., I felt curious to know the amount of salary of the Department's staff of professors. On consulting the blue-books of the Department, I find that two of these professors, whose works have often been before the public, and who are rightly appreciated for their practical, as well as their artistic knowledge, receive a salary about equal to that of a common mechanic. How can we expect art to progress when the professors are so ill-paid? Surely, out of the grant which is received from parliament, enough might be spared to bring them under the law of the income tax, and put them on a level with their office-clerks; for surely, the position of an Art Professor is equal to that of a clerk. If England wish to approximate to the standard of excellence of the continental nations, she should see that all classes of her professors receive a proper remuneration.—AN ART STUDENT.

**BLIND TENDERS.**—I can but think if you would have the kindness to insert the under-mentioned, it would show that many who call themselves builders, have much to learn ere they are entitled to the appellation. Tenders for repairs and restorations to S.S. Peter and Paul, Ospringe, Kent. —

Newman, Lewisham .....	£1543	0	0
Redman, Faversham .....	1296	17	0
Rutter and Ket, Cambridge .....	1232	18	6
Kennet and Spicer .....	1213	0	0
Sutton and Walter, Maidstone .....	1201	0	0
Messrs. Botley .....	1190	0	0
Sarabole, Faversham .....	1140	0	0
Page and Sarabole, Faversham .....	1120	16	6
Trollope and Sons, London .....	1090	9	1
Dry and Whiting, Ospringe .....	852	14	6

AN OLD SUBSCRIBER.



**NATIONAL GALLERY OF IRELAND.**—There seems to be a fair prospect of the establishment of this institution. The board has directed its attention to two objects—the erection of a suitable building on Leinster Lawn, for which a fund of 11,000*l.* has already been provided, and the creation of a fund to purchase works of art to exhibit permanently in the building when finished. The plans and estimates are in the hands of the building committee, with a view of entering into the necessary contracts, so that the ceremonial of laying the first stone will shortly take place. The building will correspond externally with the Museum of the Royal Dublin Society, now in course of erection on the south side of the Lawn, and form a corresponding wing to the main building on the opposite side. The "Picture Fund" is also progressing.

**STATUE OF MOORE, THE POET.**—The bronze statue, by Moore, the sculptor, of Thomas Moore, the poet, has arrived safely in Dublin. Early steps will be taken to have it placed in its designed locality, opposite the entrance of the House of Lords in College-street.

**CAMBRIDGE ARCHITECTURAL SOCIETY.**—At the second meeting of this society for the present term, held on Thursday, March 5th, the Rev. H. M. Ingram in the chair, Mr. W. T. J. Drake, Trinity, read a paper on the Churches of Coventry, especially noticing the Cathedral, which could once boast of three spires, but was destroyed in 1440 A.D.: the bases of some of its pillars have lately been discovered in digging the foundations of a school. Mr. Drake also gave an account of the Churches of the Holy Trinity and St. Michael, the latter of which has been lately restored.

**DESTRUCTION OF THE PORCELAIN TOWER OF NANKIN.**—The *China Herald* relates that the far-famed porcelain tower at Nankin was destroyed in November, during a bloody massacre of some 5,000 to 6,000 imperial troops by the insurgents, who had gained possession of the city by treason.

**THE CHORLEY SEWERAGE.**—A report on the completion of the sewerage of Chorley has been printed, in which the engineer, Mr. Rawlinson, states the amount of work done, together with the cost. Of brick sewers there were 5,860*l.* yards, costing 5,060*l.* odds; of earthenware pipe sewers, 7,844*l.* yards, costing 2,454*l.* odds; of gullies, 283, costing 696*l.* odds; and of manholes, 79, costing 778*l.* odds. The total cost, including 151*l.* to consulting engineer for plan and report, and 458*l.* for commission; 372*l.* odds to resident engineer, inspector, and store-keeper, and other items, was 10,759*l.*

**ALTERATIONS AND ENLARGEMENT OF CROYDON PARISH CHURCH.**—At a meeting of rate-payers held last week, at Croydon, it was resolved to consent to the projected interior improvement of the parish church by voluntary subscription, on plans prepared by Mr. Scott at the request of the promoters of the movement.

**THE STOPPAGES IN FLEET-STREET.**—A correspondent suggests, in reference to the frequent stoppage of traffic in Fleet-street and Edgware-street on account of the crossing from Farringdon-street to Bridge-street, that this difficulty might be entirely done away with, by forming a new and level line of street (by a light bridge over Farringdon-street) to commence at St. Paul's and finish at the east end of Long-acre, forming a direct line from Piccadilly through Leicester Square, doing away with a very dirty locality, and being of the greatest service to the public, and a great ornament to the metropolis.

**ACCOMMODATION FOR THE VAGRANT OR HOMELESS POOR.**—Mr. J. W. Butterworth, of Fleet-street, a West London Union Guardian, proposes, that each metropolitan Union or Poor Board should contribute to a common fund, to be applied to the erection and maintenance of a proper number of conveniently situated and uniformly conducted casual wards throughout the metropolis. This, he thinks, if carried out, "would at once remove the motive, and therefore put an end to the system at present pursued by different boards, of rendering their casual wards unattractive and inaccessible to the wandering and peculiar class of paupers for whom they are maintained, in order to shift on other shoulders the burden of the rate for their support."

**SMOKE NUISANCE AND THE HOUSES OF PARLIAMENT.**—We owe you thanks for calling attention to the frightful quantity of smoke emitted contrary to law, by the very palace of the law itself. No factory in London, no half-dozen factories to other, create so much mischief in this respect as the Houses of Parliament. The building itself is becoming dingy, and all its more delicate features hidden, by the effect of its own smoke, and the atmosphere of the whole neighbourhood is defiled by it. Pray do not let the matter rest until an effectual remedy is provided. Please draw attention also to the smoke nuisance of the Reform and Carlton Clubs; and that of St. Martin's Baths, immediately behind the National Gallery.

W. B.

**PANELS.**—We have received from Mr. Mappin, of Birmingham, a sample of a new panel, patented by him, for resisting burglarious attempts. It consists of a composition, enclosing a thin plate of steel, not making a full size panel, he says the steel would not be in one piece the size of the panel, but as a series of strips, 1½ inch broad, inserted at intervals, leaving the space of three-quarters of an inch between each. The patentee considers that it affords a perfect resistance to sharp instruments used by burglars; that panels made of this material will never shrink or twist; and that it is well adapted for curved panels.

**OXFORD ARCHITECTURAL SOCIETY.**—On the 4th inst. a paper was read by Mr. Forbes, the subject being, "English Architecture viewed in connection with English History." "It is next to impossible," said the reader, "to visit the cathedrals and ancient churches in this country and not suffer our mind to recur to persons and events connected with them; and even many of our towns and villages are exceedingly interesting from their associations. All history is important, as it is the narration of God's dealings with mankind; and to Englishmen the history of their own country and of their own ancestors must necessarily be most interesting as most nearly concerning themselves. The old English towns, cathedrals, castles, abbeys, and churches are full of reminiscences of the past—most deeply interesting; and it is impossible to visit them and to shut out from our minds the image of their past associations: kings, bishops, clergy, princes, nobles, statesmen, and warriors, will rise up before us in quick succession; indeed, there are few spots on English ground that have not some connection with past history, for which they deserve to be remembered. But all such recollections will be worse than useless to us of the present day, if we do not learn from them the lessons they are intended to teach us."

**REMOVAL OF AN IRON BUILDING.**—The *Manchester Guardian* mentions the removal, lately, of an Iron Carriage Repository, erected in this city by Messrs. E. T. Bellhouse and Co. for Messrs. W. Brown and Co. The building is 82 feet long, 22 feet wide, and 16 feet in height; the foundation is of wood, having been laid on a brick base, and connected transversely by the joisting of the floor. The pillars are of cast iron, bolted to the foundation; the sides, ends, and roof, are of corrugated iron. The main entrance is in the centre, by spacious double folding doors. There are ten plate glass windows in front. Messrs. Hay, M'Nish, and M'Kean, have not only transferred it bodily from its former site to another on the opposite side of the street, but completely slewed it "face about." In the first place the building was raised from its foundation by powerful screw-jacks, then placed on beams and rollers, and moved by powerful cranes.

**STAINED GLASS.**—Another painted window has just been placed in the old church of Alderley. It is a baptismal window of three lights, with tracery openings in the head. The subject in the centre light is St. John baptising Christ in the Jordan. In the side light to the left is represented the birth of our Saviour. In the one to the right, Christ blessing little children.—In St. Thomas's Church, Bedford, the old chancel window of plain glass has been replaced by one of kaleidoscopic aspect, representing, in colours of every shade and tone, events in the life of Christ.—There has just been placed in the German Protestant Church, Wright-street, Hulme, a rose window of eight compartments, each filled up with geometrical scrollwork, on grounds of ruby and blue alternately, each surrounded with borders.—All these windows were designed and executed by Messrs. R. B. Edmundson and Son, of Manchester.

**BRAINTELE WATERWORKS.**—These works are supplied by an artesian bore, 240 feet deep, and 10 inches in diameter. The well, from the bottom of which this bore is pierced, is 54 feet deep and 9 feet in diameter, and the water rises to within 15 feet of the surface. The pumps are four in number, three only being used, the fourth being a reserve. There are two high-pressure condensing steam engines, which will be worked alternately. The two Cornish boilers are double the power of the engines. At a distance of one-third of a mile from, and 70 feet above, the engine-house, stands the water tower, 50 feet high, supporting a wrought-iron tank, 21 feet diameter and 21 feet deep, capable of containing 45,000 gallons of water, but actually weighing upwards of 200 tons, and it is said that in case of fire, the water will rise, without the aid of a fire-engine, over any building in the town. The engine, boilers, and pumps, and also the water-tank, have been constructed by Messrs. Headly and Manning, of Cambridge.

**MEANS OF EGRESS, EXETER HALL.** In your paper of the 7th inst. I observe a short report of a meeting of the Sacred Harmonic Society, held on Tuesday evening, February 24th, at which an appeal to the directors of Exeter Hall, to provide additional means of egress, was unanimously agreed to. Now,

it appears to me that the time for appealing has long since gone by, and that means should now be taken to compel the directors to afford the necessary accommodation. I would therefore suggest, that an application should be made to the magistrates at the next licensing day, to withhold the music license until the necessary alterations were made. This would no doubt bring the directors to their senses.

E. B.

#### TENDERS

For new mansion at Slower, near Bridgewater, for the Hon. H. Labouchere, M.P. Mr. Clutton (St. James's) architect:—

White .....	£9,231 0 0
T'Anson .....	8,394 0 0
Nixon .....	8,300 0 0
Lucas .....	8,075 0 0
Holland .....	7,968 0 0
Jay .....	7,815 0 0
Myers .....	7,670 0 0

For Newport general drainage. Mr. Alfred Williams, engineer:—

George Munday, London.....	£16,787 0 0
Harwood & E. Newport.....	15,491 0 0
Richards, Griffiths, Moore, and Francis, Newport.....	15,139 0 0
James Marriott, Coventry.....	14,681 0 0
Alfred Tackett, Birmingham.....	13,920 0 0
M'Kenzie and Milingdon, Welington.....	13,800 0 0
Bewick and Wade, Carmarthen.....	12,961 0 0
J. and S. Harpur, Derby.....	12,018 0 0
J. Phillips, London (accepted).....	11,893 0 0

Engineer's estimate, £13,838.

#### TO CORRESPONDENTS.

Mr. Sydney Smith's *Lecture at the Royal Academy*.—We are forced to postpone completion of the second lecture.

**Silicic Acid.**—A correspondent wishes to know where silicic acid is to be procured. A flow made of silicic acid, or silica, in acid, or in some particular form, such as powder or gelatinous solution, must be meant; for mere common flint is silicic acid: so are pure sand and sandstone, quartz, &c. A practical chemist, such as Batten, late Dynamite of Ho-burn, would doubtless supply silicic acid in any special form or quantity required.

**Ink on Wall Paper.**—A subscriber wishes to know how to extract ink from wall paper without spoiling the colours, rather a ticklish job, we fear. He does not state whether the ink is black or blue, or what the colours are on which it is bespattered. The insertion of a new piece of the paper pattern, we suspect, would be the best way of obtaining the end in view. Oxalic acid, or essential salt of lemon, however, would bleach ordinary black ink, but much depends on the particular nature of the colours and the medium in considering what effect the acid or salt would have on the paper pattern.

**G. P. & Co. Artists** (declined with thanks).—Mr. O. A. B.—Mr. W.—An Inquirer, stone, if obtainable. W. S. D. S. N. (Board of Health, Whitehall).—J. C. S. S.—E. N. Mr. S.—R. and H.—P. W. D.—W. T. J. S.—T. E.—G. E. R. J. O.—R. S. C. F. D. T. and C. (under our limit).—T. C. (declined with thanks).—H. S.—B. B. on type. A. B.—J. T. Wells. B. P. W. (many will be found. We cannot refer).—J. P. the cost of measuring is usually taken on the tradesman.—H. L.

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editors, and not to the Publisher.

#### ADVERTISEMENTS.

**AN Engineer, Surveyor, and Valuer, who has public and other works in hand, is willing to take a well educated, industrious YOUTH, as an OUT-DOOR ARTICLED CLERK, to reside at his office, ALFRED WILLIAMS, Town-hall, Newport, Monmouthshire.**

**A SCULPTOR wishes to obtain a PUPIL, to be articled for Three or Five Years. A moderate premium required.—Apply to Messrs. SHARPE and SON, 7, Lincoln-inn-fields.**

**AN ASSISTANT WANTED, by an Architect, who is well experienced and quite competent to make drawings with full details of buildings of the first class, and requires great strength, a good practical knowledge of construction and a taste for design, will also be necessary. Salary two guineas a week. Applications, stating the nature of recent engagements and names of parties to be referred to, will only be attended to. Address, W. L. R. Recorder.**

**BRICKMAKING.—WANTED, an active WORKING FOREMAN, who thoroughly understands brickmaking in general, and has a knowledge of the manufacture of five bricks.—Apply to Mr. ALFRED MEESE, 51, Pall Mall.**

**SURVEYING CLERK, AND FINISHED DRAUGHTSMAN, WANTED, in an Estate Agent's Office, in London. Applicant, who is prepared to submit specimens of workmanship, to write, calculate, and salary required, £300 R. 0, London-cottages, Lower road, Islington.**

**WANTED, a WORKING FOREMAN, to be in charge of Wood and Stone shops. He must be a first-class draughtsman, and modeller, and thoroughly acquainted with natural foliage. References required, as character and ability will be strictly investigated. Address, with terms, W. S. P. & Co., Leicester.**

**WANTED, a CLERK of the WORKS, for a short period, who is the equally conversant with drainage works.—Address, by letter, stating salary required, paid the works been open, to A. G. HAWOOD, Esq. 3, Pall-mall, City.**

**STONE CARVERS.**  
**WANTED, the Assistance of a good, industrious STONE CARVER, to apply by letter only, stating terms, and the nature of work accustomed to, to A. W. G. FOSKETT, Esq. 1, London-cottages, Lower road, Islington.**

**WANTED, in an Architect's Office, a Junior Assistant IMPROVED, free, clean, and honest, and salary required, to Mr. CHARLES BAILY, Architect, Newark.**

**WANTED, a WORKING FOREMAN who thoroughly understands his business, as a builder in the country.—Address, stating terms, age, &c. B. S. Post-office, Alton, Hants.**



# The Builder.

VOL. XV.—No. 738.

**L**AMBETH has long been famous for its pottery, but it was never so much so as now,—thanks, above all things, to the extended use of pipes in drainage. A visit to Messrs. Doulton's, Mr. Stephen Green's, or one of the other Potteries in Lambeth, would astonish most of our readers. Such as may wend their way thither with instructed eyes, will find the neighbourhood full of interest. Of the Palace we spoke not long ago, with the restored church, the tomb of the collector Tradesant, the slab to Elias Ashmole, founder of the Ashmolean Museum, the Pedlar and his dog, in stained glass,—connected traditionally with "Pedlar's-acre," a portion of the Marsh,—and other memorials. The ferry here is of great antiquity. The pedestrian will stop near the Palace-gateway to notice the view obtained there of the Victoria Tower, and the Houses of Parliament. When the sun is shining, and the river full, the structure there looks its best. Some of the houses near the church are older than the time of Queen Elizabeth. In the little coffee-shop opposite the churchyard, there is a richly ornamented ceiling of that date, a remnant of one of the noble houses which formerly occupied this site. In times past, this house was much frequented by the Welsh, and some who are living, it is said, remember a Welsh fair being held there. The paneling is old, and part of the walls very massive: in the kitchen is a fire-place of large size. In the upper part of these premises the leading of the windows still remains: in one room the mantel-piece is ornamented with carved flowers. Returning over more towards the Thames, the visitor will find a narrow, ill-paved, and worse swept street, running westward towards Vauxhall-bridge, connected with which, on the side farthest from the river, are some miserably-neglected spots: worse will not be met with in London. The drainage is either deficient or altogether wanting. Some of the houses are of large size, and have formerly been places of importance, but the majority are small, ill-built, and dilapidated. In one narrow passage, not more than 4 feet wide, the houses are thickly occupied, the closet, with an open cess-pool, is placed between the two windows; the people have some distance to go for water, and, as we need scarcely say, sickness is often to be found. The smell when we visited it was frightful.

The inhabitants about here are, for the most part, very poor. Some appear to earn a trifle by gathering up the refuse along the river banks. It is the dinner-hour, and hundreds of boys, white as millers, are amusing themselves in various ways. Some are chasing stray pigs, animals ominous of ill-condition. The white-coated boys are employed in the potteries, which are situated amongst the houses, and extend from Lambeth-ferry to near Vauxhall-bridge. The manufacture, which is produced here in immense quantities, consists chiefly of what is called Stoneware, of various degrees of firmness, from the common drain-pipes to the finest jars for chemical purposes.

Until within the last thirty years the description of pottery known as salt-glazed stoneware was manufactured on a comparatively small

scale, and its application was very limited: it was almost confined, indeed, to spirit and oil bottles. Within that time, however, many improvements have been made; and by the employment of machinery the material has become available for numerous purposes, and the trade has enormously increased. The quantity of drain-pipes made in England is said to average forty miles a week! And of these, probably one-third is made in Lambeth. This part of the trade has grown up wholly within the last ten years. Beginning at the beginning in one of the establishments we have named, you will find several huge stacks of white clay, in square blocks, each weighing about a quarter of a hundred weight. Examination shows that the clay is of different qualities and colour: it is brought chiefly from Devonshire, Cornwall, and Dorsetshire, to be mixed or used separately, according to circumstances. For the best descriptions of ware some of the very fine earth used in making china is added. The clay from Dorset and Devon contains a large proportion of silica,—fully two-thirds of the whole bulk,—less than a third being alumina, with a small quantity of iron and lime in combination. Other clays are brought from various parts of the country, and the whole may be divided into three classes: 1st. That used for small ware, or vessels not exceeding in capacity two or three quarts. 2nd. That used for vessels of a larger capacity, say up to six or eight gallons; and, lastly, that used for the manufacture of large chemical vessels, some of which have been made by Mr. Green to hold upwards of 400 gallons.

The clay having been landed, it is allowed to remain for some time in drying-rooms, until the moisture is evaporated; and when the lumps have a dry and white appearance, and are what is technically called "white hard," the blocks are taken to a mill (worked by steam power, exactly like those used for crushing tanners' bark), by means of which the clay is reduced to a rough powder: it is then brought to the "pug-mill," containing a number of knives or flat pieces of iron, set at angles so as to form an imperfect screw. The powdered clay, with a sufficient quantity of water, is passed through this mill, and is delivered at the bottom in fine plastic form, fit for use by the potters. For small ware, the Devonshire clay needs no admixture.

The second description is a mixture of various clays with sand, the quantity of sand varying according to the size of the vessels intended to be made.

The third, or chemical ware clay, requires the greatest care, for the least fragment of grit will often render a large vessel useless. The clays used for this purpose are mixed to the extent of nearly one-fourth of the whole bulk with strong fire clays, such as those in use at Stourbridge and Newcastle, together with burnt earthenware of the most vitreous description. This mixture is carefully sifted through fine sieves; and, when the whole has been properly ground, it is raised to the different floors by machinery for the use of the potters.

The potter's wheel, a kind of lathe, having its mandril in a vertical position, is so well known, that it does not require any particular description. We must, however, notice the improvements which have been made in working it in this district during the last thirty or forty years.

Within recollection, the Lambeth potteries were mostly of small extent; horses, and even hand-power, were in use for crushing the clay; and the potters all used wheels which they turned with the foot, as in the machine of the street scissor-grinders: these were called "kickers." In the Staffordshire and some other potteries, the "kicker" had been long superseded by wheels and bands, turned by boys,

which enabled the workmen to produce better work and with greater rapidity. When Mr. Green determined to introduce the new wheel into his manufactory, the whole of the work-people struck; the master endeavoured to explain the advantages of the new plan both to them and himself, and said that although he would not discharge any man who was willing to work for him, it would be a benefit to him if they left, as it would enable him to carry out the improvements he proposed. The men, of their own will, all left except one, who was kept at work at his "kicker" until his death, a period of fifteen years, he earning 30s. a-week, while the man with the improved lathe, who sat next to him, earned 3*l.*; and so much greater was the rapidity of the potter at the new machine than the man at the "kicker," that he could produce as many stoneware ink bottles for 6*d.* at the advanced wages as the other could throw off by his machine for 1*s.* 3*d.* Since the days of the "kicker," the number of men and boys employed at this establishment alone has been increased fivefold. What is thought evil turns out good:—

"In the unresisting progress of the world  
A wisser spirit is at work for us,  
A better eye than ours."

Out of the throes and spasms of individuals come increased comforts for the many, and general progress.

In its turn the Staffordshire wheel has given place to steam. In Messrs. Doulton's establishment steam is made to turn the disk of each potter, the speed being varied (the great point to be achieved) by means of a conical drum, over which the band passes: according to the position given to the band on the drum by the potter, so, of course, is the speed.

The rapidity and certainty with which the potter works make the operation appear an easy one: under his thumb the vessel expands, the neck contracts, the lip is rounded without an apparent effort—but, in truth, as we need hardly say, it requires long practice to acquire this skill. A good potter can make upwards of 1,000 pint-and-a-half ink-bottles in a day, and other things in proportion. A small boy at Doulton's makes 1,250 jam-pots in that time.\*

Looking at the potter at work, one is struck with the force of the simile in Jeremiah,—

"Behold, as the clay is in the potter's hand, so are ye in mine hand; O house of Israel."—xviii. 6.

The allusions to the productions of the potter's wheel throughout the Holy writings are numerous. As in Isaiah,—

"But now, O Lord, thou art our father: we are the clay, and thou our potter, and we are all the work of thy hand."—lxiv. 8.

Or in the New Testament,—

"Hath not the potter power over the clay, of the same lump to make one vessel unto honour, and another unto dishonour?"—Romans ix. 21.

After the turning of such objects as are round, and the casting in moulds of others of different shape, the ware is allowed partially to dry, when it is again placed in the lathe and smoothed by shaving, and ornamented by means of various instruments: it is then left in the drying-room, until, as was the case with the blocks, all the moisture has evaporated, and the vessels have become "white dry." Great care is needed in this particular, for a single damp vessel is liable to produce mischief in the kiln, by cracking and so, probably, damaging others. In the large chamber called the kiln, the dried goods are then packed in earthenware cases, called "saggers," one above the other, until the whole interior is filled. The entrance by which the men have been enabled to pack the kiln is afterwards built up, and closely plastered: six

\* It was pleasing to hear that the boys here have formed themselves into a band for the practice of music, and, assisted by their employers, have purchased instruments worth 50*l.*



or seven fire-places in the sides are slowly lighted, and the heat is gradually increased until the whole of the interior of the kiln has been brought to a white heat, by which time the pottery has become a hard substance, but is without glaze. Salt thrown into the furnace produces what is called the salt-glazed ware. The brown ware and most of the common articles are made in this way.

Another method of glazing, however, has been introduced lately into some of the Lambeth Potteries. This is by a preparation chiefly composed of feldspar, ground and reduced to such a consistency that it can be painted over the surface of the articles; and this the white heat of the furnace turns into a vitreous glaze without the use of salt. The ware glazed in this way has a very clean and light appearance. The baking being finished, the kiln is allowed very gradually to cool, and then the entrance is again opened, and the various objects taken out ready for the market. In the whole three or four days are occupied. So great is the heat required for this purpose, that it becomes necessary to renew kilns every two or three years. It is from the numerous chimneys of the kilns that the black volumes of smoke proceed which roll over Lambeth Palace and other quarters.

It will be remembered that, at the passing of the Smoke Act, the potters made so strong an opposition, declaring that they could not possibly carry on their business without smoke, that they were partially relieved from the operation of the Act. We are glad, however, to learn that they have changed their opinion, and are striving to comply with the regulations. At Messrs. Doulton's we saw three kilns which, by a very simple arrangement, produce little if any smoke. If gas could be employed for heating the kilns, as was once suggested, it would seem that many advantages would result, the avoidance of smoke amongst them.

It is curious to notice the variety of stone-ware which is produced at these Lambeth Potteries;—ink-bottles of various sizes, large bottles for spirits, ornamented glazed casks (if we may so call them) for the publicans, various kinds of mugs, &c. for shipboard, immense quantities of strong articles for exportation to Australia; chemical vessels, retorts, glazed pans, and the worms of stills for making acids; filters, and the various goods required for sanitary uses. The large glazed ware jars of 400 gallons bring to mind the story of "Ali Baba and the Forty Thieves," and we should not be surprised to hear a voice exclaim, "Is it time?" Large jars are in use in various parts of the East, but these are unglazed, and, consequently, much more easy of manufacture.

The process of grinding the neck and lids of jars, and fixing them by simple means, so as to render them air-tight, is noteworthy. Thousands of such jars are sent abroad, filled with jams and jellies. There are many other matters which might be looked to; but having seen this much, we shake the dust from our clothes and depart, suggesting, as we do so, that a little more art might advantageously be brought to bear on this manufacture, so admirable in a commercial, social, and scientific point of regard. The arrangements for saving labour, lessening cost, and multiplying productions, are perfect, and most advantageous for society: it is to be regretted, however, when these prove adverse to the development of taste,—the production of beauty.

Of Lambeth, in a sanitary point of view, we must find an opportunity to speak further before long.

SOCIETY OF BRITISH ARTISTS. —The thirty-fourth Exhibition of the Society of British Artists is now open in Suffolk-street. It consists of 852 works of art, and is similar in character to those which have preceded it. We will give some account of it in another number.

## REVIEW OF THE DESIGNS FOR THE MEMORIAL CHURCH AT CONSTANTINOPLE.

In the first portion of our notice,\* we were led by the bent of our ideas as to novelty and the use of continental models, away from the designs "especially mentioned," of which we have remarked only on those of Messrs. Weighman, Hadfield, and Goldie, and Mr. C. Gray. Mr. W. White's design is certainly one that would not be passed by so long as we have left it.

It is glowing in party-colour throughout, unstinted in the drawings, and profuse in contrivance of plan and in novelty of device. The plan, described generally, comprises nave, aisles, and transepts, with central tower, chancel; north and south corridors, forming with a western porch, a covered way round the main portion of the building; and a tower at the north-west, joined by a covered way. The length of the nave is chiefly made up of three wide divisions of piers and arches; but each bay has three subordinate divisions marked in the groining of the nave and by the bearing shafts and ceiling ribs of the aisles; and in these divisions, very narrow windows are set, four together. The buttresses are carried up to form what we must call pinnacles, though they are square in plan, and are terminated by party-coloured tile spire coverings, with finials of metal work; and there are very bold flying buttresses across the aisles and corridors. There is a general blankness of character about the decorative treatment externally, excepting as to the effect produced by the features mentioned, and the several gables to the entrances of the western porch; but positive colour is prominent on the gables, and in vandyke patterns in the roof covering; and in the interior it prevails largely. The central tower is octagonal above the roof, and is finished with a tiled capping; and internally the lofty ceiling of the lantern is vaulted. The other tower is lofty, and barely decorated in the lower part, and is finished with gabled sides and an octagonal tiled spire capping. It may be doubted whether the design would not be too gaudy in effect, and whether the result would be at all proportionate to the real study involved, or even the cleverness which the work exhibits.

From the manner in which novelty in details is studied, it may result that art is reduced in effect; and the very ingredients which should go to form the art may be the means of destroying it.

Mr. R. P. Pullan, on the other hand, also "especially mentioned" (for his design with the motto, "In Remembrance of Scutari"), though he exhibits a design for elaborate enrichment of the end of the chancel, appears to have studied plainness of character, or at least in his exterior. He also adopts the cruciform plan, but with a western tower and spire, and lofty aisles without buttresses. He shows no clerestory, but has a triforium, lighted by a second range of windows. The ceilings of nave and aisles are vaulted; and as in most of the designs, the roofs are of timber, and of a high pitch. A wooden *flèche*, with lead covered crocketed spirelet, is placed at the intersection of the cross. The same architect exhibits a second design, but of less merit.

Mr. G. Truefitt—in the same class—shows no decoration in colour, and little otherwise in ornament; but, whilst his plan is novel, the combination in the design is effective. The plan in general arrangement is cruciform; but the nave and transepts are narrow, without aisles, and branch out from a central irregular octagon (a square with angles cut off); the transepts are terminated by towers rising clear of the centre, surmounted with gables, pinnacles, and spires; and the chancel is terminated by an octagonal apse, whilst a vestry and organ chamber to the chancel form with it one general octagon on the ground, though they are carried up to somewhat less height. The centre octagon is carried to a greater height than the nave and chancel, and has its separate roof, with a *flèche* or spirelet. There are no buttresses, except as piers internally; mouldings are sparingly used—there being none to the gables: the parapets have only a crowning

moulding; and the chief decoration is got by the windows—with plain perforations to their heads; and by a number of star-shaped perforations along the battlements and other parts. The general group, however, is happily composed. The windows are in the upper part of the walls; the ceiling is plain waggon-headed—arches over the windows groining in; and the centre space being domed over. A good rood-screen in iron-work is shown.

Of the four designs which are "honourably mentioned," Mr. A. Bell's is of northern Gothic character, cruciform on the plan,—having nave and aisles, and lofty chancel, with apse dodecagonal in plan,—and two square towers in the position of transepts, with pinnacles, gabled sides, and low pyramidal spire-cappings of stone; and it has also a vestry and an organ-chamber with apses, in the position of chapels to the transepts. The north transept or floor level of the tower forms a baptistery, and the corresponding part of the plan forms the depository for the bier, and would be approached at funerals by a covered way, which is external to the south aisle. The arches of the towers next the nave, are filled in, each with subordinate openings and a central column. The style is a modified Early English, with continental features. There are bold buttresses and flying buttresses, and high-pitched roofs; a waggon-headed vault to the nave, and a groined ceiling to the chancel. Coloured materials are sparingly introduced. The nave piers are shown as of red marble or granite, and there is a smaller shaft attached, for the support of the principal arches to the aisles.

The design by Francke, of Meiningen, is the only one of those by a foreign hand that would lay much claim to notice. The plan has been carefully studied; but the decorative details, though they may be moulded after some examples of German Gothic, are so spiritless, and positively so un-Gothic to English eyes, that we are afraid we may not give that place to the design which others have deemed it deserving of. Its best feature is exhibited on plan in the treatment of the east end, no doubt intended as the place for monuments. As in cases before referred to, this has a polygonal apse, formed by piers and arches, with the aisle carried round—the inner form being irregular octagonal, and the outer one from a polygon of sixteen sides,—the groining here, as it is throughout the design, being very carefully considered. The general plan is cruciform, with short transepts—the divisions of nave and aisles of equal height internally; and there are two western towers with perforated spires, and a central spirelet. The aisle windows are lofty, with unbroken mullions, and traciced heads. The disconnected horizontal stages of the towers; and the pinnacles springing from labels or canopies, or inserted in the raking lines of gables, are surely things such as should be avoided.

Messrs. Howell and Budd's design has been studied with extraordinary pains, and is shown in a very elaborate set of drawings. Everything appears to be drawn,—to the hanging of the bells, and the colours and patterns of decoration. The plan—an extensive one—consists of nave and aisles, transepts, chancel with apse on the dodecagonal plan and ambulatory, aisles of communication (alongside the chancel) and vestries without, a south porch having a room over it, a west tower and spire, and a baptistery and a morning chapel to the west. Also, there is a triforium and a clerestory. The general design is of Early English character. Coloured materials are used in patterns with considerable skill. The nave piers are rectangular on the plan, and carry segmental arches, but with a second arch under the soffit, of equilateral shape: whilst the chancel arches are of the more general form. The nave is covered by a waggon-headed vault, with arches over the clerestory windows, groining in: whilst the chancel ceiling is groined throughout. There is a wooden louvre, opening to the interior, at the intersection of the cross. The perspective effect of the interior would be fine; and details of decoration, both pictorial and ornamental, exhibit taste,—but could such a building be raised for 20,000l.?

Messrs. Pritchard and Seddon exhibit in their design, a very clever application of coloured materials disposed in voussours of arches and

\* See p. 137, ante.



circles and sub-arches surrounding the light-coloured stone tracery which fills in the window openings. The plan also has a distinctive character. It comprises nave and aisles, chancel with dodecagonal apse, transepts extending to the aisles, a western tower, and in advance of the latter a porch running up to the height of two stages, with open arches in the lower part, and exposing internally the full height without floor. This communicates with the middle of an open loggia at the end of the main building,—proposed for the sculpture,—through which access is gained to the congregational portion of the church. The style may be called Early Decorated in character, with a few Italian features. The aisles are low, with shallow buttresses, but without windows, and are faced internally with coloured materials in patterns, and have stone roofs. The clerestory is of great height, with gables and bold flying buttresses, the ceiling of the main division being stone groined, under a high-pitched roof. The tower is square below, and octagonal at the belfry stage, and is crowned by a lofty spire; and at the intersection of the cross is a *fleche*, or spirelet. The merit of the design is in the treatment of the coloured materials,—each being applied in its proper place, and without the too common excess.

Amongst the other designs, is one by Mr. T. Meyer, which has a cruciform plan without aisles, and a central octagon with large lantern, pinnacles, and flying buttresses, but is more elaborate than successful in its details.—Mr. C. H. Gabriel, whose design is of Early Decorated character, and cruciform plan, exhibits two well-drawn views of it.—Mr. Raiton's design is cruciform in plan, with western and central towers and spires, and flying buttresses, and is of general Early English character, with the masses well proportioned for effect, though the details have less novelty than those of other designs. The piers supporting the central tower seem of slight proportions,—being no larger than the others.

Mr. T. E. Thrupp, who has a good perspective view of his design (Early English, with two western towers), shows a contrivance which it may be supposed is introduced to resist the effects of earthquakes. He would turn the main arches as semicircles, from pier to next pier but one, placing the intermediate pier with its halves of the pointed arches (in which the vousoirs are shown dowelled together), under the other. An iron rod would be then fixed upright in the intermediate pier, and bolted top and bottom to a continuous chain,—one chain above and another below the arcade.—Mr. Raffles Brown's plan is cruciform, with nearly equal nave and aisles, and the apsidal termination to the chancel which in some form has been adopted by so many of the competitors. Otherwise the design is of English Gothic character, except as to the introduction of red bands. It has a tower and spire of excessive height.

Mr. J. W. Mould is an exhibitor from New York. The transept in his design is of greater height than the nave, and has the tower at one end of it. The general grouping has more merit than have the details. Like many of the American attempts in Gothic,—shall we say, affording that reflex of character which architecture ever presents,—this design is pretentious in its claims, but wholly fails when tested by examination,—the horizontal lines in the tower and spire are sufficient to quote as instances.—Mr. Henszlemann's Gothic, of a different sort, is equally curious in its way; and yet, some of the details of the polychromatic decoration show knowledge of that portion of the subject.—Mr. James Castle's design has merit in many of the parts,—spite of their costliness. But, the coloured materials are applied in a questionable way, considering both colour and cost of carving.—Mr. M. Rohde Hawkins's design is one of a higher class than some that we have been noticing,—yet the resemblance which there is between the central and the western towers, and the difference in scale and treatment otherwise, involves, we think, some error of principle. They should either be of one family—with spires, or designedly more different as to the towers.—Messrs. F. and H. Francis's design is also of English Gothic character, and is shown in a good perspective view.

The framing to the roofs and spire appears to be of wrought-iron, and covered with lead,—in the case of the spire ornamented with pateras in alternate spaces. We suppose the climate was considered with reference to this metal-work. In some parts of the East, we apprehend, such a mode of construction would be wholly unsuitable. The stone roof is, as we observed in a former article, the proper covering.—Mr. L. de Ville's design has a peculiar character of loftiness of proportion, but fails in details; whilst Mr. Derick's design is one of those which are correct and careful,—good according to the standard of English models,—but which contain little that is new, or of the real nature of the indispensable art.

But, on the whole, we retain the opinion that the exhibition illustrates a decided step of progress; and it deserves even more attention than we have been able to give to it.

#### MR. SYDNEY SMIRKE'S SECOND LECTURE ON ARCHITECTURE AT THE ROYAL ACADEMY.\*

It is amusing to trace the various changes and chances of our helpless art, struggling amidst the difficulties that beset her during the four or five centuries succeeding the date of the Tomb of Theodoric. To borrow a not inexpressive homely figure of speech, the builders of these times were as breeders who wholly neglected purity of blood, and every species of cross was the consequence. In Lombardy the old Roman stock got tinged by the strange fantasies of the northern mind; and in Venice may be recognised strong indications of an eastern infusion. In Puglia and Sicily the graceful hand of the Saracen plainly discovers itself; and in parts of France, also, these eastern influences have left behind them the traces of a genial taste. Strange and often inharmonious combinations led necessarily to the confusion of style; for there were no master minds to combine or correct, and the genius of originality had departed. At this period, art shared the fate of literature. Hallam, in his history of this period, says:—"Ignorance was the smallest defect of the writers of these dark ages: they are uniformly deficient in original argument and expression: almost every one was a compiler of scraps from the Fathers." How truly may this criticism be applied to their buildings! Unable themselves to carve, they misunderstood and misapplied the sculpture of their predecessors. Reckless spoilers, they carried off the columns that others, in happier times, had wrought, and piled them up again often with misapplied capitals and inappropriate bases. I have myself seen, in the crypt of one of the earliest Christian churches in Sicily, an Ionic capital, of classic workmanship, reversed and converted into one of the priest's sedilia, the volutes forming the elbows.

The strange expectation that pervaded Europe in the tenth century, that at its close the world was to pass away, seems typical of the prostrate state of society at this period. But the night has its morning, and with the eleventh century came clear evidences that the crisis was past. Political improvement soon begot improvement in the arts. The vigorous republics of Italy led the way to the cultivation of the neglected arts of peace, and the dormant fountains began to show signs of the riches they concealed. In Pisa, and Lombardy, and Venice, buildings arose which, to this day, court and deserve our admiration. The period of the highest political prosperity of Lombardy was marked by the execution of great engineering and architectural works, which remain to this day as honourable monuments of the freedom and energy of the Lombardic States. On the Rhine, and in France, our teeming art brought forth a numerous and noble progeny of buildings. On our own soil, too, sprang up edifices which command our veneration, not only for their age, nor only because they are the works of our own forefathers, but because they are, in some respects, and in some instances, unrivalled, in dignified and simple grandeur, by the works of any succeeding time. Disregarding the attraction of mere ornament—devoid of all architectural artifice,—the old builders of our Norman period knew well how to raise structures in harmony with their own earnest and devout feelings.

It may be an agreeable task, hereafter, for me—or some other who may follow me—to study with you the details of these truly noble monuments; to trace the classic percentage of many of the most characteristic details of Norman architecture; to point out the direct lineal descent of not only many ornamental, but many constructive devices, from the age of the emperors to that of the pontiffs; for example, how the solid ashlar ribs, with light rubble spandrels, as practised by Norman masons, were derived from a like

economy of labour and material observable in the groined vaults of the Coliseum. But, for the present, I forbear to dwell on such matters. Nor shall I attempt to expound to you how, when, and where buildings first turned pointed arches. Of this we have already had theories enough.

Our old master, Wren, tells us that the Crusaders brought the pointed arch from the East, and I, for one, am quite willing to believe that, if they did not, they had at least seen such a ches in use before they had been engrafted on western architecture. It may, I suppose, be safely asserted that, since the dispersion of Babel, no movement of popular masses has been attended with more important or more permanent results than the Crusades, and it seems no unreasonable conjecture that the pointed arch was one of these results. But a larger and more interesting question remains behind. In what region and at what period were buildings in the Pointed style (of which the arch is only a component member) first erected? England once laid claim to the parentage of it,—Germany still appropriates it,—Italy has had its advocates. I believe that the weight of evidence preponderates in favour of France; and the period of its earliest appearance is to be referred to the first half of the twelfth century.

Such was the extraordinary vigour of our art, now thoroughly awakened from its long slumbers, that, in the short period of half a century, the style arose, and reached, if not its maturity, at least to a perfect, complete, and consistent existence. Some idea may be obtained of the fervid activity of this period, from a consideration of what architecture effected in Europe during half of the twelfth century, as compared with the progress (if progress it may be called), during half of the eighteenth century. In the one case it would be easy to adduce a long series of splendid edifices, evincing a constant advance in the knowledge and power of art. In the latter case, how faint and feeble the steps! The puerilities of Louis XVI. varied but little from those of the preceding Louises. In England, from the first George to the third, what advance was made but from one deformity to another?

During the first period under consideration, not only did religious bodies vie with each other in the erection of numerous stately structures, on a more extended plan, and upon a more sumptuous scale than before, but their artists devised new modes of construction,—brought out new effects—created new beauties,—and overcame new difficulties. Disdaining to follow their predecessors even in the mere outline of their mouldings, they flung aside their old moulds; excavating deep hollows, and bringing out sharp arisings, with a vigour and force of hand quite unknown to their fathers. But it must, in candour, be admitted that to France is mainly due this wonderful development. England followed with a more faltering step, and paced slowly with the forms of her Norman conquerors. It was in France that a moral energy, religious zeal, and political preponderance, combined to favour the exertions and genius of its accomplished architects.

I may remark, however, that our comparatively slower pace was attended by one advantage: it gave us time to perfect an Early Pointed style (which, with a degree of pride not altogether unwarranted by fact, we are fain to call the Early English style), more homogeneous and complete than any corresponding transition style in France. So rapid and brilliant was the advance there, that the interval was short that intervened between the first establishment of the Pointed style and its full maturity. As to Germany, the grand, old, sombre style of Romanesque architecture lingered on the banks of the Rhine long after the more mercurial genius of the neighbouring country had advanced far in the new manner of building; whilst in Italy this novelty, being an imported article, was marked by scarcely any preliminary efforts.

The upper church at Assisi affords, perhaps, as complete a specimen of Early Pointed art as any in Italy, and yet it was nearly the first, bearing date in the earlier part of the thirteenth century. For a time, it is true, this style became prevalent in Italy, but its reign was short. From the date of Arnolfo di Lapo's work at Assisi to Andrea Orcagna's Loggia at Florence, there was an interval of about 100 years; and at this Loggia we see strong indications of a return to the classic school, which Italy had quitted so late and so reluctantly.

Reverting, however, to the more general European view we are taking, I would say that, with certain exceptions, Pointed architecture perfected itself throughout Europe at the close of the thirteenth century, and obtained that preponderance which was due to its own superiority in all the highest qualities of our art.

An insatiable spirit led on the enthusiasts of the fourteenth century to seek out fresh triumphs, but this very ambition was the stepping-stone to their subsequent degradation. The first signs of this are perceptible in an exuberance of ornament, and a certain

\* See page 148, ante.



ritual character of construction, which afterwards became the seed and source of ultimate decay. Every gable and pinnacle, and almost every cornice, became fringed or studded with caskets, buds, or bosses. Workmen began to fasten and cut up every plain surface, and to seek out means or excuses for perforating every solid space. That last remnant of Early art, the capital, representing the impost of classic times, ceased at length to be an essential feature of an arcade; and all lines became blended into each other; the straight into the curved; the convex into the concave; until masonry seems to have repudiated their natural material, and treated stone like wood or iron. Many superior buildings, no doubt, arose during this period. The accumulating wealth, and, I must add, the aspiring tendencies of the ecclesiastical and municipal bodies, urged the builders of the fourteenth and fifteenth centuries to make great efforts, and many noble buildings were the result. St. Stephen's, at Vienna, Fribourg, Antwerp, Milan, and many other fine structures, attest the unabated ardour for church building; yet still the course of true art was then a downward course. In short, a great change had come over the Gothic manner, we have already seen how it faded with Greek and Roman art, and so it faded also with Medieval art. What began in simplicity, ended in complexity and confusion; what was pure at first, became purulent at last. Indeed, excessive ornament, however admirable or striking the effect of it in particular instances, may be taken as the surest indication we can have of approaching decay.

It is needless, however, to dwell on a tale which has been often told. The errors of the later Medieval architects have often been the subject of unfavourable comment, and are too often unjustly used as instructions of attack on the style itself. We are accustomed, with justice, to accuse the exuberance and excess of the later styles as the causes or the consequences of degeneracy; yet such a result seems to be in the natural and inevitable order of events. Builders were at first timid and cautious, like men exploring a new country: they were satisfied with small advances, and sought rather to secure their footing than to expatriate freely. In course of time they gained courage through experience, the masons struck their stone with a bolder and a freer hand, and at length, having acquired a complete mastery over their materials, and confidence in themselves; they would seek by *tour de force* to produce new effects and more surprising displays, and each became emulous to exceed his fellows in the exhibition of manual dexterity. Thus our art would necessarily be distinguished by simplicity and plainness in its infancy, by intricacy and ornament in its decrepitude; the latter arising from excess of power, the former originating in actual incapacity.

As we pass on in our history, we find our chronological view somewhat embarrassing. It might almost be said that civilized Europe had hitherto been cultivating one school: architecture spoke, as it were, but one language, varied only by dialectal peculiarities; a general coincidence which is very remarkable, considering the social disunion of countries at this period, and of which, if the subject were worth pursuing, many curious instances might be adduced. We can scarcely account for this coincidence, except as perhaps one of the effects of the widely extended and closely blended fraternity of Freemasonry. But in the course of time this unity of feeling and practice became weakened or dissolved, and the artists of various countries diverged into various paths. Distinct schools were formed, and styles became localised. France, Germany, and England assumed widely different aspects, and it is curious to note to what extent this separation was ultimately carried. The several provinces of France differed materially from each other: mutual differences are also apparent in the several schools of German art. Even in a country so geographically small as England, striking characteristics distinguish the north from the south; the east from the west.

Such differences were no doubt partly due to the differences of available materials, a circumstance often greatly influencing the local character of buildings; and of this I may hereafter have occasion to present to you some not-very-likely instances. But these differences were, in this country, also due to its growing independence of foreign connection and of foreign art. England had formed her own schools, and thence became possessed of her own special diversities of style.

I shall not, however, contend for our superiority at this period. I am ready to confess, that whilst on the continent a licentious freedom prevailed in late Medieval architecture, characterised by great force and boldness; England, on the contrary, sank far beneath her former level, and betrayed undeniable signs of unbecoming. Whether, and to what extent, this decay may be attributed to social and political causes we will not stop to inquire. It is, however, certain,

from whatever cause arising, that not only in England but throughout Europe, Pointed architecture lapsed into such a condition as to render its final abandonment a subject of little regret.

The style had in truth worn itself out. The strangest vagaries prevailed. Stonework was distorted into apparently impossible forms, assuming the proportions of metal; twisted into a resemblance of wood; and, as at Ulm and elsewhere, tracery was made to imitate the branches and small twigs of trees. All merit was considered to consist in extreme dexterity of execution; and simplicity seemed to be the principal defect to be avoided.

But the abandonment of medieval art was very far from being content with its own decay. Europe, as I will proceed in a few words to show, I have already named Orsini's celebrated Loggia, whose date is the middle of the fourteenth century. This work is of no great dimensions, but of most pleasing proportions, and, except its cornice and a few minor details, seems conceived in a perfectly classical spirit, and was, in fact, among the first fruits of the growing distaste for the then prevalent Pointed style. The passion for classical literature in the free states of Italy soon completed the disenthralment of mediæval art. Fortunately for Italy, a most beautiful modification of the classic style arose in the fifteenth century; and as the change happened to coincide with the appearance of a glorious company of the most accomplished artists, a beauty was imparted to the renovated features of ancient art which was truly admirable. I would name the church of St. Maria dei Miracoli, at Venice, and the church of St. Francesco at Rimini, with some other well known buildings, as singularly elegant and well worthy of careful study, not only for their exquisite details, but for the pure and simple dignity apparent in their design.

The examples, however, of the best renaissance work are not numerous in Italy. The extreme activity of art at this period led to the natural result—excess, as at the Certosa, at Pavia, and the inordinate study of classical roundness led to the abandonment of much of that which was original in the manner. A school, however, arose, of which the masters were such men as Alberti, Peruzzi, Raffaele, and Michelangelo, wherein was perfected such an admirable adaptation of ancient forms to modern uses, that now, after the lapse of 300 years, human ingenuity has since contrived no style (as it appears to me) so exactly meeting the wants of civic architecture: plastic and versatile; capable of adaptation to every purpose; susceptible of every expression—

"From grave to gay, from lively to severe."

So active, however, was the movement of our art, and so rapid her course at this period, that the same great master who witnessed the earlier steps of the Renaissance, witnessed also its decline. Michelangelo, whose stupendous power gave force and breadth and grandeur to every thing he touched, but whose mind was rather sculptural than architectural, did, I fear it must be admitted, lead the way to those anomalies which in weaker hands became serious defects.

It affords a curious evidence of the æsthetic isolation of England at this time, that during the greater part of the period to which we have just been adverting, scarcely a glimpse had been yet caught of the great changes which continental art was then undergoing. England appears to have been taught her first lesson in the new style by Holbein; but it is not remarkable that at the very time when this German artist was starting the semi-Gothic court of Henry by his novel and fantastic arabesques on the ceiling of the chapel in St. James's Palace, Michelangelo was painting the noblest imagery which the human hand had yet depicted on the ceiling and walls of the Sistine Chapel in Rome.

With us the new Italian mode of architectural design made no very rapid progress. For full 100 years our buildings generally retained a strong savour of Mediæval art. Unfortunately, too, the active mercantile intercourse existing at this time between England and the German states, and our ties of consanguinity and of political interest with the German races, gave to our Renaissance rather a German than a French or Italian bias. We are not wanting in specimens of this transitional style, equal perhaps in beauty and grace to any,—but the examples are neither numerous nor considerable. Certainly, the general character of our English buildings at this period deserves much of the condemnation which has been bestowed on it with no sparing hand; for, however widely assunder the partisans of the two extremes of Classical and Mediæval art may be, both extremes occur pretty cordially in contemning that mixed breed of architectural forms which prevailed during the reigns of Elizabeth and James. This hybrid style has, indeed, its merits as well as its admirers: there is a broad, masculine boldness in its eccentricities; much ingenuity and originality in its conceptions; and, above all, its peculiar claim to the quality of the picturesque is undeniable. It, further, enlists our

national sympathies as Englishmen, and marks a brilliant epoch in our history. It is, moreover, an indigenous variety; for although, as I have already said, it bears a strong analogy to the contemporary manner of the Germans, it has a sufficient individuality to distinguish it very plainly from the heavier and more grotesque German variety.

We must not, however, dwell too long on this period: our ever-changing and inconsistent art, like a dissolving view, no sooner reaches a period when a style stands out clear and distinct, than again it confuses itself, and, entering into new combinations, emerges anew with an altered aspect.

Returning again now to Italy, as unquestionably taking the lead, at this period, among the artistic powers of Europe, we find art making a rapid descent after the days of the elegant Palladio and his polished contemporaries, and a style of architectural design became prevalent, the inferiority of which is, like that of Elizabeth, only redeemed by its breadth and boldness.

I am much inclined to attribute some of the leading errors of architecture at this period to the habit, then very generally prevalent, of uniting the practice of our art with that of one, or both, of the sister arts. Those artists are guided by principles, in many respects so different from ours, that the architect must be indeed rarely-endowed who is capable of successfully practising (however carefully he may, and should, cultivate) those other arts. The painter and the sculptor may well share with the architect in the study of the purely æsthetic principles of design; but there are other studies, I need scarcely say, immediately connected with the art of building, which are at least of equal importance to us. That whatever we design shall be consistent with the principles of sound construction is an obviously essential consideration, and, in designing, should ever be present in our minds. Yet these principles are precisely those which are necessarily foreign to the sculptor's and the painter's course of study and habit of thought.

From this combination of pursuits has probably arisen much of the extravagance of the Baroque school: such practical absurdities as broken pediments, and twisted columns, and that strange intermixture of floating clouds and flying drapery with the rigid and substantial forms of architecture, which defies common sense, though it certainly, sometimes, brings out some fine scenic effects. Hence, too, those strange curvilinear plans, such as the Royal Library at Berlin, and many continental churches, built in the phony days of the Jesuit missions, which were quite unknown in the better periods of art.

It is to be lamented that the great religious movement which originated with Ignatius Loyola, chanced to occur at this period, when our art was in so debased a state. An extreme zeal in the erection of churches and colleges distinguished that society, and to this day we witness the result, throughout the Continent, in a great variety of buildings, often very picturesque, profuse in decoration, and sometimes ingenious in construction, but in a style that has nothing whatever to recommend it to your favourable consideration.

Whilst art, in Italy and Germany, having lost its true path, was thus wasting itself in vain efforts to produce great effects, by false and artificial means, French art was diverging into another path, with results if not more natural, at all events, far less open to condemnation.

The grandeur of the architectural works towards the close of the seventeenth century in France, is so nearly allied to real greatness, and has so much of actual beauty of detail to recommend it, that we cannot be surprised at the estimation in which it is still held by many.

But, as we have already seen, our art never pursued a level course; and the breadth of design which distinguishes the age of Louis XIV. became frittered away and disfigured by effacement under his successor, when at length the storm of the great revolution arose, and our art, in common with the political institutions of Europe, had to submit to other great changes.

To revert to the period of the Renaissance in our own country, I have already said that the free, though grotesque manliness of the Elizabethan period soon lost its character. The public mind of England was engrossed by her internal contentions, and influenced by the more frequent and direct communication with the Continent, we were content to borrow the peaceful arts of design from our neighbours, on whom we have been so often dependant in matters of social habit and taste. Close observers of costume will trace, in pictures of this date, the prevalent fashions of France, Germany, Spain, and Italy, contemporaneously influencing the dress of the people of England.

It was to the building up of a great political fabric that the energies of England were exclusively directed, and she postponed all minor considerations to a more peaceful time and a more convenient season. It is



recorded of Themistocles that whilst he would frankly admit his inability to play on any instrument, he yet claimed the prouder distinction of knowing how to render a great nation prosperous and happy. So Englishmen, at the end of the seventeenth century, may well afford to admit that they followed the taste and fashions of other countries, whilst, in their own, they were engaged in laying deeply and broadly the foundations of a political system which other countries have ineffectually attempted to borrow or imitate.

Let me not, however, do injustice to the memory of our great master, Wren, who certainly holds such rank among the artists of Europe as may go far to redeem the character of our country at this period.

I think there is little doubt that, had he lived under more favourable influences, in better times, and with the means of acquiring a more intimate knowledge of art at its best periods, the mental powers and professional skill of Wren would have placed him on a level with the highest of his predecessors, as they certainly did win for him an unapproached pre-eminence among his contemporaries. In tracing these outlines of the history of our art, you will perceive that I have exclusively followed her fortunes as a *fine art*. Were it possible within these walls, and on such an occasion as this, to trace the mechanical and constructive progress of architecture, our course would not be without interest and utility: we should find that sound principles of construction have always distinguished the best periods of art. The Greeks, like the Egyptians, worked, not perhaps with much constructive finesse, but with a most elaborate, reverent attention to good execution. The bedding and jointing of their masonry surpasses even the comprehension of a modern mason. Roman buildings, also, of the Augustan age, show the highest degree of constructive excellence; and, except in the use of iron, I am at a loss to say what material progress has been made in this department of practical art, during the seventeenth or eighteenth centuries that have since passed away.

The darker ages that followed were as strongly marked by constructive incapacity as by the fallen condition of architecture as a fine art. Great negligence of execution, and a resort to rude, unsentimental expedients mark that age, and it was a sagacious policy of the church to re-animate the subsidiary arts of building, by enabling and investing them with the character of a religious confraternity of which the vestiges still survive to us in the social institution of Freemasonry.

In the best period of the middle ages, the study of the arts of construction were not held to be beneath the dignity of the highest intellects, and the result was a wonderful mastery over the practical acts of building.

These few remarks I throw out as suggesting to you a useful line of study; not one, however, that can be pursued within these walls.

I now bring my brief historical notes to a close: it is useless, perhaps, to pursue them farther. To speak of the present would be an invidious task; to speak of the future would be an idle presumption. To undergo a perpetual change seems to be the destiny of our art. Between the works of the Creator and of the created, there is no greater distinction than their relative mutability. Of the latter, all is fluctuation, change, and decay;—of the former, as it is to-day, so it has been since the beginning. There are no fashions in the plumage of birds; and the flowers, whose grace delights us now, have, with the same grace, delighted mankind since they first scattered their fragrance over the garden of our earliest parents.

Let each man, therefore, in his sphere, strive to restrain these fluctuations of fashion within the limits of good sense. It is, at least, the artist's duty to do so. But we cannot alter our inherent infirmities, and all that the most ambitious teacher can hope to do, is to offer the assistance of rudder and compass to those who are about to launch their frail vessels on the troubled waves of professional life.

#### IMPROVEMENTS IN THE PARKS.

THE projected improvements and alterations in the metropolitan parks are beginning to develop themselves, so that an opinion may be formed as to what their effect will be when complete. The long draining and cleansing operation in St. James's park seems to be progressing satisfactorily. The bottom is nearly formed, and in a few weeks this part of the business may be easily terminated, and by the end of May the water be turned in. Let us hope that the little fountain at the head of the lake opposite Buckingham Palace will be really improved, and the quantity of water thrown up by it considerably increased. Let us have no more squirts, but something really effective and ornamental. Surely the powers that be can call in the aid of some artistic cunning in the mystery of hydraulics, capable of arranging a series of roses, jets,

and pipes something different from the old model of the street fire-plug, which really seems to have been the original of all our attempts at fountains.

The foundations of the suspension-bridge are progressing apace. A light structure of this kind, when once well commenced, ought not to be long in hand, and might be finished in a few months. This bridge will lead direct to the new passage opened to the public between St. James's Palace and Marlborough House.

This passage is supposed to be a thoroughfare, but during the levee the other day it was closed to the public, and considerable confusion was the result, for numberless cabs were turned back to make a detour either by the Stable-yard, or, in some cases, by the Horse Guards. This is an inconvenience which, when the new bridge is opened, will amount to a nuisance, but which, from the peculiar nature of the case, seems to be difficult to obviate on the occasion of drawing-rooms and levees.

By opening the passage to Pall-mall, a considerable strip of garden-ground is added to Marlborough House, which was much required at this part, as it was too closely hemmed in by the wall forming the western boundary.

In Hyde-park extensive alterations are in progress, which may be decidedly pronounced great improvements. Rotten-row has been considerably widened, re-railed, and partially drained, so that it now forms an excellent promenade for the equestrian part of the *beau-monde*. The Ladies'-mile on the side of the Serpentine seems to have been left untouched and forgotten, except near the magazine by the bridge, where the approach to Kensington-gardens has been opened up and considerably improved.

The Ladies'-mile requires widening,—not only the carriage-drive, but the paths on each side, for on fine attractive Sundays they are overcrowded, while on the north side, now apparently the fashionable lounge in the season, there are scarcely any walks at all, except ragged and irregular paths puddled out by the people themselves. The immediate vicinity of the Humane Society's Receiving-house requires improving, as at present it forms anything but a pleasing feature in the scene.

However, the grand improvement in Hyde-park is the new walk leading from the Marble Arch to Kensington-gardens. This is a decided improvement, and will be much appreciated by the denizens of the neighbourhood. It forms a pleasant walk from town to the gardens; and when the young trees and shrubs are full grown, will screen the park side from the dust and *disagreements* of the public road running parallel with it. Any one remembering what this walk used to be,—little better than a swampy *middle*, replete with every kind of nuisance, offensive to *useful* senses than one,—will be highly gratified at the pleasant change effected.

Near the Marble Arch, a kind of artificial mound has been formed, with a *swak* road, which is for the purpose of enclosing a series of conveniences, much required in the parks. These will be entirely concealed from view by the little shrubbery planted on the newly-created mound. There will be a small ornamental entrance for the residence of the Junior of the place, which will be snugly ensconced in a bowery plantation of shrubs and trees.

While on the matter of new roads and shrubberies, attention may be called to the neglected state of the path from the Baywater-gate to Brick-hill-gate. This route connects Brompton with the new neighbourhood of Bayswater, and is much used. The path, however, in winter, is little better than an impassable puddle, full of holes and muddy water. It requires immediate attention, and as it is really an important path through the gardens, it ought not to be left in its present neglected and forlorn condition, for in wet weather it is really impassable. The trees in the neighbourhood of this path have been rather smartly lopped, for the purpose of admitting a free circulation of air, and letting the same more readily penetrate, so as to promote the growth of an agreeable covering of grass, instead of the present black and swampy-looking surface.

The improvements in the parks are not merely a step, but a good long stride in the right direction,—a pretty clear indication that at last, by some means or other, "the right man is in the right place;" and as he has begun so let him continue till the parks are transformed into what they ought to be—pleasant and ornamental places of recreation, where our pent-up citizens may freely breathe the fresh air, and sun themselves in parks and gardens as beautiful in appearance as they are useful for healthy exercise and amusement.

In many places the old weather-beaten wooden railings have been removed, and replaced by "invisible" wire fencing, to the regret of some parties, who seem to fancy that old-fashioned posts and rails are more rustic and park-like than now wire fencing. The change, however, is for the better, as from a little

distance the wire is scarcely perceptible, which gives the inclosure the appearance of being open and in a state of nature, which is certainly more effective and pleasing to the eye than a long array of wooden rails, however old and rustic they may seem to the eyes of a few old ladies and gentlemen of a certain age.

In a few months, when all these alterations are effected, the young trees and shrubs in full leaf, glowing in all the beauties of the pleasant spring time, these changes and improvements will be duly appreciated: let us hope that they will be thankfully acknowledged, and due praise given where the praise is due to the taste and exertions of the worthy Commissioner, Sir Benjamin Hall. J. L.

#### INSTITUTE OF BRITISH ARCHITECTS.

At the ordinary meeting of the Institute, on Monday last, Professor Donaldson took the chair. Mr. H. Shaw, F.S.A. was admitted as an Honorary Member and Mr. Francis was admitted as a Fellow.

A letter was read from Colonel Phipps to Earl De Grey, president, conveying her Majesty's entire approval of the award of the Royal Gold Medal to Mr. Owen Jones; also a letter from Mr. Owen Jones, expressing his appreciation of the flattering manner in which the resolution of the Council had been supported by the members generally.

Mr. J. G. Crace read a paper "On Furniture; its History and Manufacture."

Mr. Crace's paper was illustrated by some interesting drawings of Egyptian, Greek, and Roman furniture, copied from existing specimens, and from vases and other representations; together with a large and beautiful series of photographs of the cabinets and other specimens of furniture exhibited at Gore House, and in the Great Exhibitions of 1851 and 1855.

The chairman said that he was sure the meeting would feel much indebted to Mr. Crace for his illustrations of the history and development of art in connection with the manufacture of furniture, which was one of the most important branches of decorative art. Mr. Crace had given some interesting illustrations of Egyptian, Greek, and Roman furniture; and in addition to his remarks, it might be noticed that carpets were entirely unknown in classical times, having been introduced from the East at a later period. The tessellated pavements, however, of the Greeks and Romans, were exceedingly interesting, from the beauty and variety of their patterns. In Medieval times, a profusion of ornament and decoration was bestowed upon furniture, both in churches and mansions; but he would only now allude to the two thrones or chairs used at the coronation of the Sovereign, in Westminster Abbey. One of these was originally a very splendid piece of furniture, being beautifully carved, and in part covered with gilded stucco-work; but the other was only a rude imitation of it. Mr. Crace had referred to an Egyptian seat, presenting examples of inlaid work, somewhat analogous to modern marquetry; but that art appeared to have been directly derived from inlaying in marble, especially as practised in Florence. French furniture had deteriorated very much in artistic merit from the time of Louis XIV. to that of Napoleon I.; but a superior style of ornament had lately been introduced. This was strikingly manifested in the Great Exhibitions of London and Paris; and it was gratifying to know that the London manufacturers had also produced works of very great ability. As Mr. Crace had observed, if the exercise of a pure taste were not upheld in the production of matters of luxury, such as decorative furniture, England would fall behind her competitors.

Mr. Digby Wyatt referred to the ivory diptychs of the Lower Empire, as furnishing some curious illustrations of furniture, in the successive variations of the form of the Emperor's seat or throne. This, it would appear, became gradually more and more elaborate within the next two or three centuries after the time of Constantine, and at length was covered with jewels and similar decorations. The great seals of England, France, &c. afforded similar illustrations of the subject, and were especially valuable, as being in all cases the work of the best artists of the time.

Mr. Crace called the attention of the meeting to some specimens of inlaying for marquetry, which had been cut in the room in the course of the proceedings by a workman in the employment of Mr. Blake, of Rathbone-place. These consisted of the petals and other parts of flowers, in four thicknesses of differently coloured woods; and the process of their execution, with the nature of the implements employed, excited a considerable degree of interest. Mr. Crace drew particular attention to the extreme fineness of the saw (being a watch-spring almost as fine as a hair), as contributing mainly to the necessary accuracy with which marquetry was fitted together.

Mr. C. H. Smith added some comments on the nature of the process, and stated that in the hands of a skilful workman it surpassed the results of machinery, both in accuracy and beauty.



In reference to a remark by Mr. Digby Wyatt, Mr. Crace stated that in a large establishment at Paris, the patterns for marquetry (on which the accuracy of the workmanship, of course, mainly depended had lately been executed in lithography. This was a very useful application of the printer's art; but minute accuracy, even to a hair's breadth, was essential in small designs, and however correctly a design might be drawn upon the stone, the paper on which it was printed was liable to shrink in drying.

Mr. Nelson, Hon. Sec. introduced the subject of parquetry for floors. He understood that the parquetry floors of Buckingham Palace had cost as much as 200*l.* per square.

Mr. Crace said that floors of that description might be executed at a comparatively trifling cost. He briefly described the process of their execution, stating that the inlay was cut by a machine, in order to ensure greater accuracy in the vertical position of the saw than could be obtained by hand labour.

The Chairman alluded to the analogous arts of Florentine mosaic, and Indian inlaid marbles. The latter, he observed, were remarkable for beauty of execution, but the recent specimens of Florentine work did not quite sustain its former reputation.

In reply to a question from Mr. A. J. Baker, Mr. Crace stated that only ordinary glue was at present employed for marquetry, though there could be no objection to marine glue as a greater protection from damp or heat. He further referred to the process of manufacturing the well-known Tonbridge ware, as a cheap and effective species of mosaic work. It was probably by some such process as this that the mosaic table of the Queen of Spain, exhibited in 1851, and containing between three and four millions of separate pieces, had been constructed.

#### THE CONTRACT TO LIFT THE SUNK FLEET AT SEBASTOPOL.

FROM an American source we learn some particulars as to the contract entered into by the Russian Government with Mr. J. E. Gowen, of Boston, U.S. for raising the sixty-four vessels-of-war composing the fleet sunk in the harbour of Sebastopol during the late war.

In the course of an examination of the condition of the ships, which occupied him for several months, with a Russ steamer at his disposal, Mr. Gowen descended with his sub-marine armour to the bottom of the harbour and examined the sunken vessels. He found that the channel of the harbour was in the middle, with banks upon both sides, that of the north being of sand, and that upon the south of mud. In the sand there were no worms: in the mud they were quite plentiful: the vessels exposed to the attacks of the worms are now but of little value, but it is said that only a small portion, comparatively, were sunk where they would suffer from their attacks.

The machinery of the ships, it appears, was carefully covered with a preparation of tallow to prevent injury from the water, but whether any of it still remains does not as yet appear. Mr. Gowen examined thirty of the vessels. The value of the whole fleet is said to be 65,000,000 dollars; and a certain portion of the value of each ship raised is to be handed to Mr. Gowen at the moment it is restored to the Russian Government.

The American expedition will consist of two vessels, one of which leaves Philadelphia on or about the 1st of April. The number of persons engaged to accompany it is about 150. Some of the hydraulic machinery for raising the vessels is of a colossal description, one cylinder alone weighing 54,000 pounds. The value of the material to be furnished by the Russian Government to be used in the raising of the fleet will be about 1,500,000 dollars; and the time occupied in performing the contract will, it is thought, be about eighteen months or two years.

At Kerch, there are also some five or six Russian vessels sunk, which are included in the contract, and in the harbour of Sebastopol there are some 600,000 dollars worth of chains and anchors. In addition to the expedition from America, the Russian Government bind themselves to furnish from 3,000 to 5,000 men, whose pay from Mr. Gowen will be about 25 cents. per day, they "finding" themselves.

Mr. Gowen gives some particulars from that now famous city. The Russian Government are engaged in rebuilding it. Before the siege it contained, it is supposed, about 80,000 persons. When Mr. Gowen was there about 6,000 had returned. Several thousand labourers were then engaged upon the works, and the number was to be largely increased. The old city was famous for its narrow streets: the new city will be built in squares. It is also said that there are restrictions against the erection of wooden buildings. The Russians, he says, have already gathered in the vicinity of the town more than 16,000 tons of shot and shell, and they are still so thickly scattered around that it is impossible to tread without touching them.



ST. MICHAEL'S, CORNHILL.

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##### NEW PORCH.

The old church of St. Michael, Cornhill, was destroyed by the fire of 1666, and the rebuilding of the body of it was commenced by Wren in 1672, in the style of other of his churches. The tower itself was weakened, and fifty years afterwards was taken down and rebuilt, it is asserted, by the same architect, the last stone being laid, according to Malcolm, August 29, 1721. Wren must have retired from practice at this time, but may have made the arrangement previously. Strangely enough, the architect, in rebuilding the tower, adhered to the Gothic style, and though the details are poor, the general outline is noble and effective.

It was long shut in, but a year or so ago some of the houses which intervened between the north side of the tower and Cornhill were cleared away, to obtain an entrance there to the church, and now a Porch has been built, and two stages of the tower itself have been repaired and altered, windows with tracery, and a new circular window with wheel tracery immediately above the porch, having been inserted.

Our views show the general appearance and position of the tower, and the porch at large.

The only stone employed is Portland, of which the original tower is built. The six shafts in the jambs of the principal doorway are of red polished granite.

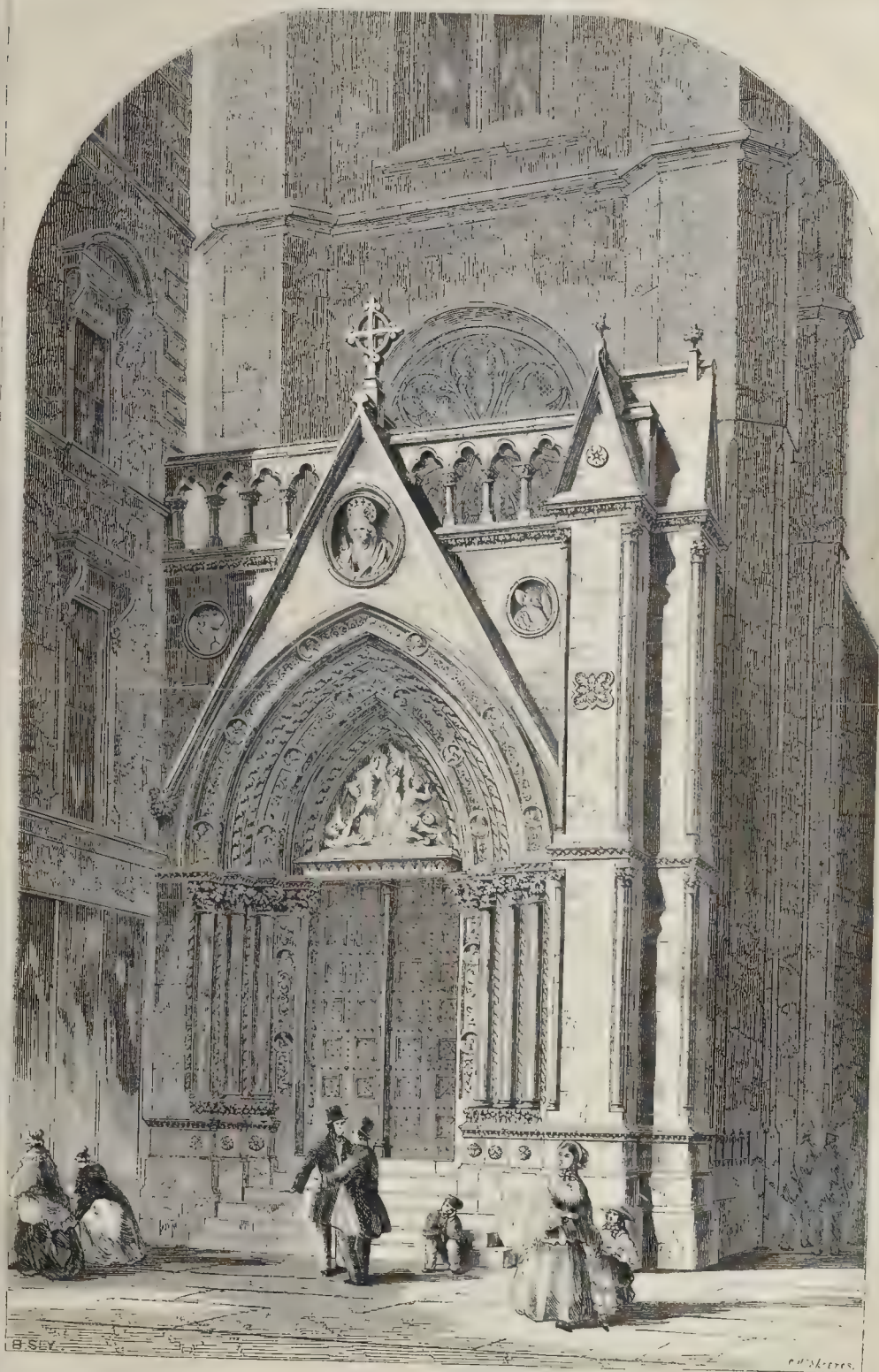
The sculpture in the gable of doorway represents Our Lord in the act of benediction. In the tympanum below is to be a group representing Michael disputing with Satan about the body of Moses. The other carving consists of medallions of angels, bosses of foliage, &c. which are liberally introduced throughout the work.

The porch is a parallelogram on plan, and is groined in stone. The side window will be filled with a subject in stained glass, by Mr. Bell.

The cost of the present work, including the carving (by Mr. Philip), which is an important item, will be about 2,500*l.*

Mr. G. G. Scott, A.R.A. in conjunction with Mr. W. A. Mason, who has long been professionally connected with the parish, are the architects engaged. Messrs. Browne and Co. of Great College-hill, City, are the contractors.





NEW PORCH, ST. MICHAEL'S, CORNHILL.—MR. SCOTT, A.R.A. AND MR. MASON, ARCHITECTS.



## MOVES IN THE BRITISH MUSEUM.

The visitor to the British Museum will notice that a great alteration has been made in the arrangement of the Greek and Roman antiquities. The placing and lettering of the Townley and other marbles are not quite completed, but will be so in a few days. Some of our readers will remember a narrow gallery, the first door on the left hand after passing through the main entrance, in which were many sculptures of exquisite beauty, and also of the greatest historical interest. These, however, were jumbled together: busts of Romans were by the side of those of Greeks; and the other antiquities were so arranged that, although even the uneducated visitor of taste might feel and enjoy the things of beauty there, he must have left the place with confused ideas.

Up to a certain height the wall has been painted of a kind of crimson "madder brown" colour, which is rich, yet subdued, and seems to throw out, with good effect, both dark colours and light. Against this background are arranged the Roman antiquities, in something of the following manner:—

In one group, marked in gilt letters—Roman portraits—B.C.—A.D. 10. On the bust of Julius Cæsar—B.C.—101—44. It is curious to notice how much, in many points, this head resembles Roubiliac's bust of Pope, the poet, formerly in Bogara's collection. Augustus—B.C. 63—imp.—B.C.—A.D. 14. Tiberius—B.C. 42; and so on.

Near here are busts of Hadrian, the builder of the wall from Wall's-end, across the borders of Scotland,—Antoninus, and a Roman female, with simply crisped locks. Then we have Roman tessellated pavements from the City of London, and other districts.

There are on the other side of the gallery more mosaic pavements and other antiquities of this period, and one of them is described as a sarcophagus found in Hampshire; and reference is made to the *Archæological Journal*, ix. 12.

This is the sort of detail, added to more minute description, which we want in this national institution. In this department of Roman antiquities we recognise some old acquaintances; amongst them the curious volute, ornamented with leaves, engraved in the *Builder* (see "Antiquities found near the Tower Postern"), and some fragments from Mr. Roach Smith's collection. Here is also the curious Roman sarcophagus found near the Holy Trinity Church, Minories, presented by the clergyman and churchwardens.

With this glance at the Roman antiquities, we pass on to the room marked "First Græco-Roman Saloon," in which are Olympic deities—Minerva, Apollo, Diana, Mercury, various votive tablets, &c. Another group is lettered "Mythological Personages—Olympic Deities." How wonderfully beautiful is the head Diana, and fine the contrast between that and the splendid busts of Jupiter!

The subjects in the next room are divided, and marked "Subjects from Common Life." In this division is the Quoit Thrower, &c. "Historical Personages,"—Homer, Diogenes, &c.—"Real Personages,"—Demosthenes, &c.

In the next room of Greek antiquities are "The Heroes,"—Hercules, &c.—"Muses, Heroes, and Heroines." Here are Castor and Pollux, &c. Another group is headed "Asiatic and Mysic Subjects." On the other side are mythological personages of the Dionysiac Cycle, where are figures of Bacchus and Satyrs.

It will be seen by these hasty notes how very much the interest of these magnificent works of ancient art is increased by the new description and classified arrangement; and we hope that the principle will be still further carried out in this and other parts of the Museum.

## "GOTHIC AND CLASSIC."

I AM pleased to find that your correspondent "T. G." (p. 81) has favoured us with an explanation of his communication in the *Builder* of the 10th ultimo. It was much to be desired, for I had carefully read and reread his letter in question, to-day and discover whether its author had cast even one favourable glance upon the Gothic style, but not so much as the shadow of a "wink" could I perceive.

It is quite true that a building should be expressive of its purpose; that we should not be liable to mistake a church for a mill, or an "Exeter-hub" for a theatre; but, are the principles of Gothic architecture so narrow and confined as to be only applicable to a certain class of buildings? Had we not been accustomed to see our civil structures, our homes, and even our furniture, modelled after Classic forms, the veriest loiterer upon the threshold of art would never have mistaken a manor-house for a college, or have failed to perceive that although the *principles* of a style may prevail in all classes of buildings (in jail, theatre, mansion, and church alike), it is the *application* of those principles to characteristic individual features

which enables him to distinguish a palace from a bank, or a museum from a penitentiary.

I am really at a loss to comprehend in what school "T. G.'s" knowledge of Gothic was gleaned, when he describes it as "ignoring the use of materials to which not a little of the advancement of the present which is attributable," and as "a style of stone and wood." Can it be possible that your correspondent has never seen or heard of the *ironwork* which surrounds the tomb of a certain queen in Westminster Abbey? Have the numerous hinges, so exquisitely designed and so beautifully wrought, which cover the otherwise plain doors of the thirteenth and fourteenth centuries with a tracery of iron, escaped his observation? Does not the lead work of many a cathedral, the inlaid "brasses" upon the floors, and the numerous works in silver and gold, prove that the same principles which formed the groundwork of a structure in "stone and wood," would as readily and as easily have formed the basis of a cathedral in lead or silver, had these materials been more appropriate. By no means necessarily follows that because a column of iron 2 inches in diameter can support the same weight as a stone column ten or twenty times the size, therefore it is more suited to columnar purposes. The Great Architect might have given us the spring of the grasshopper, or made our bone as tough as adamant; but yet who will venture to assert that either the one or the other would have been an improvement. But even granting that stone and wood are the only materials the Gothic architect can work in, it has yet to be proved that there exist other materials in every respect as suitable for building purposes.

All "T. G.'s" remarks on the introduction of colour at the expense of beauty of outline I fully agree with, but *beauty of form*, it is to be remembered, is not confined to *outline*, and may often be produced by colour when other means are unattainable. I am pleased to find, too, that this gentleman has discovered that Gothic architecture has something more than what he enumerated as its components in his former letter, and that *traceried windows and pointed arches* are now added to the "stock in trade" which he was pleased to afford to "one-branch hands." But still, with all due deference, I assert that a building may be Gothic and yet possess none of these features,—that, in fine, a mighty style like this is independent of the characteristics of a time or a locality, be they "hoodwinked" or "traceried" windows, "buttresses" or "pinnacles," panelled towers, or lofty spires. I believe, and sincerely hope, in spite of the opposition of the champions of the "Classic," that a style will grow upon the hitherto but little understood of the principles of the Medieval style, as different as that of the fourteenth from that of the twelfth century, and as conformable to the progress of invention. I ask,—would such a style be *Medieval*? Would not such a style be *Gothic*? For who amongst us will presume, for instance, to tether down to a time or people or creed, such forms as the trefoil and the quatrefoil? Shall we leave off twisting our capitals with oak leaves, or stamping our tombstones with the cross? Shall we fail to fix the slope of our roof with due regard to the elements—the wind, and the rain, and the snow? or refuse to accept with thankfulness such lessons as the ivy and the vine, the hawthorn and the shamrock, teach us, because others have done the same? Rather let us, in humbleness of heart and singleness of purpose, read more diligently that volume of Nature which lies open before us, and we shall then more readily understand the constitution of the fine art which we profess, and more easily comprehend the studies of the Medieval architect as he sings to us from the dusky past,—

"The book I read is Nature's;  
Her simple truths appear;  
And, though she change her features,  
Her dictates still are clear."

And here, sir, I should have laid down my pen but for the closing observations of the first paragraph in the last letter of "T. G." Really, one would imagine from the tenor of his remarks, that Gothic architecture was utterly dependent upon aisles and chancels, and chapels and transepts, and all the *abettors* of spaciousness and sedilia. His argument, therefore, is virtually, after all, what I believe most of the arguments to be which are nominally anti-Gothic, not against the *style*, but an ultra-Protestant outcry against certain *revived customs and church arrangements*, yelped "Tractarian." I delight as much as "T. G." in the "purity" of the Protestant church, but this purity I must believe to be comparative, for I equally believe that no individual church or sect can *here* be pure. Perfection in religion or art is in this world unattainable. Progression and retrogression form the history of both the one and the other, and reforms and revolutions mark the changes from the backward to the forward, and from the forward to the backward step. It behoves us, then, to consider well the direction in which we are moving,—whether we

are walking in the straight course of wise and honest men, or imitating the crab, by going backwards: if the former, let us pursue it boldly, and with a pitying eye for all those who would have us turn aside; but, if the latter is our case, then let us quickly retrace our steps, endeavouring more and more to restore that likeness within us which has become so obscure by the accumulation of sin; and, with more faith, more hope, more love, exercise a deeper sympathy with all the glorious creations of the Great Good, and we shall find our architecture will reflect, as in a glass, the image of this likeness, and, endowed with the life of the inner man, approach more nearly the excellence of those works which God himself pronounced to be so "very good." E. W. GODWIN.

## PROPOSED MEMORIAL TO THE LATE JOHN BRITTON.

THE subscription at the Institute of Architects is making good progress towards the amount contemplated, 100*l.*, and the committee have determined that their tribute shall take the shape of an incised brass plate in Salisbury Cathedral, the dean and chapter having readily consented to allow it to be set up there. Some of Mr. Britton's friends are anxious, as we have already mentioned, to give the memorial a more important character, and Mr. Tito, F.R.S.; Mr. Alderman Cabit, Mr. Charles Hill, F.S.A.; Mr. Alderman Proctor, of Bristol, and others, have signified their desire to subscribe for such a purpose, for which about 300*l.* it is said, would be required. The Institution committee have expressed by a resolution their willingness to allow their incised brass to be combined with this restoration, if it can be effected, and to contribute towards it whatever might remain from their subscription, after paying for the plate. As a centre is needed, so that the good desires of the friends of Mr. Britton may be realised, we venture to state that communications on the subject may be addressed to Nathaniel Gould, esq. No. 4, Tavistock-square.

## CHURCH-BUILDING NEWS.

**Broxbourne (Herts).—**The fine Perpendicular church of Broxbourne has been restored externally, and is now going to be restored and thoroughly restored internally, at an expense of about 1,500*l.* under the directions of Mr. Joseph Clarke. It was built about ninety years before the Reformation, though leave seems to have been given to a Sir William Say to erect a chancel on the north side; the following inscription running round the parapet:—"Pray for the welfare of Sir William Say, Knight, which founded this chapel in honor of the Trinity,—the year of our Lord God, 1577." The church has been much mutilated by the insertion of large and cumbersome galleries. These will be removed and the whole of the stonework restored, and the church handsomely seated. Mr. Bosanquet, of Broxbourne, will at the same time restore the chancel, and Admiral O'Brien the Say Chapel, both acting on the architect's plans and advice. It is a good specimen of Perpendicular work, and will be a very fine church when completed. The parish are much interested in the work, and assist heartily in the exertions of the vicar and churchwarden.

**Romsey.—**The new cemetery was consecrated on the 13th instant, by the Bishop of Winchester. The architect under whose superintendence and designs the cemetery has been carried out is Mr. W. E. Lower, of London.

**Sherborne.—**It has been discovered that the dry rot has set in in the joists which support the flooring of the north transept of Sherborne church, and that already an expense of nearly 50*l.* has been occasioned by it. The work of restoring the chancel is proceeding. The reinstating of the groined ceiling of the choir has been completed, and the groined ceiling of the south aisle is nearly done. The mode of proceeding, says the *Sherborne Journal*, was, first to raise large balks of timber to the chancel windows, and to pass them through the building from sill to sill; these timbers were bolted together outside by cross pieces, and when these were keyed-up, the building was firmly and securely "boxed." On these timbers strong centring was placed, and a platform erected for the workmen, who, having now reached the roof, proceeded to underpin each rib of the groin, and then to take out the panelling piece by piece. All the ribs of the choir ceiling have been taken out and raised from 8 to 10 inches; the whole of the panelling, which consisted of Tufa stone, has been removed and replaced by a rich warm-coloured Ham-hill stone, and thus, bit by bit, the whole roof has been taken down, and either re-erected or rebuilt. In the aisles the walls have been forced outwards by the decay of the heavy timbers of the roofs, the ends of which no longer rested on the walls, but pressed against them. The inclination is inconsiderable, and they have



settled firmly, and to adapt the roof to their position, wedges of slate and cement in the joints of the ribs are said to suffice. The cause of the outward disposition of the wall having been discovered, a recurrence of it has been guarded against. The buttresses of the south aisle have been rebuilt, with 6 inches greater projection. The whole of the flying buttresses either have been, or will be taken down, and reconstructed of large blocks of Ham-hill stone. Both the north and south doorways, and the south and north aisle windows have been reinstated. It will, therefore, be seen that a large portion of the works affecting the security of the building has been accomplished. Still these remain works considered amply sufficient to occupy the next twenty months. Mr. Digby went over the works lately, and is said to have been satisfied with their progress.

**Wesleigh.**—We recently mentioned the erection of a window in Westleigh church, near Bideford, Devonshire. Another has been put up in the same church, by Mr. Warrington, of London, being a memorial window, consisting of three lights, also perpendicular in character, to the young and only son of Mrs. Cleland, of Topley-park, Wesleigh, who lost his life while serving with the army in the late Crimean campaign. The window is one of large dimensions, occupies the east end of the north aisle, and contains subjects from the life of David. The entire gable was taken down and rebuilt, and the new window of stone inserted from the design and under the direction of Mr. Arthur Billing, architect.

**Rochdale.**—The third contract for the restoration of Rochdale parish church has just been completed, including a new roof on the nave, and the rebuilding of the clerestory walls. The galleries on the south and west sides have been taken down, but it was thought necessary to build a smaller gallery at the west end. Further works are contemplated, for which the plans have been prepared, by Mr. Joseph Clarke, the judicious course having been adopted by the committee of settling the plans for the entire restoration, and then each year completing a portion as the funds permit.

**Dunceaster.**—The design for the memorial windows to the Elston and Sanders family, by Mons. T. B. Caproniere, Brussels, has just been completed. It represents remarkable scenes of Scripture history. The memorials will occupy two aisle windows at the west end. Each light contains two medallions, with six subjects for each window. The first represents the creation of man—the Creator meeting man in the garden—his expulsion—and the death of Abel, as showing the hereditary nature of sin. The second portrays the first destruction of Jerusalem and the Temple, with the captivity—Daniel and his companions—Nebuchadnezzar's dream—Shadrach, Meshach, and Abednego—the return to the promised land—and the rebuilding of the Temple.

#### PROVINCIAL NEWS.

**Norwich.**—The Free Library was opened on Monday last week to all the citizens. The expenditure, either actual or estimated, has been as follows:—The site, including house, £850; amount of contract, 3,098; estimated extras, 957; extras for stone pillars in lieu of brick, 70; cost of temporary cellar, 251; estimated cost of upper story, 700; cost of gas fittings, 120; total, 5,958. Including book-shelves, stoves, and furniture, the expenditure will be about 6,500. Sir Samuel Sigmond advanced 4,000, to the council in order to expedite the erection of the building. Mr. Bonest, the city surveyor, was the architect for the new building, and Mr. Worman the contractor. The building is in the Italian style. There has been an erroneous impression among the citizens, says the *Norfolk Chronicle*, that the whole building is for the Free Library; but it includes accommodation for the Museum, Literary Institution, School of Art, and a public lecture-room.

**Bedford.**—The following were the tenders to erect a new lunatic asylum for the counties of Bedford, Hertford, and Huntingdon. The quantities were supplied:—

Jeeves, Hitchin	£73,786	4	6
Rorrell, Manchester	64,909	0	0
Myers, Lambeth	64,164	0	0
Parker, Thrapston	58,742	0	0
Wheatley, York	58,175	0	0
Shafer, York	58,148	0	0
Ferguson and Allen, Nottingham	57,875	10	0
Dennis, Islington	57,050	15	5
Kirk and Parry, Sleaford	53,909	6	3
Webster, Boston	53,626	11	11
Huddleston, Lincoln	50,800	16	24

The tender of Mr. Webster, of Boston, was accepted, and it is expected that the works will shortly be commenced. Mr. George Fowler Jones is the architect.

**Chatham.**—The buildings and improvements now in progress at the dockyard will involve an outlay of

upwards of 100,000. Among these may be mentioned the lengthening No. 2 dock 160 feet, by Messrs. J. and C. Rigby. When completed this dock will be 360 feet in length. No. 7 slip is also being lengthened 60 feet, and the iron roof carried the same distance. Both these docks are of granite, laid on beds of concrete. Messrs. Ford, of Rochester, are erecting a large police-station near the saw-mills; the same firm have just completed a supplying kiln for steeping timber. A workshop, 240 feet in length, has been built for the cordage, and close to this is a range of new buildings for cement mills. The improvement of Chatham Dockyard by convict labour will cost, it is estimated, 160,000.

**Thursall.**—At a recent meeting of the local Board of Health, a resolution was entertained, upon the recommendation of Mr. Robinson, architect for the Town hall, to the effect that the clerk give Mr. Wilkinson, contractor, formal notice that the Board would, under the terms of the contract, take the Townhall out of his hands, and proceed to complete it, in consequence of his having failed to carry out the contract.

**Bristol.**—The building in course of erection for the use of the Academy of Fine Arts and the School of Art, approaches completion. It is said to differ in character from any structure in the locality. An exhibition of local and metropolitan art is to be held at the new rooms in September next.—The foundation-stone of parochial schools for the parish of St. Nicholas with St. Leonards was laid on Thursday last week. The schools, when completed, will accommodate 120 infants, 54 boys, and 84 girls. The building will have an ornamental blank front, in the Italian style of architecture, towards Back-street; the boys' school being lighted from the roof, while the girls' and infants' schools will have windows facing the playground. The infant school-room will be 42 feet by 22 feet, and 18 feet high; and the boys' and girls' schools 41 feet 6 inches, by 18 feet and 14 feet high. There will be a residence for the mistress. Messrs. Foster and Wood are the architects, and Mr. Samuel Bowden the contractor. The site cost about 700, and the contract for the building amounts to 1,800.

**Pontypool.**—Preparations are going forward for the erection of a new building for the branch of the West of England and South Wales Bank at Pontypool. The foundations are being dug in a field adjoining the Townhall.

**Tamworth.**—The building committee of the board of guardians of the Tamworth Poor-law Union, on Saturday week, received tenders for the erection of a new workhouse, according to plans and specifications of Mr. Nicholls, architect, of West Bromwich. The lowest tender was from Mr. Parnel, builder, Rugby, 4,473. The other tenders varied from 4,545, to upwards of 5,500. We have received complaints from competitors that they cannot get back their designs.

**Liverpool.**—At a recent meeting of the Town-council it was resolved, that the tender of Mr. John H. Mullens, for the erection of the proposed public buildings in Dale-street and Hatton-garden, for 20,201. 2s. 6d. (according to the plans of the surveyor) be accepted. The tender was the lowest of nine sent in.—It was also resolved to apply steam-power to the machinery of the chain-tester, which was now worked by hand. The cost of the new building will be about 5,000, and of the machinery from 1,400, to 1,600.

#### SCOTLAND.

**Improvements in Edinburgh.**—Masons were lately set to work in hewing stones on the Castle esplanade, for the new garrison place of worship. The new accommodation, according to the local *Post*, from which we adapt the present note, is to consist of an addition to the ancient chapel of St. Margaret's; the good taste of which arrangement is considered questionable. An angle in the Parliament House buildings has recently been completed, with a zig-zag piece of coarse wall, however, in proximity.—At Melbourne-place, George the Fourth's Bridge, the street will shortly be completed, adding another architectural feature to the old town: the houses are lofty, and are said to be of fine stone. Melbourne-place is completed by the extension to Victoria-street. An inlet from Victoria-terrace is completed by an arched gateway. Other buildings of one story have been erected westward from the terminal point of Melbourne-place. East of Fisher's close a noticeable building is set down: it is of three stories, with lantern window.—To the north of the quaint old house of Allan Ramsay, the poet, Lord Murray is constructing a promenade. A statue or group, by Steele, is to be placed in the centre of the walk, in honour of the author of "The Gentle Shepherd."—The interior work of the Old Greyfriars Church proceeds rather tardily: the seating, however, is

nearly finished. All the windows are to be of stained glass, and commemorative of eminent persons, the gift of the friends, relatives, and admirers of the deceased. Lord Brougham, Principal Lee, and others, contributing memorials of this kind. The oriel window is completed, embodying in its several tableaux scenes from Scripture—as the sacrifice of Isaac. With the exception of a pigmy window above, which is of stained glass, none of the others are put up. The vestry is constructed aloft, and will be approached by a stair from the outer entrance, an expedient which leaves more accommodation within the church.

**Perth.**—The new Commercial Bank at the north end of Princes-street, Perth, is now ready to be roofed in. The building is in the Italian style. The Free Territorial Church, South-street, is nearly completed. Though plain in design exteriorly, the edifice, according to the *Constitutional*, is superior in point of architecture to the other Free Churches in the town. Preparations are being made for erecting a row of villas on the Glovers' lands at St. Leonards, on the north side of Craigie Burn. A macadamised road leading to the villas has already been constructed.—Workmen are excavating the foundation for the erection of the new wing and other additional buildings at the General Prison. The contractor is Mr. David Rae, of Edinburgh, and his estimate for the work appears, from the report just issued by the General Board of Directors of Prisons in Scotland, to be 27,397.

#### COMPETITIONS.

**Wellingborough Cemetery.**—A meeting of the Burial Board of the Wellingborough New Cemetery was held on Tuesday, the 10th inst. for the purpose of finally considering and deciding upon the designs for chapels, lodge, &c. which had been sent in by various architects in answer to advertisements which appeared in the public journals. The designs bearing the motto "Nisi Dominus Frustra" were (we are told) unanimously adopted, and the successful competitor was found to be Mr. E. F. Law, of Northampton, who has received a commission to prepare the necessary drawings and specifications for carrying out the buildings.

**Chatham Workhouse.**—In this case there were nineteen competitors. The design by Messrs. Frederick Peck and E. W. Stephens, of Birmingham, has been selected as the best, and that of Mr. E. Holmes, also of Birmingham, as the second best.

**Worcester Cemetery.**—About fifty designs, we are told, have been sent in.

**Bromsgrove Cemetery.**—Eight designs for erecting a lodge, &c. and for laying out the new burial-ground, have been received, the estimates varying from near 600, to 1,900. Five of the more expensive plans were set aside, leaving the other three to be decided on. The Board at length decided upon accepting the plan submitted by Mr. C. H. Cook, of London, whose estimate was 5754. A competitor states that when he sent in his drawings, he received by return of post a printed circular with the vicar's name at the end, particularly requesting a subscription towards the funds for restoring the church.

#### ACCIDENTS CONNECTED WITH BUILDINGS.

**Huddersfield.**—At the theatre, in Huddersfield, while Mr. Cobden was speaking last week at a political meeting, a portion of one of the side galleries fell, precipitating about twenty persons, along with the beams, &c. on the heads of those beneath the gallery. Great confusion ensued, and there was a fear of greater mischief but panic; but the meeting was dispersed without further accident.

**Liverpool.**—On Saturday last five men were at work at a house in process of erection in Netherfield-road North, when the portion of the building on which they were engaged fell down, bringing along with it the scaffolding and four of the men, who were partially buried amongst the bricks and timber, and were severely injured. The fifth workman perceived the danger in time to spring upon two firm joists, and thus succeeded in saving himself. One of the men was so buried amongst the bricks, which wedged him in on every side, that it took half an hour to release him, and in a few minutes afterwards the wall fell down. The house was to have been opened as a public-house. "Great blame," says the *Albion*, "attaches to the owner, the builder, and, if we are correctly informed, to the building surveyor, inasmuch as the house, though of unusually large dimensions, and of three stories in height, had no foundation, being built immediately on the soft soil, while the outside wall, instead of being a 14-inch, was only a 9-inch wall. We understand that another house, in the same neighbourhood, also came partially down on Saturday."

**Edinburgh.**—An accident took place, on Wednesday in last week, at the Caledonian Distillery, Haymarket, in consequence of which one life was lost,



several persons were injured, and considerable damage was done to property. An addition to this extensive distillery was in course of being made by the erection of a malt barn about 300 feet long by 75 feet in breadth, and four stories in height. An iron roof was nearly finished, part of the supporters of which were pillars rising from the ground. Simultaneously the floors were being laid upon iron girders and brick arches, supported in part by the same pillars. The building was therefore to be fire-proof in every story. About a third part of the work of building the brick arches had been completed, when, suddenly, something was heard to snap about the roof. Immediately the whole covering, and a great part of the internal structure, gave way in a series of crashes, and in a few moments there was little left except the exterior of the building, and a mass of ruins inside. About thirty or forty men were at work within the building, but they all escaped with life, except one man, who was struck on the head by an iron beam, and almost instantly expired.

**Atglin (Liverpool).**—On Thursday week the metal bridge crossing the Limerick and Fyones Railway at Atglin fell in, completely blocking up the line. The first train was within fifteen minutes of being due at the moment the accident occurred, but it was fortunately stopped, and 100 workmen were set at once to clear away the rubbish. The loss will fall on Mr. Dargan, the contractor, and the expense of replacement, it is said, will be heavy. Fortunately no life was lost.

#### NEW SCHOOLS OF ST. THOMAS CHARTERHOUSE.

On the 19th, these schools, situated in Golden-lane, St. Luke's, and commenced in May last, were formally opened by H.R.H. Prince Albert, who spoke admirably and with great feeling on the occasion. Some effect is obtained in the building by the alternate use of red, black, and buff-colored bricks. On the ground story is the infant school, which is 66 feet by 29 feet, and 13 feet in height, to which is attached a well-paved and airy playground. The girls' school, on the first floor, is of the same dimensions as the infant school below, and has leading from it a lecture-room 28 feet by 14 feet. The boys' school is on the top story, and is 67 feet by 30 feet, and 13 feet high at the sides, and 17 feet in the centre. The lecture-room attached to the boys' school is of the same dimensions as that on the first floor. There is a basement story, containing kitchen, scullery, &c. and a heating apparatus. The kitchens are constructed to accommodate 264 boys and a similar number of girls. There are also desks in the galleries for 372 infants, thus giving ample accommodation for 900 children. All the rooms are lighted with gas, which renders them very suitable for evening classes for adults, or those whose occupations prevent their attendance during the day-time. The total cost of building, fittings, &c. with 2,200*l.* expended in the purchase of the site and the playground, was 8,452*l.* The building was designed and constructed by Mr. Hesketh, the architect, who constructed the other schools of the district, which, with those just completed, are capable of accommodating 2,500 pupils at one time.

#### ON RECENT IMPROVEMENTS IN THE MANUFACTURE OF IRON.

A REPORT was read lately to the Fellows of the Chemical Society, by Mr. Abel, director of the chemical establishment of the War Department, on the above subject.

The first portion of the report was devoted to a consideration of proposals relating to the construction of the blast furnace, the application of the blast, the mixture of ores, &c. with the view to ensure uniformity in the working of the furnaces; the preparation and state of division of the ore, and its mixture with fuel and fluxes; the economisation of fuel and heat; and the description of fuel employed. The last was considered to be a subject of much interest from the circumstance that the very considerable iron resources of Ireland might be expected to rise to great importance, if the application of pest in one form or other, as the means of reducing and refining the metal, proved as successful as was anticipated by numerous persons, whose attention had been devoted to the subject.

A review was next taken of the numerous plans proposed for effecting the reduction and purification of the metal in one continuous operation, none of which were considered as likely to compete successfully with the present system of iron smelting. Allusion was also made to the system of producing refined iron or steel direct from the ore in the United States, in the so-called bloomery forges.

The second portion of the report related to the application of other agents than those in general use in the manufacture of iron.

After an examination into numerous proposals for

improving the ordinary refining and puddling processes, patents were noticed in which water was made an agent in the purification or decarburization of the metal, by coating its surface, when in a divided condition and prior to its final treatment, with a covering of oxide of iron.

Recent patents relating to the production of steel from refined or wrought iron by fusion and cementation, with the employment of particular cementing materials and fluxes, and of contrivances for rendering the cementing operation a continuous one, were next noticed, and this led to the discussion of the several patents brought out by Mr. Bessemer for the production of steel and malleable iron. Other patents, such as those of Mr. Martin, Mr. Parry, and Messrs. Lea and Armitage, bearing upon the same principle, were described, and notice was taken of the effects of this particular mode of treatment upon iron. It was held that the results of experiments with Mr. Bessemer's process, and of the chemical examination of his products, had not served to bear out the statements made by him in his paper read before the British Association last year.

The report concluded by pointing out the great extent to which the puddling process depended upon the skill and industry of the workmen, and by showing that this was sufficient reason to lead all interested in iron manufacture to cherish the hope that the continued exertions of Mr. Bessemer and others who are now actively engaged on the subject, might lead to the successful application of the principle upon which was based the process which had excited such general attention, so that the prophecy of Mr. Nasmyth, that it would lead to a new era in a most important branch of our manufactures, might ultimately be fulfilled.\*

#### SINGULAR PRESERVATION OF THE TOWER OF LONDON IN 1691.

WE are indebted for the following interesting extract to Mr. Lemon, the editor of "The Calendar of State Papers":—

"9 July, 1691.—Her Majesty in Council having received an account that by the fall of part of one of the floors this morning in the White Tower, where the powder was lodged, about two thousand barrels are fallen through and lie upon the next floor, and that the keeping of so great a quantity of powder as at present is extremely dangerous to the Tower and City of London, Her Majesty is pleased to order the Rt. Honble. Sir Henry Goodricke, Knt. and Bart. Lieutenant General, and the rest of the principal officers of the Ordnance, to consider of a fit place or places where the stores of powder may be conveniently lodged, as well for the security thereof, as of the Tower and City of London."

The fact of a large flooring at once giving way, and 2,000 barrels of powder being precipitated through to the floor below, without the least spark of fire occurring, is a most wonderful instance of preservation.

#### THE GOVERNMENT OFFICES COMPETITION.

DEAR MR. EDITOR,—Pray put your head into Westminster-Hall, and see the official doings there for the forthcoming Exhibition of Designs. The hall is being divided into small compartments, which some liken to sheep-pens, and some to eating-house boxes, but which will, I fear, considering the darkness of the hall, prove very slaughter-houses to the unfortunate drawings which may be committed to them. Pray give the officials a jog, for Sir Benjamin Hall can have no wish to do otherwise than exhibit the designs well and conveniently.

NEMO.

\* \* \* We understand that 192 British competitors have sent in designs: those from abroad have yet to be received. Some of the packages include drawings for the three competitions, some for two of them, so that the number of designs is of course greater than the number of competitors.

#### WREN'S MODEL OF ST. PAUL'S.

I PERCEIVE that some attention is at length being called to the model of Sir C. Wren's first design for St. Paul's, now decaying from want of care; little known, from its secluded position, and no way serviceable, except as one of the twopenny sights in our great show cathedral.

But it is surprising the architectural world does not seek for more than its restoration and improved position. It should be made known to the many who may have no opportunity of thoroughly inspecting it in its show-room; nor can I doubt but the publication of a quarto volume, fully illustrating it, with plan, elevations, sections, and views, would repay

\* A pretty full report of the whole will be found in the *Engineer's Journal*.

the time and outlay of any competent person who might undertake it.

In Elmes's "Life of Wren" there is a plan of the model—and a great provocative it is to the desire for more. In the hope that this suggestion may somewhat assist in promoting a result alike beneficial to the fame of Wren and the cause of original design—I am,

EX-ARCHITECT.

#### TENDERS FOR DRAIN-PIPES.

HAVING regularly taken the *Builder* from the commencement of its publication, I have always considered it a proper channel for promoting the interest of everything connected with the building trade, and as far as possible exposing any abuses that were detrimental to its interests. Allow me, therefore, to call your attention to a practice which ought to be exposed. A few days since I inspected a specification for work to be done as drainage, at the east end of London, and to my surprise, there found it stipulated that the pipes to be used were to be of Messrs. —'s manufacture. Whether or not the insertion of such a stipulation was founded upon any peculiar ground, I am unable to say, but if not, it was the most gratuitous injury to the engineer's employer that can well be imagined. Competition was quite out of the question, and I refused to tender. Had I obtained the contract, I was bound to purchase of the parties named, without reference to price, which at the present moment varies from 10 to 50 per cent. according to the situation of the purchaser, as to freedom to purchase, and I have seen instances where pipes have been used that would have been rejected if from any other maker.

A CONTRACTOR.

#### RECENT BUILDING PATENTS.\*

1755. CHARLES BURTON, Regent-street, London. —*Warning Houses and other Buildings.* Dated 24th July, 1856.—In carrying out this invention, air is led by a shaft from the top of the house or other building to a chamber in the basement, in which is a fire surrounded by concave or other reflectors, so arranged as to concentrate the heat of the fire to warm the air, and from this chamber the warmed air is conducted by turned pipes to the rooms or other places to be warmed. The air is forced down the shaft to the warming-chamber by means of a screw or other instrument (in the shaft), which is put in motion by the force of the wind. In order to regulate the amount of heated air discharged into the room or other place, a valve is employed, which is opened more or less by a self-acting apparatus, consisting of an arrangement of levers put in motion by the expansion and contraction of a bar of metal or other material exposed to the temperature of the room or place.

1060. W. GREGORY.—*An Improvement in the Construction of Roofing Tiles.* Dated 5th May, 1856.—The patentee forms in the arched lapping piece of each tile (except the eave tiles) a recess or cup to receive the ends of the arched lip of the adjoining tile. This recess or cup he makes of a depth equal to the width of lap required for two adjoining rows, and the workman or tiler is thus provided with a gauge for fitting the tiles together. He also forms recesses at the opposite edges of the ridge tiles, so that they will completely overlap the upper edge of the top row of tiles at the opposite sides of the ridge, and produce a water-tight joint, which may, when desirable, be further secured by a thin line of mortar or cement.

1777. JOSEPH PLATT, Andlem, Cheshire. —*Door Knockers.* Dated 26th July, 1856.—This invention consists in peculiar mechanical arrangements, by means of which the knocker is operated by a suitable handle on the outside of the door, causing a hammer or knocker to strike on the inside. The handles may be variously constructed to turn, or to pull out, or push inwards; and the hammer, knocker, or other alarm may be connected with the outside handle by springs, ratchet wheels, or other like contrivances.—*Not proceeded with.*

1172. J. J. MEYER.—*Improvements in Machinery for Mortising, Tenoning, Rounding, Sweep and Straight Moulding, Boring, Grooving, and Milling.* Dated 17th May, 1856.—These relate to certain combinations of parts constituting a machine in which the operations of mortising, tenoning, rounding, sweep and straight moulding, boring, grooving, and milling may all be performed, instead of employing separate machines for these purposes, as heretofore. And a feature consists in an improved mode of forming the following cutting tools:—the mortising chisel, the tenon cutters, the cross revolving moulding cutter, the mitre wheel or cutter, and the grooving cutter.

977. J. BARBOUR.—*Improvements in Sawing Apparatus.* Dated 23rd April, 1856.—The saw blade to be used is made in the form of an endless belt, which is passed round two pulleys, and kept properly stretched by screw or other adjustment, by which the bearings of the two pulleys can be separated more or less.

1769. ROBERT STEWART, Glasgow.—*Cutting Stone and other Mineral Substances.* Dated 2nd July,

\* Gleaned from lists in the *Mechanics' Magazine*, the *Engineer*, &c.



1856.—According to one modification of the improved apparatus, a suitable sole or bed is laid down for the traverse upon it of a carriage carrying the cutting tools, the stone to be cut being placed beneath. The carriage is furnished with any convenient nunching bar of cutting tools, arranged in a line behind the other, and following each other in the cut. The cutting action is made to take place by raising and letting fall a bar, which is of considerable weight, and causes the cutting tool to forcibly strike the stone, and so effect an increment of the cut. The carriage may be moved forward by hand, by means of a suitable lever connection with the running wheels, or a self-acting feed motion may be employed. In some cases the carriage may be kept stationary during a number of strokes, so that the cut may be made vertically downwards on the side of the stone, or at any other part.

1805. GEORGE HOLCROFT, Manchester, and PETER JOHNSON, Wigan.—*Improvements in the Manufacture of Cement, and in the Application of a known Material to Cementing Purposes.* Dated 31st July, 1856.—This invention consists in manufacturing cement of sulphur combined with sand, gypsum, or any other suitable material; also, in the application of sulphur alone for cementing the joints of stones, or as a substitute for cement when used for any other purpose.

1870. WILLIAM GORSE, Birmingham.—*Improved Door Fastener.* A communication. Dated 8th August, 1856.—This door fastener consists of a plate of metal inserted between the door-post and the edge of the door, the said plate being secured to the door-post by the closing of the door. The plate carries at its projecting end a plate, arm, or bolt, which, being brought against the door, prevents the said door from being opened.

1855. JOHN CARTLAND, Birmingham.—*Improved Door Spring.* Dated 11th August, 1856.—This invention consists essentially of a helical or coiled spring of steel, iron, brass, or other wire, the said spring being acted upon in such a manner, by its connection with the door or door-hinge, that the said spring shall be coiled or uncoiled at the opening of the door. The elastic force of the spring is exerted by a winding action, instead of a lengthening or shortening action, as is usual with helical door-springs.

### Books Received.

*Practical Suggestions for relieving the Overcrowded Thoroughfares of London, securing improved Means of Locomotion, directing the Sewage from the Thames, and appropriating it to Agricultural Use, &c.* By JOSEPH MITCHELL, C.E. Stanford, Charing-cross.

THESE practical suggestions assume the form of a letter to Sir Benjamin Hall, as chief commissioner of the Board of Works. The principal feature in the vast scheme proposed is the formation of a great street or road, leading in a straight line, or nearly so, from Kensington-gardens to Shoreditch Station, with a metropolitan railway adjoining it, in a sunk track, and a main sewer under the railway, which latter it is proposed to unite on the north with the metropolitan railway already sanctioned by Parliament, and on the south with the South-Western and other lines, by a branch crossing Waterloo-bridge, on an iron way raised above the bridge. The proposed sewer, the projector remarks, would drain all London north of the line, and would be continued from Shoreditch along and near the Eastern Counties Railway, beyond the river Lea, where the sewage would meet that of the lower portion of the metropolis and that of the south side, as proposed by Mr. F. Foster and Mr. Bazalgette, and thence the whole be sent through the agricultural districts, and to the sea. Mr. Mitchell also proposes, in connection with his road scheme, the erection of a new palace in Kensington-gardens, to be partly devoted to the national collection of art-works, and partly as a residence for her Majesty. The line of street and roadway, he observes, would interfere with no public buildings of importance; it would pass chiefly through property of inferior value, except the north side of Grosvenor-street, and would pass by and cross the enclosures of several of the London squares. There would be 70 feet of carriage-way, with footpaths of 24 feet, on each side, or a width considerably greater than Regent-street, which is 60 to 64 feet wide, with footways of 18 and 21 feet. The construction of Regent-street, one-and-a-half mile in length, cost 1,533,582. The cost of the proposed new line of road, with a branch to the post-office, in all say four miles in length, is estimated proportionally at 4,089,552; or with additional width of street, railway, &c. 6,502,387. To which is added cost of railway, 1,976,830, and of new palace, &c. at Kensington, 1,500,000; or in all (not including three-and-a-half millions, for the main sewer and whole drain-

age), 9,978,717. The estimate of revenue is set down as follows:—Revenue of new street (ruled by known revenue of Regent-street, viz. 39,000), 97,500; to which add 10 per cent. for additional attraction and thoroughfare, 9,750; revenue from railways, 180,000; in all 287,250; being nearly 3 per cent. on 9,978,717. The sewage, if applied in irrigation, as at Edinburgh, would, it is estimated, yield a clear revenue of 472,500, or a profit of 262,500, to which the author adds 287,250, as estimated revenue from rents of new street and from railways, and remarks, that the 549,750, of revenue derivable from the whole of these improvements, would be about 5½ per cent. on the capital of 9,978,717, required, forgetting, however, that in this sum the three-and-a-half millions of first cost of the drainage is not included.

We have preferred thus occupying our limits with a condensed and brief abstract of Mr. Mitchell's scheme, without displacing anything by the insertion of any observations of our own, and will simply add, that even ten millions, if that sum would do it, might, as it seems to us, be better spent with the same end in view.

*The Art of Valuing Rents and Tillages.* Originally written by Mr. BAYLDON. Seventh edition, enlarged, by ROBERT BAKER, Valuer. London: Longman and Co.

"BAYLDON on Rents" has long been indispensable with all concerned in the valuation or the management of land, and this last edition contains much that is new, especially with reference to the principle of Michaelmas entries and the valuation of property for assessment. It is the best existing book of the kind.

Mr. Baker, in his preface, urges that it daily becomes more and more imperative upon landed proprietors to give due encouragement to their tenants, by affording them the utmost security for the investment of their capital, "not alone by removing such absurd restrictions in leases that hitherto have existed, but by giving security, by valuation, for unexhausted improvements."

He proposes the abolition of the yearly tenancy altogether, and the substitution of a lease for a term of one year, with clear clauses as to cropping and the mode of quitting.

### Miscellaneous.

DONCASTER NEW PARISH CHURCH.—A month or two ago it was found necessary, before proceeding with the tower, to appeal for an additional subscription of 10,000, the funds obtained by the first subscription, amounting to about 30,000, being exhausted. The amount subscribed has now reached the sum of 8,600. Although this is 1,400 short of the money required for the completion of the church, it has been deemed sufficiently large by the building committee to warrant them in continuing the works of the church, which would otherwise have shortly been suspended. Arrangements have been made with Messrs. Warner for a new peal of bells, which will be cast under the direction of Mr. Denison. Mr. Dent has promised to supply a clock gratis for the tower. Mr. W. Foreman, of Surrey, has rebuilt the south chapel entirely at his own expense.

LONDON ATMOSPHERE.—What a destructive agent is the atmosphere of London! I observe that the Roman Catholic Church in St. George's-fields, built a few years ago by Pugin, is already wearing a most autumnal aspect: its foliage is rapidly decaying, and in a few more years its crockets and finials will be numbered with the things that have been, and we shall then be enabled to judge what will be the effect of a fourteenth-century building deprived of those interesting excrecences. Should they be equally disposed to crumble and fall off from the surface of the colossal structure in the same vicinity,—the Houses of Parliament,—we shall have a somewhat alarming bill to pay per annum for new crockets. A consideration of the destructive nature of London atmosphere should have some influence in deciding on the style and character of the future Government buildings.—ANTI-CORROSION.

ROTTING OF GUTTA-PERCHA UNDER GROUND.—An investigation has been made by Mr. E. Highton, into certain cases of decay in the gutta-percha covering of the underground wires of the British Electric Telegraph Company at Berkhamstead and elsewhere, which results in the discovery that the mycelium of a fungus which frequently grows on the dead roots of oak trees, and sometimes under hawthorn hedges, occasionally affects the gutta-percha covering telegraphic underground wires, fermenting and rotting the gutta-percha in spots where the fungus prevails, while immediately adjoining, no such decay appears. The cause of this occasional annoyance having been thus discovered, doubtless some mode of obviating it will soon be found.

LECTURES ON ART-EDUCATION AT LEEDS.—Mr. G. Jackson recently delivered two lectures before the members of the Leeds Mechanics' Institution and Literary Society, "On Art-Education." The lecturer commenced by asserting that no nation had ever excelled Great Britain in the development of the abstract mechanical sciences, and that it might as truly be said that no nation had done less to promote the national, social, and commercial importance of the arts. This could not be attributed to any want of talent, but it might rather be taken as a demonstration that the old proverb which said that two things could not be done at the same time would apply to nations as well as to individuals. Attention had begun to be directed to the importance of art, and to the national necessity of it being encouraged. It would, therefore, be his object to point out what constituted the elements of art, and how to impart a knowledge of art. Mr. Jackson's second lecture was devoted to the consideration of the necessity of the principles of art forming part of all systems of elementary education.

CRYSTAL PALACE DISTRICT GAS COMPANY.—At the third annual general meeting of this company, on 3rd inst. it was announced in the directors' report that during the last year the number of private consumers had largely increased, new railway stations had been lighted, and public lighting had been commenced throughout the district. In 1854 (half-year), the gas rental, it was stated, was 1,736. 16s. 11d.; for the entire year 1855, 5,078. 8s. 8d.; and in the year now passed, 1856, 6,537. 19s. 11d.; and it was estimated that the company are now in possession of a gas rental of nearly 8,000, per annum. The profits on the year amounted to 2,297. 8s. 1d. out of which a dividend was declared on the paid-up capital of the company at the rate of 5½ per cent. per annum, leaving a free balance to be carried to the profit of next year.

INDICATOR TILES.—Mr. B. Looker, jun. of Norton Pottery, Kingston-on-Thames, has forwarded to us specimens of some new "Indicator Tiles," which he has introduced as a suggestion for marking the new Postal Districts ("E C," "W C," &c.). They can be made of any size or shape, and in any description of earthenware. The specimens forwarded are composed of ordinary tile clay, and the letters are coloured with a permanent vitrified black. They are rather rough and imperfect, however, being the first he has made. They are 9 in. by 6 in. (the length of one and the depth of two bricks), for the facility of fixing in a wall, and can be produced and sold at something like 6d. each.

DUBLIN.—The foundation stone of the new church of St. Patrick, Celbridge, was laid on Sunday in week before last. The architect is Mr. J. J. McCarthy, and the design is Early Gothic. Mr. R. Farrell, of Dublin, builder, is the contractor. The site is at the rear of the present parish chapel. The new church will be 130 feet in length, and 60 feet in width. It will comprise nave and side aisles. At the end of the north aisle will be placed the chapel of the Sacrament, and at the termination of the north aisle will be erected the chapel of the Virgin. The great oriel window of the church will be a triplet of stained glass. Another end of the edifice will also have an illuminated window, the designs of each being commemorative of some great event of Gospel history. The building will be of solid limestone, with Gothic front and belfry. The interior will be completed with open woodwork roof, and with the usual Early Gothic decorations. The church of St. Catherine in Meath-street, now finished, and the church of St. Saviour in course of completion, were designed by the same architect.

THE SOCIETY OF ARTS' EXHIBITION OF INVENTIONS.—This exhibition is now open to the public, and will continue to be so till about the end of May. By next week the arrangements will be more matured, and the articles exhibited more numerous than at present, and we shall then take an opportunity of noting some of the more important and interesting features of the new exhibition.

GOVERNMENT ARTISANS AND EMIGRATION.—Upwards of 2,000 workmen in various departments of Woolwich Arsenal, having received notice to leave, in accordance with the reductions in the last army estimates, a memorial has been adopted at a large meeting of the men, and forwarded to Lord Palmerston, strongly recommended by the heads of the departments, praying the Government to grant a free passage for themselves and families to the Canadas, Australia, or elsewhere. The memorial, it is said, has received the favourable consideration of the War Office.

ENCAUSTIC TILES TURNING DULL.—Having the floor of a balcony of considerable length laid with Minton's tiles a few years ago, I find they become very dull at all times except when wet. Perhaps you, or some of your readers, could inform me if anything could be done in the way of glazing or varnishing them, so as to improve their appearance?—F. K.



**LIVERPOOL ARCHITECTURAL SOCIETY.**—The twelfth meeting of this body was held on Wednesday, the 18th, when the chair was taken by Mr. James Hay. Mr. Frank Howard read the paper of the evening, "A Description of Pickering Church, with reference to the Principles of Decoration."

**ST. HELEN'S, BISHOPSGATE.**—During the last few days a house, supposed to have been built in the reign of James I. adjoining to this interesting specimen of church architecture, which escaped the Great Fire of London, has been pulled down, by which means many points in the exterior of the south choir, which had been ruthlessly blocked up, have been brought to light. Amongst other discoveries, a window has been laid open, the greater part of the mullions and glazing of which remains entire, as they were covered over with plaster when the church was made the parish of the adjoining house. Several windows of Norman character have also been discovered.

**EXTENSIVE DRAINAGE WORKS IN NORWICH.**—The drainage of the northern part of Norwich was again discussed in the Local Board of Health, on Tuesday last week; the reports of the surveyor and of Mr. Donaldson being placed in the members' hands. From the surveyor's report it appears that with a view to the ultimate diversion of the whole of the sewage of the city from the river, he has so arranged the several lines of sewers as to secure but one outfall for the whole drainage of this northern district, at a spot most convenient for extending the sewer to an outfall beyond the limits of the city. The system of drainage consists of one main sewer, two collateral sewers, and twenty-nine branch sewers. The main sewer has a total length of 7,314 feet. The two collateral sewers are respectively 1,418 feet and 4,462 feet in length. From the main sewer there are nineteen branch sewers, in all 8,467 feet in length; from the first collateral sewer four branch sewers, 2,113 feet in length; and from the second collateral sewer six branch sewers, 2,911 feet in length. These works must be executed with borrowed money, to be repaid by instalments in thirty years, being a fraction over one penny in the pound on the immeasurable property in the city, or an additional half-penny rate in the half-year; each year lessening as the principal is paid off. Mr. Donaldson's report approves of the surveyor's plans, with the condition that the outfall be carried about 150 feet farther down the river. It recommends that the sewage be decolorized by the use of lime, on sanitary grounds, and also as a means of preventing the accumulation of sewage deposit in the river, although the sewage deposit will probably be sold at a price that will merely cover the cost of its production. The Paving Committee of the Board were authorised to advertise in the local press and the *Builder*, for tenders for the execution of the proposed works,—the Board at the same time reserving the right of further discussing the details.

**PAINTING ON CEMENT CONTAINING SEA-SAND.**—A correspondent, "G. E. R." asks for information as to how the salt in cement made with sea-sand can be prevented from destroying paint laid over the cement. This is just one of the forms of the difficult question how to obviate the unsightly stains on walls from salt contained in the lime or cement used in their formation, a question often treated of in our pages. If we understand our correspondent aright, what he desires to know is how to prevent the salt from injuring or destroying paint made of ordinary materials of the best kind, not merely how, by some new kind of paint, to subdue the salt, or prevent it from appearing on the surface.

**ILLUMINATED CLOCKS.**—Having read some letters in your paper about illuminated clock faces, it appears to me that the figures might be formed of gas-piping, which might be pierced for jets, and so become figures of fire at night.—**PARTHENON CLUB.**

**ARCHITECTURE AT SYDNEY.** The foundation-stone of a mansion to be erected at Ross Bay, near Sydney, New South Wales, for Mr. Daniel Cooper, speaker of the House of Assembly there, has been laid by the Governor-General, the Bishop of Sydney having said a prayer over the stone. The building is to cost 100,000*l.* of which sum, says a Sydney paper, the architect, Messrs. Hill and Mansfield, will have a share of 10,000*l.*

**MONUMENT FOR EDECOCK CHURCH.**—A monument, to the memory of the late Mrs. Cartwright, of Aynhoe, has just been executed by Mr. Grimsley, of Oxford, sculptor, from a design furnished by him. The monument, which is in Caen stone, is in the Decorated Gothic style of architecture, and consists of three niches: the large one in the centre is filled with the tablet, and in each of the other niches is the figure of an angel, moulded by Mr. Grimsley, sen. The monument, says the *Oxford Journal* in speaking of it, differs materially from those ordinarily executed, inasmuch as it is a happy combination of architecture and sculpture carried out so as to justify its occupying a high position as a work of art.

**GAS.**—The directors of the Southampton Gas Company have reduced the price of their gas, to 5*s.* a thousand cubic feet.—The Margate Gas Company have declined to accede to the demands made upon them and determined on at a recent meeting of gas consumers, namely, to charge 4*s.* 6*d.* per 1,000 feet instead of 6*s.* with a better supply and of better quality.

**THE LATE MR. PLAYFAIR, ARCHITECT.**—The *Edinburgh Courier* says,—"We have to record the death of the greatest of our northern architects—the man who, more than any other, has filled the Scottish capital with monuments of his genius. William Henry Playfair died on Thursday, 19th inst. after a long illness, which had for some years paralysed his limbs, and for the last day or two made him insensible to everything. Mr. Playfair was born in London in July, 1789. He came of no distinguished stock. His father was an architect of note in his day, although his reputation has long been obscured by the brighter eminence of his son; and his uncle was the celebrated mathematician and natural philosopher, Professor John Playfair. He had the advantage of being educated under the roof of the latter, at a time when Lord John Russell was not the only pupil of mark whom it sheltered. At a subsequent period he accompanied his uncle in that continental tour which occupied the closing years of the geologist's life."

**STRIKE OF MASONS NEAR SOUTHAMPTON.**—The large body of stonemasons employed at the works of the Victoria Hospital, Hamble, are under strike, and maintained by the General Society of the Trade, each man receiving 1*s.* a week. The men, according to the *Hampshire Advertiser*, desired to leave work on Saturdays one hour and a half earlier than usual, to enable them to get home to Southampton and other distant places; but with this the contractor stated that his contract did not permit him to comply.

**GUERNSEY HARBOUR WORKS.**—The contract for the new works at Guernsey Harbour, according to the *Jersey Times*, has been virtually assigned to Mr. Coulthard, whose tender was much lower than those of Messrs. Le Gros and Gallichan and the other competitors. "The doubt," says a Guernsey paper, "which has been entertained as to whether Mr. Coulthard understood his own business was entirely dissipated by an examination of his figures. It was found that, where labour or materials were estimated, these items were set down at higher figures than in the other tenders, and that the saving which enables him to tender so much below his competitors was to be effected by the modern appliances of mechanical science, which formed no part of the other plans."

**SCHOOL OF ART FOR READING.**—A public meeting was held in the Townhall, Reading, on Wednesday evening before last, for the purpose of receiving a report from the committee (appointed at a meeting held about three months back) of their proceedings in arranging the preliminaries necessary to the establishment of a Government School of Art in Reading. It was resolved unanimously that such a school be forthwith formed in Reading. The president, vice-president, treasurer, and committee, were then appointed.

**THE IRON TRADE IN SOUTH STAFFORDSHIRE.**—The trade here continues steady, and the idea of changing prices at the preliminary meeting has never been entertained. The reduction of the import duty on iron in America from 80 to 24 per cent. news of which has arrived, will, it is believed, have an important influence on the American demand, as it will amount in round numbers to 10*s.* per ton on finished iron. The reduced duties, however, do not come into operation till July.

**THE "TIME OF DAY."**—A correspondent, "G." suggests a revolution in time-telling, which, we agree with him in suspecting, is not very likely to be adopted,—namely, to make the hands stationary and the hours and minutes to pass by them with a regular and continuous movement, the figures being all upright and parallel. The immense advantage of the present method is, that the time can be inferred at a glance from the mere geometrical aspect of the clock-face intersected by its changing hands, and at distances even beyond those at which figures, however bold and distinct, can be readily seen. Our correspondent's object appears to be the obviation of the great weight of the hands in such a clock as the Westminster Palace one, and the prevention of any necessity for 7-inch jumps, such as the minute-hand will take. It is perhaps doubtful, however, whether the public would thank our correspondent even for this latter advantage, as the 7-inch jumps are likely to constitute a never-failing source of curiosity and interest, not only to country coaches, but to the Metropolitan themselves, and will far outvie the wonderful fact that every time the stone lion at Northumberland House, Charing-cross, hears St. Martin's strike one, he invariably wags his tail. The 7-inch jumps will be a real and *bona fide* wonder, that need not long be waited for by any one, when they are once set a-going.

**CARPET SWEEPER.**—The *Scientific American* describes a carpet-sweeping machine, exhibited at the fair of the American Institute in New York. It consists of a small box, in which there is a revolving fan that sucks up all the dust and dirt, and carries it into a small compartment containing water. The woollen fibres and larger particles are deposited in a drawer. The sweeping is done by pushing the box over the surface of the carpet by handles.

## [ADVERTISEMENT.]

MESSRS. CLARK AND CO.

15, Gate-street, Lincoln's-inn-fields.

GENTLEMEN,—After eight years' trial of your Patent Revolving Shutters, erected here, I can safely pronounce them most effectual in their action, and they have given me the utmost satisfaction.

I am, Gentlemen, yours truly,

GEO. DOWNE.

155, Leadenhall-street, August 7th, 1856.

## TENDERS

For erecting Cemetery Chapels, at Hleanor, Derbyshire. Mr. Benj. Wilson, Architect. Quantities supplied by the Architect:—

Thompson, Derby	£1,100 0 0
E. Oldenham, Marlow	1,005 0 0
J. Evans, Greenhill-lane (accepted)	1,060 0 0
C. C. and A. Dennetts, Nottingham	1,060 0 0

For building new Foundry, at Basingstoke, for Messrs. Wallis and Haslam. Quantities supplied by Mr. J. B. Mussellwhite, Architect:—

Nichols	£1,061 3 7½
Caley and Boardman	1,025 0 0
Prichard	988 10 0
Budden	617 0 0

## TO CORRESPONDENTS.

J. A. (if the receipt was not acknowledged the communication did not reach G. B. we said it dangerous to advise in private disputes on insufficient data. To recover, it would be necessary to prove a contract.—Anti-Corrosion.—G. B. we have already inserted two replies.—A Letter of Trash-dust.—W. W. B.—D. M.—T. L. D.—X. Y. (we do not know).—A Subscriber.—J. S.—M. and Co. L.—W. D. B. W. G. D. T. W.—F. H.—A. B.—A Provincial Architect.—T. G.—Competitor.—A Practical Man.—S. B. D.—E. P. D.—C. and B.—S. L.—B.—J. H.—J. P. (we are forced to decline).—J. H. P.—J. A. (the fault of the sewerer).—Books and Addresses.—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor." all other communications should be addressed to the Editors, and not to the Publisher.

## ADVERTISEMENTS.

**WANTED**, within two miles of the Post-office, an Eight or Ten Room HOUSE, with Garden, &c., or N.W. preferred. Long lease or low ground-rent; in part considered—a for which three plots of freehold building land at the West-end, are offered. Address, W. EASTGATE, 11, Grafton-street, London—quintus, N.W.

**AN Architect requires an ASSISTANT** in his office. A young man who has recently completed his studies would be preferred. Address, L. M. Office of "The Builder."

**CLERK WANTED.**—He must be a good draughtsman, well-versed in building accounts, and the ordinary duties of a surveyor's office. Address, post-paid, to Mr. CHARLES BRADLEY, Nottingham-street, St. Martin's Lane.

**CLERK OF WORKS.—WANTED IMMEDIATELY**, an experienced and practical CLERK of WORKS, for six months.—Apply, by letter, stating late engagements, references, and salary required, to Mr. C. C. GREEN, Architect, Beuningsmouth, near Poole.

**TO ARCHITECTURAL DRAUGHTSMEN.** **WANTED**, an ASSISTANT competent to undertake Coloured Drawings for Medals and Classic Metal Work. Terms, two guineas per week.—Address, H. P. Office of "The Builder."

**TO BUILDERS' FOREMEN.** **WANTED**, an experienced, active Man, as YARD FOREMAN, who is a Carpenter by trade.—Address, stating age, particulars, and salary required, to W. W. Office of "The Builder."

**WANTED**, immediately, in an Architect's office, in the country, where extensive engineering works are also carried on, a CLERK, perfectly conversant with the details of a civil service, to take the management under the direction of the principal. He should be qualified to design and make drawings, and to superintend the execution of the same, and Gothic architecture, and practically acquainted with construction. Also, a CLERK in the Engineering department, who can prepare and make finished and working drawings, and who has had practical experience in designing and constructing bridges in stone, iron, and timber, and who can make curves and sections, and complete the same. An liberal architectural clerk, possessing a knowledge of engineering works would be preferred, and a liberal salary, with a permanent appointment would be given for zealous services.—Applicants prepared to submit specimens of their work, and to furnish references, and to specify the nature of their former engagements, to write, stating name, age, whether married or single, and salary expected, to F. T. O. Office of "The Builder."

**TO JOINERS' MACHINE WORKERS.** **WANTED**, in a Builder's Establishment, a steady, industrious Man, accustomed to work turning and moulding machines, and competent to make his machine from a sketch, to Mr. DILLON, Scotch-lane. Only if by letter, state where last engaged and wages required.

**WANTED**, TWO JOBBING CARPENTERS and JOINERS, for a country; also a PLUMBER and GLAZIER, &c. None but good and steady workmen need apply.—Address, S. G. Post-office, Bedford-Walk.



# The Builder.

VOL. XV.—No. 739.

**A**LTHOUGH the question of architects' remuneration appears to be placed—so far as Government works are concerned—in a more promising state, by the conditions for the public offices competition, than it was left in by the Treasury, at the consummation of their treatment of Sir Charles Barry—by which he was made to forego a large proportion of the amount of his fair claims,—it cannot be held as at present adjusted satisfactorily,—having regard to professional interests, or to the national interests—which equally are involved in the question—and the cultivation and advancement of art. The Government has reverted to the principle of payment by a commission of 5 per cent.; but complaints reach us from the country, showing that—as it was feared would be the effect—rates of remuneration by other parties are offered, for which it must, before long, prove impossible to command the qualifications expected—much less those which the real duties of an architect require.

Where artists deal with the British Government, the case of Sir Charles Barry may show what is the minute precision in agreement which they must take care to have attended to, for their protection. The reader of Dickens's tale, who is puzzled to know what particular office of those about Whitehall and Downing-street, is the Circumlocution Office, should refresh himself with the papers on the case in question. He may be the successful competitor, employed at the rate of 5 per cent. upon the outlay, on the buildings now proposed; but, *no matter what* extra services not connected with the structural outlay, he may be called to render, he will be denied his rights, and told he has got to the wrong office. This is, we regret to say, the simple and necessary conclusion.

Now, it may save much trouble hereafter, if those architects whose designs are selected will consider what they have to guard against. In treating themselves fairly, they will take one step, at least, to serve the country also.

The case of Sir Charles Barry shows that an amount of miscellaneous service,—extending over twenty years,—to some ten thousand pounds in value,—including services such as the preparation of plans and reports, interviews, superintendence of work, and expenses connected with the arrangement of papers and records; similarly, plans, reports, attendance, and expenses called for by any royal commission appointed in regard to decoration of buildings with works of painting and sculpture; “voluminous and elaborate returns to Parliament,” with attendances on committees and debates, correspondence, and so forth; personal direction of works of unusual character, beyond the sphere of a contractor; negotiations for purchase of materials, and of casts forming part of a museum of great and permanent value to the country; designing and re-designing each portion of a comprehensive range of buildings, to suit the ever-varying orders of committees, commissioners, and departments, four times over, or any number of times, for the one fixed remuneration; preparation of documents, attendances and expenses in resisting claims and legal proceedings; all these, and any other services,—though leading to no outlay on the building, and therefore bringing no return by

commission,—may be demanded of the architect over and above his ordinary duty, and no compensation whatever be given him for them. He may have defrayed heavy costs out of pocket, whilst instalments to him are far in arrear, yet will get no allowance of interest on the one ground or the other. Verily one must have a fortune and large capital to begin and support a calling where so much is made to depend on length of purse. Is that a position in which should remain a profession requiring very different qualifications for its objects and real sphere of influence?

By a course such as we have referred to,—as in the case of the Crimean Commissioners,—the country is, by the conduct of its Government, made to appear willing to reap advantage, and yet to offer any quibble in lieu of compensation. The public have, ordinarily, no time to master “Parliamentary papers;” they leave the public honour and credit in the hands of those who administrate; but they recognise no distinction in their debt for services whether rendered to the order of one “Department,” “Board,” or “Commission,” and another. On the ground of such distinction, however, the Government appear to have acted in Sir Charles Barry's case, when they refused the claim for services connected with the arrangements for the public records, and with the Fine Art Commission; or on the ground that the services were, in the former case, performed without competent authority, and, in the latter case, rendered at the instance of the Royal Commission, who ought to pay, and not the Treasury.

Such is the position that architects must, for their own sake, and for the national credit and the desired advancement of art, assume may be theirs. We say the question is pressing, as a national one; for it is now that has to be decided the issue in our art and science, which will become manifest only after an interval of years.

Are we called to show the connection of architecture with progress in every relation,—social, moral, or intellectual? If, now, we need not do this, we ask,—is it desirable that there should be an educated body of men—one qualified to further these grand objects? Everywhere we can discover growing evidences that architects are disposed to take an extended view of their calling; and of the necessity which there is, towards a due acquaintance of their responsibilities, that there should be a great improvement effected in the resources for professional education. It will be impossible, however, that the progress can continue as desired, unless by the public there are furnished at once the obvious required returns of industry, and means which are also in some measure required, to assist in supporting the pursuit of the education. In the nature of an architect's study and “mission,” ever constant growth of knowledge is a normal and requisite condition. The man in such a sphere who ceases to learn and to receive external impressions, ceases to act, or to fill worthily the measure of his high calling. He must be not only arduous in the pursuit, but judicious in the choice of studies when young; but also, he must preserve the means of continuing them. Need we say that such an individual should be surrounded with books and all the appliances for study; that his house should be adorned with taste—for the influence upon him,—no less than the houses which he designs as the means of influence upon others. If the impressions produced by beautiful objects are worth seeking for in every home, art of some kind deserves to have visible provision in the *atelier* of an artist. There should, indeed, be art and beauty everywhere,—in a palace or a labourer's cottage; a mansion or a model lodging-house; a suburban residence or a place of business; a suite of apartments or a single office-room. Yet a considerable proportion of the number of architects in practice, from some

can be, are placed surrounded with objects of a character which are incentive to the production of ugliness and want of propriety, rather than of beauty and good taste in their designs.

Such, it should be allowed, is the present influence of mechanism and manufacture, that the very means which should serve the extension of art, are not yet understood so as to be made to operate much otherwise than in the dissemination of bad designs and pernicious principles. A very plain article of furniture, or adornment, costs more to execute than a manufactured article, elaborately “ornamented;”—and thus, taste, which properly “saves expense,” presents itself for the nonce, at a distance unattainable, save with great trouble and difficulty. These circumstances render the objects to be provided, for association with the pursuit of the practical business of an architect, more difficult of acquisition; but the amendment desired would not render needless a continued cultivation of taste through similar agencies. We might regret to see our profession imbued with the mere passion for collecting: such a “taste,” though it may afford service to others, is in the subject or victim of it, hardly consistent with the practice of art, even though accompanied with a feeling for the beautiful. But, much on the part of the architect will be always required, towards fostering his art-spirit, by immediate association of beautiful objects with his daily observation and thoughts. His home should be in its sphere, a constant book of reference—though, perhaps, intelligible to him only; it should be the sphere where whilst securing his own comfort and repose, he should be able,—by practical experiment, if need be—to study contrivances for domestic convenience, and new effects to be worked out on another scale, or under different circumstances. It is no mere fanciful assertion that the public gain would be great,—even through the agency adverted to,—from any improved worldly position of architects. So far from reducing the emoluments of the profession, it were much to be desired that these could be made such as to induce a larger infusion of taste into the class of houses in town and suburbs, where art is most needed, and architectural design is seldom afforded. Some visible demonstration is wanted of the fact, that beauty is quite attainable with moderate elaboration, or rather without what now pass for ornaments,—that the walls of rooms may be plain, fire-places and furniture, and carpets, composed with few elements of form or surface-pattern,—and yet that a better effect may be produced than through the aid of the mockery of art, which now holds place solely through dominance of fashion. We believe the improvement would be easily made; and that the body of our own profession could, and would effect it, either by the example of their homes, or the application of gains in the mode of investment which they would choose,—that of erection of houses on private speculation.

But whatever may be thought of one view of the public gain, the condition of art in architecture generally, cannot improve, if what supplies both the means and the reward be denied. What can be the reason of the difference of which publishers complain, between the sale of books to architects and engineers? We have heard it said that architects did not buy books, the intended inference being that they did not care to pursue the course—which we have spoken of above—of constantly extending their sphere of knowledge. So far as it may be that the range of architects' education bears no relation to the area and comprehensiveness of the field, the feeling of the profession itself now tends in the same course of opinion. But the plain reason of what leads to an imputation, is the difference in the circumstances of the professions (if we



must for the moment treat them as separate) of engineering and architecture. Engineering is, we believe, generally far less comprehensive than is the profession of architecture. The requirements to be provided for, and the elements for consideration, in designing a harbour, or even a railway, are, we apprehend, much less in number or in character of complication, than those in a house. The bulk of the contractor's work is great, but the design and contrivance bear no such relation to it, as in the architect's branch. The greatest skill is called into play; yet, from the restriction of the field, the knowledge is nearer in proportion to the demand. It may be conceded that great results have been attained—extending the domain of science, as of its applications to the wants of society,—as also it may be observed that there have been some errors, such as where architects are concerned are heavily visited upon *them*. But the real reason of the difference imputed is the very simple one, that 5 per cent. on "engineering works" is worth vastly more than 5 per cent. upon practical architecture. In the architectural profession the 5 per cent. pays so ill, that the majority of building works are necessarily eschewed by the profession; whilst engineers, either in subordinate or chief positions, readily gain a competence and sometimes secure large fortunes. Thus the engineering profession "patronises" the literature of its pursuit; any good work can command a sale; a vigorous and useful society is maintained; and so, an ever-growing stream of knowledge and progress is kept up. To place the architectural profession in the same vantage-ground, or to extend its domain over the area which architecture—the art—includes, may be more than we can at present find the way of doing; but architecture will assuredly not be progressive as art, or tend to the public good, if the inducements to the profession become less. We do not say that "architects" will not be found, ready to undertake works at almost any rate of remuneration,—for such appears to have been the case, according to statements in our columns; but the educational standard, instead of rising will become gradually reduced, and in a few years some intelligent reviewer of *our architecture* will discover that things have by small steps of decadence got greatly worse.

The means to avert this unfortunate result, must be an extensive dissemination amongst the public, of knowledge of the real nature of the architect's pursuit and calling; and the performance at this juncture by the Government, of their great duty, calculated to secure the interests of all, and to have the force of example. Corporate bodies, and private individuals—though under particular views derived from some section of architectural students, rather than discerning the real extent and nature of architecture as a study, or a pursuit—are likely to miss their aim from other reasons than the desire to risk the consequences we have adverted to.

You can no more improvise the resources of architecture than you can the *matériel* of war: it takes many years to grow an architect as it does to make a soldier. Let not, therefore, the nation find itself unprepared for any peaceful campaign that the future may require: let it not find, when the need of art is felt, that the means to produce it have passed away, through neglect and the effects of ill-requited labour. It will be for the Government to show the way, and set the example,—by a course of treatment liberal and different to that adopted in the case of the works of the Houses of Parliament, which extended over so long a period, and involved questions unusually complex and difficult in their character; and by the conduct of which, art in this country has received great advantage.

It will be recollected that after considerable discussion and delay, Sir Charles Barry was compelled to assent to terms including 3 per cent. on the outlay, 1 per cent. for measuring, and an amount for services in connection with the warming and ventilating. The great amount of *extra* service cannot be considered as included in the sums allowed, in any adequate manner, though eventually the principle was virtually admitted by the Treasury in the reasons which they gave for sanctioning the full 1 per cent. for measuring,—which, according to their view, allowed a sum for the extra services.

Not only the 5 per cent. should have been allowed, but all the other claims,—since they were just, and consistent with the precedents so often appealed to. In the "Statement of amounts of professional remuneration paid to architects by the Government on account of various public buildings, prepared at the Office of Works for Sir Charles Barry in the year 1848, by which it appears that his claim of 5 per cent. with reference to the New Palace at Westminster, is fully justified by precedent in the case of those architects who have undertaken the same duties as have been performed by himself," it is observed that "prior to the year 1815, when the appointments of attached architects to the Board of Works first took place, and subsequently to the abolition of those appointments in 1832, up to the present time, when both the architectural and financial duties of the profession were undertaken by the several architects employed upon public works, the professional allowance has been invariably five per cent. upon the outlay. It was only during the existence of the appointments of attached architects to the Board of Works, when that Board undertook the financial part of an architect's duties, that the professional allowance was three per cent." This is clearly shown by the tabular statement and notes, in which the remuneration is never under five per cent. where the measuring, valuing, and adjusting accounts were effected by the architect. Indeed, Sir Charles Barry's representations were rather within than in excess of the facts. Within the very period—1815 to 1832—above referred to, or from 1825 to 1830, Mr. Nash received five per cent. Similar allowances in excess were made in other cases. The cases quoted by "My Lords" were really not precedents; for the only point made out was that from 1815 to 1832, it was the practice to relieve architects of Government works, of a portion of what might be their labour, and in such cases to allow them a lower rate. The Treasury, by quoting such cases at all, as by the course which they adhered to in Sir Charles Barry's case—giving him a reduced per centage for the regular duty of an architect, and denying compensation of any kind for the onerous extra duties required from him—have simply shown that it is not their habit to apportion labour and its remuneration with any relation to one another.

The conditions for the Government Offices competition, as we have remarked, leave some of the chief points still open for a course similar to that taken in the case mentioned. Architects may therefore feel interested in the particulars of another case (to which we shall refer next week), showing remuneration which was given to one of the Government architects, even during the time so often mentioned, when there were architects attached to the Office of Works.

#### ROME.\*

"As rivers flow into the sea," says Niebuhr, "so does the history of all the nations known to have existed previously in the regions round the Mediterranean terminate in that of Rome. Many appear in it only to perish forthwith. Others maintain their existence only for a while, mostly in a struggle, but the contact sooner or later proves fatal to them."

The peculiar circumstances that made Rome, surrounded as she was by enemies from the moment of her birth, rely upon her arms for very existence, occasioned that element of valour in her composition, which, born of necessity, ripened in its maturity into that thirst for conquest which could only be allayed by an unlimited possession. Thus did she hasten on from conquest to conquest, until, in the beginning of the Christian era, she had gained the dominion of the known world, when, after a glorious existence of a thousand years, paralysed by the degeneracy of her rulers and her armies, she succumbed to the barbarians she had once despised, and who founded fresh empires upon her ruins.

And thus it is that the monuments of the most absolute nations, the trophies of the widest spread dominion, seem destined by a moral

necessity to decay and pass away, whilst in their arts and, more imperishable still, their literature, they still survive and are indeed immortal. And thus it was with Rome.

"Alas for Tully's voice and Virgil's lay,  
And Livy's pictured page! but these shall be  
Her resurrection; all besides, decay."

He who surveys from the summit of the tower of the capitol the undulating and wide-spread plain of the Campagna,—beholds the scenes of the latter portion of the *Æneid*—now trackless wood and swamp, and contemplates at once the lands of Etruria, Latium, and the Sabini,—where

"cultor Latii, per opaca silentia Tibris  
Labitur,"

the former country being divided from the two latter by that river as it follows its course from Soracte to the Anio, from the Anio to the sea; sees the mountains whence the Anio draws its source, thence in its course to the Tiber dividing the territories of the Latins and the Sabines; he who revels in the glowing tints of the Campagna, contrasted by the deep blue shades of the Alban hills on the south-east, on the highest summit of which, now called Monte Cavo, stood the temple of Jupiter Latiaris, to which, by the *via nuntia*, the sacrificial procession yearly ascended to celebrate the *ferie Latine*, and, midway between its summit and the plain, Albano, or the more distant Algidio, with its caves of snow, as alluded to by Horace; describes the sites of Alba Longa, the city of Ascanius, and Tusculum, sacred to the immortal Cicero, and Colonna, built upon the ancient Labicum, and "*frigidum Præneste*," now Palestrina, favoured retreat of Augustus, and the lake Regillus, famed for the fatal defeat of the Tarquins, and Collatia, hallowed by the memory of Lucretia and Roman liberty, and Lanuvium, so often confounded with its neighbour Lavinium; or, bearing to the left between the Alban and Sabine hills, the village of Zagarolo, until, quitting the range of hills so barren and monotonous, the eye once more reposes upon beauty and verdure in the olive-grounds and woods of Tivoli, and from which point towards the north, the view of Etruria beyond the Tiber is intercepted by the Janiculum, Vatican, and Monte Mario; whoever, we say, contemplates this varied scene upon a cloudless day, receives into his soul an amount of inspiration from the *genius loci* that must fit him the better for his after-task of critical investigation.

Turning to the south, we verify the description of Martial, though by him in allusion to the view from the Janiculum, as we trace the outline of the seven hills there spread out before us:—

"Hinc septem domos videris montes  
Et totam licet estimare Romam,"

In the foreground, on one side, are the ruins of her mighty monuments, when Rome swayed the sceptre of the world; on the other, the churches and palaces of the modern city; the capitol standing, as it were, between the living and the dead, separating the City of the Popes from that of the Cæsars.

The fallacy of the assurance of perpetual empire, as ascribed to Jupiter in his celebrated address to Venus, by Rome's greatest epic poet,—

"Hic ego nec metas rerum nec tempora pono;  
Imperium sine fine dedi,"—

comes vividly to the recollection, as we behold those masses of ruins, so mighty in their desolation, that wide-spread Campagna, once thickly studded with flourishing cities, now devoted only to the pasturage of cattle.

More true was the prophecy of Virgil's great lyric contemporary, Horace, where, in reference to the increasing luxury of the Romans, he says,—

"Jam paucæ aratro iugera regis  
Noles relinquere; undique latius  
Extenta visentur Lucrino  
Stagna lecu; plantanusque culebæ  
Evinct ulmos."

In the few brief observations we propose making upon the subject of Rome, nothing is further from our intention than to attempt to reconcile discordant theories, or to adjust the differences between the German and Italian schools of topographers,—the adherents of Niebuhr, Bunsen, and Becker,—Nardini, Nibbi, and Canina.

\* See p. 148, ante.



Equally foreign to our purpose would be the endeavour to condense into a few columns the descriptions of fora, palaces, temples, theatres, amphitheatres, baths, aqueducts, bridges, walls, gates, arches, columns, tombs, and the numerous other objects of antiquity, the details of many of which have individually occupied volumes to discuss, and employed whole years to investigate.

Our intention is to confine ourselves to the most salient points, looking to, amongst other authorities, the article on this subject from the pen of Mr. T. Dyer in Dr. Smith's Dictionary already referred to, and making such observations and suggestions as may arise in the consideration of the question at issue.

The Tiber, in an irregular course of nearly three miles from north to south, divides Rome into two unequal parts, the larger of which—that upon the left bank—comprises the seven hills of such historical renown. North of these is the Mons Pincius, not included in the ancient city, but a portion of which was enclosed in the walls of Aurelian. Within a short distance of the easternmost point of the Tiber rises the Mons Capitolinus, the smallest of the seven, though the most renowned. Almost touching it, and the most northern of the group, is the Collis Quirinalis, being in fact, together with the Collis Viminalis, which lies to the east of it, offshoots of the Mons Esquilinus, the most easterly of the group, and the two tongues of which were formerly called Cispius and Oppius, but afterwards considered but as one hill, in order not to exceed the prescriptive number of seven. South of the Esquiline lies the Mons Caelius, the largest of the seven, and to the west of that is the Mons Aventinus, the next in extent; and almost in the centre of the entire group is the Mons Palatinus.

On the right bank of the river are the Montes Vaticanus and Janiculum, of a considerably greater elevation than the hills before mentioned.

The principal portion of the modern city, and the most densely populated, is the area upon the left bank, enclosed by the Pincian, Quirinal, Viminal, and Capitoline hills, forming the irregular plain of the ancient Campus Martius, and which is traversed by the principal street of Rome, the Corso, about a mile in length, and running from the Porta del Popolo on the north to the Piazza di Venezia, near the northern foot of the Capitoline. Why the Quirinal and Viminal were styled Colles, in opposition to the term Montes applied to the others, is not exactly known, but probably originated in the ancient traditions of the Septimontium.

The height of these hills varies from 120 to 160 feet above the river, but in ancient times they must have appeared of greater elevation, owing to the intersecting valleys having been considerably deeper than at present.

The Capitoline, the Aventine, the Palatine, and the Caelian, were quite isolated and separated from each other by narrow valleys, of which those nearest the river appear originally to have formed a marsh. The three latter hills, with the Esquiline, though included within the walls, are comparatively uninhabited, being principally occupied by gardens and vineyards. The remaining portion of the inhabitants of Rome are located in the Borgo and Trastevere, on the other bank of the Tiber.

Conflicting accounts accompany the history of the city from its outset; for instance, Varro and Dionysius ascribe the incorporation of the Caelian to Romulus, — Eutropius and Livy to Tullus Hostilius, — Cicero and Strabo to Ancus Martius, — Tacitus and Festus to Tarquinius Priscus; and equal discrepancies exist elsewhere.

The preponderance of testimony establishes the following general order of the gradual annexation of these hills to the spreading city. Rome was originally confined to the Palatine; and Tacitus, in his "Annales," traces the course taken by Romulus, with his plough, in describing the *ponarium*, or symbolical boundary, according to the Latin and Etruscan custom, and from which description and analogous reasonings, the form of "Roma Quadrata" has been inferred. The words of Tacitus translated are,—"Therefore from the Forum Boarium, where we see the brazen figure of a

bull, because that kind of animal is yoked to the plough, the furrow for the marking out the city commenced, so as to include the great altar of Hercules. Thence, stones being placed at certain distances, it continued along the base of the Mount Palatine to the *Ara Consii*, then to the *Curia Veteres*, then to the *Edes Larum*," &c. This process of setting out a city is laconically described by Cato in the following pithy sentence,—"Qui urbem novam condet, tauro et vacca aret; ubi araverit, murum faciat; ubi portam vult esse, aratrum sustollat et portet, et portam vocet." But from the very starting of the plough of Romulus, the enigmatical and defective descriptions of the Roman writers plunge us into difficulties as respects the actual site of these obliterated landmarks, from which the views of Niebuhr, Bunsen, and Becker by no means extricate us; and for rescue from the slough of despond, we refer our readers to the clear exposition of Mr. Dyer. For the progress of the city under its first five kings, we rely more upon probabilities than upon facts. The addition of the Capitoline, formerly called Saturnius, the least in extent, but greatest in importance, and whose oval form may still be traced in a circumference of 4,000 feet, together with those of the Aventine and Caelian, are referred to Romulus. But whilst the latter were merely fortified by ditches and palisades as a protection for herdsmen and their flocks, the former must have been surrounded with a wall and gates to correspond with the account of the Sabine attack made upon it. Romulus had, without doubt, selected this hill for his future citadel, and thither he carried his first *spolia opima*, and dedicated them upon the site of the temple of Jupiter Feretrius, the first temple consecrated at Rome.

The Aventine, for the circuit of which Dionysius allows 18 stadia, or 2½ miles, seems to have remained as a mere fortified inclosure for shepherds to the time of Ancus Martius, who allotted it for the residence of a portion of the conquered Latins. After his final victory over them, he located the remnant of that people in the districts between the Aventine and the Palatine; and, further, incorporated with the city the Janiculum, built the Pons Sublicius across the Tiber, and constructed the Fossa Quiritium. It was to the introduction of the Latins into Rome that the plebeian order owes its origin, and Rome its greatness; and it is to the genius of Niebuhr that we may ascribe our present knowledge of the relations between the patrician and plebeian ranks. The etymology of the term Aventine has called forth so great a number of ingenious solutions, that it is difficult to say which is the most probable. The Caelian (formerly Querquetulanus, from its oaks), so named from Cælius Vibennus, an Etruscan general who assisted Romulus against Tatius, and who had his station upon the Mount, had, as we before observed, three dates assigned to it. The removal of these Tuscans to the Plain, where they founded the Vicius Tuscus, and the subsequent colonization of the Caelian, may partially reconcile these conflicting accounts. The more modern name of this hill is Lateranus, from a senator of that name who had a splendid house upon it in the reign of Nero.

The Quirinal hill, formerly called Agonian, seems, in the time of Numa, to have been divided into four distinct eminences, each named after some deity, namely, Quirinalis, Salutaris, Mucialis, and Latiaris, all of which, however, were afterwards absorbed in that of Quirinalis, so called from the Quirites, who came with Tatius from Cures.

The circuit of Rome at the accession of Tarquinius Priscus appears to have embraced the Quirinal, Capitoline, Palatine, Aventine, and Caelian hills, and the Janiculum beyond the Tiber. Tarquinius made no additions to the city, but planned, and, as some say, executed the walls usually attributed to his successor. In addition to this and many public works, he constructed the Cloaca Maxima, improved the Circus Maximus, planned the temple of Jupiter Capitolinus, and erected the first porticoes and tabernæ around the forum.

The incorporation of the Viminal and Esquiline hills, according to Dionysius and Strabo, was the work of Servius Tullius, and Victor

adds to these the Quirinal; but these little discrepancies are easily accounted for, and are but of small moment. Although the authorship of the wall, comprising the whole "*Urbs Septimcollis*," usually ascribed to Servius, is disputed by the elder Tarquin, that of the Agger certainly belongs to the former. This agger, which was a great rampart or mound of earth, 50 feet wide and above 60 feet high, faced with flag-stones and flanked by towers, constituted the most formidable portion of the fortifications of Servius, and extended across the broad table land formed by the junction of the Quirinal, Esquiline, and Viminal, since it was on this side that the city was most open to attack. Its length was 6 or 7 stadia,—three-quarters of a mile,—and below it was a moat, 100 feet broad and 80 feet deep. Remains of this monument of antiquity are still to be seen near the Baths of Diocletian and in the grounds of the Villa Negroni.

As in the time of Augustus it was difficult to trace this wall, it is now, of course, impossible, no remains of it being left: therefore it is by determining the probable position of the gates alone, and by what remains of the Agger, that by connecting these gates by lines, according to the indications offered by the ground itself, an approximation to the truth may be arrived at. Cicero informs us that Servius, like Romulus, was guided in the construction of his walls by the form or outline of the hills. And here our difficulties begin again, for Becker, after asserting that Servius only constructed walls where there were no hills as natural defences, afterwards conducts the line of walls over the height of the Quirinal, and even over the summit of the Capitoline itself. There were, however, two exceptions to the continuous line of wall, and those occurred at the Agger and the Arx, or Capitoline, the latter exception being proved, as Niebuhr remarks, by Livy's account of the Gauls scaling the height.

The number of the gates in the Servian wall varies in different writers, but as space would not allow us to institute comparisons, we will content ourselves with the able conclusions of Mr. Dyer, who enumerates twenty, including the Porta Triumphalis. "When we consider," says he, "that there were only nine or ten main roads leading out of ancient Rome, and that seven of these issued from the three gates, Capena, Esquiline, and Collina alone, it follows that five or six gates would have sufficed for the main entrances, and that the remainder must have been unimportant ones," &c. The remaining gates of chief importance were the Viminalis, Cælimontana, Trigemina, Carmentalis, and Ratumena.

Of the fortifications of the Janiculum, on the right bank of the Tiber, as ascribed to Ancus Martius, modern opinions are not in favour of any having existed; Niebuhr, amongst others, holding the theory as erroneous, though not giving reasons for his conclusions.

The modern walls of Rome, including those of the Trastevere and the Vatican, are from 12 to 13 miles in circuit; those on the left bank being the same as those commenced by Aurelian in A.D. 271, and completed by Probus. But as in the repairs by Honorius, the gates of Aurelian are supposed to have disappeared, it is difficult to say whether any part of the actual walls of Aurelian remains. Hurried and temporary repairs by Theodoric, Belisarius, Narses, and several of the popes, exhibit so many varieties of masonry, that it is difficult to assign periods to these several constructions.

The last general repairs were by Benedict XIV. in 1749, who restored all the dilapidated parts. They are generally of brick, with patches of masonry, occasionally preserving portions of *opus reticulatum*, as in the *Mura torte*, described by Procopius. These walls average about 50 feet in height on the outside, but from the accumulation of soil, do not exceed 30 feet upon the inner surface. Twenty gates belong to the modern city, of which seven are now walled up. Procopius, who wrote upon the Gothic war, and is the chief authority on this subject, enumerates fourteen principal gates (*πόλεις*), and some smaller ones (*πύλεις*). The distinction, however, between these two appellations is not very clear, as we find the Pinciana indifferently called *πύλεις* and *πόλεις*.



The destruction of *all* the gates by Totila, seems disproved by a few inscriptions still remaining over present ones. Any law it is assumed that *their situation* was not altered in the repairs of Honorius; and the question is, not so much to discover the sites of the ancient gates, as to ascertain the ancient names of the existing ones.

After the destruction of the city by the Gauls, B.C. 391, its last reconstruction proved fatal to its beauty and symmetry. Building for immediate necessity instead of for posterity, the old lines of road were disregarded; and even in the time of Augustus, the narrow crooked streets and mean houses formed a striking contrast to the public buildings and palaces he had erected. In 312 B.C. the Aqua and Via Appia were commenced under Appius Claudius Cæcus; and in B.C. 220, the Censor Flaminius commenced the Flaminian Way and Circus. Incessant acquisitions with the architecture of Greece through their conquests in that country and its colonies, doubtless gave the Romans that taste for architectural magnificence afterwards so highly displayed in the dwellings of their leading men,—albeit, the mass of the houses of Rome still remained poor and wretched. On the other hand, some of their greatest men preferred to court popular favour by the erection of public buildings, rather than by the exhibition of private opulence.

The reign of Augustus forms a most important epoch in the history of the city, as his firm and long-enduring power, and vast resources enabled him to carry out, not only his uncle's plans, but his own also; and the extent and magnificence of his undertakings may be best described by the boast of his old age, that he had found Rome of brick, and left it of marble.

The event which ultimately conducted to the greatest improvement in Rome, was the destruction, by fire, of nearly two-thirds of the city in the reign of Nero; and to the wilful act of which emperor, owing to his disgust at the narrow and winding streets, Suetonius unequivocally attributes it. Out of the fourteen regions of which Rome consisted, three were completely destroyed, and seven nearly so, whilst three only escaped untouched. Many masterpieces of Greek art, besides public buildings, perished upon this occasion; but, on the other hand, the advantages in the city of regular plan, broad streets, better constructed houses, portions of which were of stone, plentiful supply of water, and increased magnificence of every kind, more than compensated for the ruin caused by this catastrophe.

The *Ænea domus*, or new palace of Nero himself, was in keeping with all around. Erected on the ruins of the former palace, it included in its precincts large parks and gardens, filled with wild animals, and a vast lake, afterwards the site of the Flavian amphitheatre, comprehending portions of the Cælian, the Æsculine, and the Palatine hills in its vast extent. Under succeeding emperors, this enormous structure experienced many alterations, and but a shapeless mass of ruins now remains to mock the antiquary and confound the architect.

"Temples, baths, or halls?  
Pronounce who can; for all that learning reaps!'  
From her research hath been, that these are walls.  
Behold the Imperial Mount: 'tis thus the mighty falls."

It would occupy far too much space to pursue the works of the empire to the time of Aurelian, when that enterprising and active monarch, though engaged in successful wars in Egypt and the East, found it necessary to secure his capital from barbarian foes by the construction of the wall that bears his name.

In that interim the reigns of Vespasian and Titus produced many public works; amongst which the Coliseum of the former, and the Baths of the latter, take the first rank. Domitian rebuilt the temple of Jupiter Capitolinus; Nerva completed the forum whose name it bore; Trajan constructed the last of the imperial fora, with which was connected the Basilica Ulpia, and under Hadrian Rome attained its culminating point of splendour. Of succeeding monarchs it may suffice to say that those who most contributed to renovate the city were Septimius Severus, Caracalla, and Alexander Severus. The walls of Aurelian, with the exception of that part beyond the

Tiber, and some modern additions by the popes, are substantially the same as those which now exist, as appears from the inscriptions on the gates, and their circumference, as given by Ammon and Vopiscus, are therefore held as errors.

#### MR. G. G. SCOTT'S LECTURE ON MEDIEVAL ARCHITECTURE AT THE ROYAL ACADEMY.\*

I HAVE thus traced out what appear to me to be the leading historical claims of the style we are treating of, and which I will recapitulate as being:—

1st. That it is the architecture of the modern, as distinguished from the ancient world.

2nd. That it is the architecture of the Germanic races, in whose hands the civilization of the modern world has been vested.

3rdly. That it is the latest link in the chain of genuine and original styles of architecture, a chain commencing with the first effluence of the human race, and terminating in Gothic architecture.

4thly. That it is, in a stronger sense than can be predicated of any other style,—Christian architecture.

5thly, and lastly. That it is pre-eminently the architecture of our own forefathers and of our own land.

I will now proceed to direct your attention to some of the more prominent among its intrinsic claims.

Commencing, then, with its abstract beauty, I will not treat this as a comparative, but as a positive quality. Differences of taste and education lead us to form varied estimates of the relative merits of the several styles of art, but the most devoted follower of classic antiquity could scarcely question the absolute and intrinsic beauty of a Gothic cathedral. Every style of architecture has had its own glories. The mighty hall at Karnac, the hall of Xerxes at Persepolis; that model of symmetry, the Parthenon; the Coliseum at Rome, and that gorgeous copes of domes which canopied the shrine of Holy Wisdom at Constantinople, all rank among the most noble of the works of man; but who is there so prejudiced as to deny the worthiness of those glorious temples which preside in august seclusion over the cities of north and south, to an equal place in our admiration? Surely, if abstract beauty and intrinsic grandeur alone are considered, the cathedrals of Amiens, of Rheims, of Chartres, of Bourges, of Strasburg, Cologne, of Lincoln, Salisbury, or York, with a hundred others, will not suffer by comparison with the works of any previous age! Nay, I am convinced that an unprejudiced umpire would go much further and pronounce them, in most respects, far superior to the works of earlier ages; but my argument only requires that they should be admitted as their equals.

The next claim I will state is this,—that as treated architecture was brought to its highest perfection by the Greeks, so the other great art of construction, arched architecture, was perfected by the Mediæval builders; the round-arch variety in the twelfth, and the pointed-arch in the two succeeding centuries. No one who gives the subject a moment's consideration, will doubt the enormous advantages of the arched over the trabeated system: indeed, with the material we have at command in this country, the former style in its purity is in most cases impracticable, as is shown by half our modern attempts at it being in reality arcuation plastered over to look like trabeation.

The peculiar advantages of the pointed arch (though I do not urge them to the exclusion of other forms) are its greater power of carrying weight; its lessened thrust; the facility with which it proportions its height to that of its supporting limbs, and the general feeling of the building in which it is used, whether more or less verticed in its tendency; and its great advantages in groined vaulting.

The next quality I will mention is the extraordinary facility of our style in decorating construction, and in converting structural and useful features into elements of beauty. The arch, its normal feature, supplies to it an endless store of beauty. The vault supplies another inexhaustible fund, and assumes forms unrivalled in any other style. The window, comparatively neglected by the ancient architects, and even banished by the Greeks, was, in the hands of the Gothic builders, a perfect treasury of architectural loveliness, and the introduction of window-glass, an invention unknown to the ancients, became the source of an entirely new and most enchanting art, and one which exercised the most surprising influence upon architecture. The buttress, the natural but unpromising accompaniment of an arched vault, became, in their magic hands, a source of stateliness and varied beauty. The roof, unwillingly shown by the classic builders, adds solemn dignity to the works of their northern successors; while, if need be, its timbers are made to contribute liberally to the effect of the interior. The

campanile, a structure resulting wholly from practical necessity, became the greatest ornament of Christian cities, and supplied an endless variety of majestic forms, which had no parallels in ancient architecture; and generally, whatever feature, whether homely or otherwise, construction or utility demanded, was at once enlisted, and that with right good will and heartiness, among the essential elements of the design.

Carrying out the same spirit, no material was either too rich or too rustic to find an honourable place in the works of these truly Catholic builders. The varied marbles of the Apennines, the polished amethysts of Bohemia, the glass mosaics of the Byzantines, with gold and silver, enamel, brass, and iron, were all brought under tribute to make their richer works glorious; yet they were equally at home in the use of brick, or flint, or rubble, and did not despise even a homely coating of plaster, if only it were honestly and truthfully used. And, what is more remarkable, they excelled in the use of nearly every one of these materials, and varied their design with instinctive precision to meet every one of their individual conditions.

Carrying on the same spirit a step further, Gothic architecture shapes itself instinctively to varied climate and local tradition, and that without sacrificing its leading principles. It is true that its great normal types are found in northern Europe, and that the north of France may, perhaps, be considered as its central province; yet how admirably does it shape itself to the varied conditions of Italy or Spain, to the valleys of Switzerland or the inhospitable shores of Scandinavia; while, in every country where it prevailed, it assumes a national type, and in every province a local variety.

In the same way, again, it suits itself to every grade and every class of building to which it is applied. It is equally at home in the humble chapel of the rustic hamlet as in the metropolitan cathedral. The traveller through Lincolnshire is no less charmed by the village churches which rise in such profusion from its level surface than with the majestic minsters, which, from its lofty site, surveys the whole country; nor are we, after wondering at the stupendous grandeur of York, the less disposed to be delighted with the little village chapel at Skelton; and even the rudest structures of the most obscure district possess a truthfulness and a sentiment which more than compensate for their rusticity. To pass again to different classes of building, the Mediæval castles, though belonging to a class which the altered modes of warfare have rendered obsolete, are in their degree as noble and as thoroughly suited to their purpose as the sacred structures. The manor-house, the farm, and the cottage show equal appropriateness of treatment. The timber street-fronts of Coventry or Brunswick; the brick houses of Lubec or of the Lombard cities; or those of stone at Nuremberg—all evince the same power of meeting the conditions of purpose or material,—while the vast warehouses of the commercial cities of Germany, the town-halls of Flanders, and the tithe-barns of an English village are, in their way, as admirable and as appropriate as the minster at Rheims or the castle at Carnarvon.

Again, Gothic architecture unites all arts in one, more, perhaps, than has been effected by any other style, or, to say the least, fully as much so.

In its normal form a stone architecture, it does not make all other materials conform to this condition, but treats them each according to its own demands. It is almost equally successful in its timber roofs as in its stone construction, and equally perfect in wood as in stone carving; it treats iron and brass in a manner perfectly suited to the varying conditions; it brings up painted decorations of the richest or the simplest character, as best suits the building; it has introduced one all-pervading art entirely of its own I mean painted glass; and no art perhaps ever contributed in so large a degree to the increase of architectural effect: its jewellery, enamels, ivory carving, embroidery, tapestry, and all other arts are in perfect harmony; and though it fell short of the classic styles in the perfection of its figure-sculpture, it possessed even here a solemn and severe dignity, hardy equalled at any period, and its draperies often exceeded in beauty those of the classic sculptors.

In describing the sculptures at Wells Cathedral, our revered professor, who possesses, in a greater degree than any one whom it is my privilege to know, the happiness of being susceptible of enthusiastic emotion from the beauties of a rival school of art to that to which he has especially devoted himself, makes the following remarks:—

"Regarded in the right spirit, we shall wonder at the inexhaustible resources of the artist in delineating the various and opposite characters of his multifarious composition, in which no two are to be found alike, and in each of which we find the appropriate idea, and the fitness of embellishment which sustains the dramatic personæ throughout, with an untrifling energy

\* See p. 138, ante.



of impersonation in costume, symbol, and action, which excites our warmest admiration.

"We have the sanctity of the monk, the meekness and abstraction of the Supreme Pontiff; the archbishop; the pious energy of the bishop in the act of benediction; the prudent abbot; the devoted anchorite; the haughty and imposing king; the stark conqueror fiercely justifying his usurpation; the placid and impassible confessor administering his good old laws \* \* \* the inspired evangelist or the malignant spirit;—each and all discovering a ray energy of conception, which the informed artist may envy."

Again—"The Mediæval artist appealed sometimes to the imagination, and sometimes to the conscience, and thus gave a degree of sentiment to his works which the moderns can scarcely attempt, much less attain." \* \* \*

"But it is the moral understanding of the artist which is most affected by the contemplation of so vast an assemblage of Christian art, as contrasted with the classical, contained in our museums, or in ancient monuments. Habituated to the Grecian model in which the pride of life, the sensuality of beauty, a superhuman energy, or an aerial Elysium, are assumed, deluding with a beau-ideal, and disappointing to all human experience, he is brought here to the full admission of the realities and true conditions of human existence,—probation by the sweat of the brow, and the grand achievement of eternal life. Art is here employed to impress the great lessons of truth, the warfare of the world, the subjugation of the natural to the spiritual man, the honest employment of the intellect in the great cause of religion. \* \* \* No characters enter into this picture which have not been signified by some great good to society, or some great triumph over all-absorbing self. Wisdom in its true sense, and varying energies of personal or intellectual strength, in a great cause, are the only passports to admission in these records."

I need not apologize for quoting at so much length from him who has so often and so eloquently addressed you from this place, and need not refrain from adding the following admirable reflections to which the work he was describing gave rise:—

"The poetic faculty,—the fine sense of beauty, grace, and humour, are the gifts of nature: technical skill may be acquired by academy and happy circumstances. The union of these qualifications, which is requisite to perfection in a work of art, is indeed a rare felicity; their separate existence is a melancholy fact, exhibited by the history of schools in which, for the most part, mechanism and technicality usurp the higher attainment, and the wide distinction between the professional practitioner and the suburban artist is made apparent to us. But the end of all sound criticism should be to recognize these distinctions; to seize the poetical conception, however encumbered with a faulty execution, and to appreciate in their true merit the more exalted and the rarer qualities; else the poet descends to the grammarian, and the intellectual artist to the handicraftsman."

In foliated sculpture the Mediæval artists exceeded those of, perhaps, any other period. In their works you find the finest specimens of conventional or imaginary foliage, founded on natural principles, yet not imitated from nature,—the best instances of the introduction of natural foliage, either wholly or united with the conventional;—and the most admirable examples of conventionalizing nature, or, as Mr. Ruskin defines it, "bringing it into service," so as to suit it to the material and to the forms, conditions, and purposes of architectural decoration, whether in relief or in painting, and not the least valuable of the lessons we learn from them is the acknowledgment of the mind and imagination of the art-workman, who was not, as in classic architecture, employed to make for his caprice, or other features, an indefinite number of fine-similes of a single model, much less, as in most modern works, to copy in a hundred buildings a model which its author never meant to be used in one; but after having acquired a due amount of skill in the arrangement and execution of his foliage, and a due knowledge of the general tone and feeling which the architect designed to express, was then left, under only general guidance, to the indulgence of his own inventive and artistic faculties, and thus rendered every capital, every base, and every cusp a distinct and separate work of art, though all in harmony with the ideal or the whole design."

In variety of expression Gothic architecture is excelled by none, being equally capable of the sternest and most majestic severity, and the most exquisite and refined elegance, as well as of all the intermediate varieties.

In beauty of external outline, no other style of architecture approaches it; and in the variety, depth, and refined delicacy of the profiles of its mouldings it stands unrivalled. Time would fail me to tell of the wonderful manner in which our style shapes itself to

every accidental requirement; grapples with every difficulty, and converts it into a source of beauty; disdains, on the one hand, all artificially effected symmetry, nor, on the other, fears to submit to the most rigid uniformity, should the conditions of the case require it, being equally noble in the castle, where no two parts are alike, as in the Hall at Ypres, where scarcely any two are different. Here it meets every emergency with the utmost frankness and honesty; how it disdains all deception! thus contrasting itself, not with other genuine styles, for none really systematically admit of them, but with the despicable trickiness which our modern architects have learned from their own plasterers and house-painters; nor have I time to treat of the boldness, freedom, and originality of its conceptions. But, above all, its great glory is the solemnity of religious character which pervades the interior of its temples. To this all its other attributes must bend, as it is this which renders it so pre-eminently suited to the highest uses of the Christian church. It was this probably which led Romney to exclaim, that if Grecian architecture was the work of glorious men, Gothic was the invention of gods.

Having, I fear, at too great length, sketched out the claims of Mediæval architecture upon your study, I will conclude with a few remarks as to the spirit with which that study should be undertaken, the manner in which it should be pursued, and the practical objects for which it should be followed up.

In the first place, I will premise that your studies should not be undertaken in a spirit of mere antiquarianism. We owe very much to antiquaries, and far be it from me to depreciate the value of their researches: on the contrary, I think that the enlightened system on which they are followed up is one of the things of which our age has to be proud, and one for which, as lovers of art, we have great cause for gratitude; nor do I wish to discourage the pursuit of such investigations by architects. It is, in some degree, a necessary accompaniment to their studies, and will always add interest to them. What I wish to suggest is that our own proper subject is art rather than antiquity. The fact that the types from which we have to study have grown old is accidental: their merits and their value are perfectly irrespective of their age, and would have been as great had they been erected in our own day; nay, more so, for then we should be following up, as in former days, the works of our own immediate predecessors, and should not be suffering, as now, from a great and unnatural hiatus in the history of our art. In the second place, our studies should not be undertaken in a spirit of mere philosophical investigation: that, too, is very useful in its place, and is an important element in the study of art, though somewhat too cold to suit the feelings which belong to the true artist.

I would suggest two classes of sentiments as especially suited to our own studies,—somewhat opposite in their character, and each calculated to temper and correct any tendency to undue excess in the other. On the one hand, I would urge that your studies should be the earnest following up of the genuine impulses of the heart,—that their primary characteristics should be warmth, enthusiasm, veneration, and love. "Keep thy heart with all diligence, for out of it are the issues of life." Never repress in yourselves nor ridicule in others the generous impulses of enthusiasm. They are the very soul of art: they are the fresh spring-flowers of the youthful mind, the life-spring of every noble thought and action; without them, art would cease to exist, and we should sink under the bondage of an iron age. Above all, cultivate these feelings now that you are young, guard and cherish them as you would the choicest and tenderest of flowers; for, depend upon it, the chilling blasts of advancing years, and the deadening contact of a hard and unsentimental world, will have sufficient tendency to nip the precious bud almost before it has time to burst into bloom. On the other hand, it is necessary that the exercise of this zeal, heartiness, and veneration, should be regulated by sound and discriminating judgment, a perfect and unfettered freedom of thought, and an eye to real beauty of form and reasonableness of construction and design; so that our generous enthusiasm may not betray us into foregoing erroneous judgments.

However perfect a style of art may be, its productions are not all perfect, nor all of equal merit, while every human art has had its period of rise, culmination, and decline; and, with artistic and heart-stringing as must be our feelings towards any art in which we hope to excel, and intense as may be our veneration for the skill and noble sentiment of its original masters, these feelings should in no degree be permitted to blunt the sensitiveness of our own instinctive perception of beauty, whether positive or relative, nor to bias the freedom of our judgment as in the comparative truthfulness, propriety, or genuineness of the works of different periods or of different hands. We must keep a constant balance between our zeal and

our judgment,—not repressing the exercise of either, but giving each its full play, and exercising each in its highest and noblest degree.

I now come to the manner in which Mediæval architecture should be studied.

In the first place, though books and prints are very useful in their degree, let me impress upon you, in the strongest manner, that all real study should be at the fountain-head. You may derive information as to the history of art from books, but knowledge of art itself must be derived from works of art. The knowledge derived from books and prints comes to you at second-hand; you are seeing through other men's eyes; the really useful information is that which you obtain at the first hand, and through your own eyes. If you learn a fact from a book, be never satisfied till you have proved it by your own observation: if you are impressed with the beauty of a building from a drawing or a print, make sure of its being really beautiful by examining it for yourselves. Investigate every theory, however rudimentary, by actual examination of the data on which it is founded, so that some of your knowledge shall be merely taken upon trust from others.

During a genuine and natural state of art, every one learned it from, and developed it upon, the works of his immediate predecessors. This natural course having been broken up, the most reasonable substitute for it is to study the actual works which surround us, and which were produced while art was still genuine and unbroken. We have not to visit distant shores, and to investigate obscure fragments,—the works of races which have vanished from the face of the earth: we are surrounded on every side by original examples of the arts which we would study: they are the productions of our own country and our own race. The temples from which our authorities are derived are not those of an ancient and bygone nation, but those in which we ourselves worship, and within and around whose hallowed walls sleep the remains of our own forefathers. We study no outlandish or exotic architecture, but that of buildings which from our infancy we have been taught to venerate. We have then no excuse if we neglect to obtain our knowledge from the fountain-head.

The choice and order of the particular buildings which we select for our studies must depend much upon accidental circumstances; but, as a general rule, I would advise each student to begin with those which are readiest to his hand. If your home is in the country, visit, study, and sketch from your own parish church, and from those immediately surrounding you, widening your circle as you proceed; generally studying the simpler specimens before you venture upon the more magnificent. If you live in London, the case is different. The humble specimens have mostly perished, but the earnest student will still find out many of which the public are ignorant. Here, however, you must for the most part attend to the more magnificent works, and reserve the humbler for your rural excursions; and, above all, you must diligently study the glorious abbey church of Westminster,—internally, perhaps, the finest in England, but which, from its proximity, is made nothing like so much use of as it ought to be. Though the village churches round London have suffered more than almost any others, you would still do well to make pedestrian excursions among them, and carefully sketch what remains of them; and by extending your excursions to Waltham and St. Albans, to Elyham and Hampton Court, you will find objects of study of the highest merit, and the most thrilling interest. I would, however, recommend as the most profitable mode of following up the subject, more lengthened excursions; as, for instance, pedestrian tours through particular counties or districts, walking from village to village, and carefully sketching everything worthy of note to be found in it, whether ecclesiastical or domestic. This should be repeated over and over again in different districts. If you wish to direct your attention to the nobler productions of architecture, you must seat yourselves down in some cathedral town, and follow it up patiently from day to day, till your time is exhausted. A hasty view, to these nobles of structures, is but of little use.

Especially would I entreat your attention to those beautiful but melancholy ruins which mark the sites of ancient monastic institutions. You may find in them the finest and best studied examples of your art,—works designed and carried out, not in the bustle and hurry of cities,—but under the quiet influence of learned retirement: they are the works of the most thoughtful spirits of their age, and have received their utmost study and consideration. Not only are they intrinsically among the most beautiful specimens you can visit, but their present condition is calculated to impress them the most deeply upon the imagination and memory.

It is well to visit these remains alone; to stay long at them; to study them thoroughly, and not to repress the emotions to which they are calculated to



give rise. I would also plead for them on another ground: there are many of them fast mouldering away or tottering to their fall. A few years more, and many of them will have perished. Then, then, a friendly hand while they still exist, and rescue from oblivion their noble details by making careful and measured drawings of every part; so that, when the reality is no more, the truthful representation at least will be preserved.

I need hardly say that no works of art can be really profitably studied without drawing from them. The memory will not retain its impressions by mere abstract study and observation. I would not advise hasty and careless sketching, unless your time is so short as to render more impossible, but would urge upon you the necessity of carefully and assiduously drawing whatever strikes you as worthy of it, making measured drawings whenever you can, and noting down your impressions as to the merits or the defects of the work. So study what you see as thoroughly to learn it, as if no one had ever made drawings of it before. Never buy prints or photographs of it as substitutes for your own work; though they are most useful when you have done all you can for yourself. In this way you will in a few years obtain a good knowledge of the architecture of your own country, and this is the best preparation for studying the contemporary works of other lands.

I would never encourage a student to go too early abroad. Study well our own examples first; and follow up foreign ones later.

When you go abroad, begin with France. It is the great centre of Medieval art. Perhaps the best course is to take Normandy first, as being most allied to our own country, but still more important is the district round Paris, the old royal domain, which seems to be the heart from which Gothic architecture diffused itself throughout Europe. The architecture of this central district, particularly in works of the thirteenth century, demands the closest and the most diligent study: it is the great standard and type of the style, and without a good knowledge of it, your studies would be not only incomplete, but defective at the most vital part.

After France, I would recommend Germany. Pointed architecture in Germany is a direct emanation from France, far more so than is the case with our own country. Yet it has a character of its own, which it is well to study, and the later Romanesque of Germany, which is contemporary with the Early Pointed architecture of France and England, is replete with beauty and suggestiveness.

Italy should come after France and Germany, and the study of its Medieval works is, in my opinion, necessary to the completeness of the course I am suggesting. It should, however, be undertaken with much caution, without which it is apt to lead astray. I have above recommended you never to repress the generous impulses of enthusiasm: I fear, however, I must here make an exception to my rule. On first visiting Italy the scenes are so new, and so exciting, and the effects of the climate and the beauty of the atmosphere so intoxicating to the feelings, that we are apt to view everything through an exaggerating medium. Without repressing noble and generous emotions, I would still suggest that a rigorous watch should be kept over the undue effect of merely external influences: "Put a knife to thy throat if thou be a man given to appetite." With proper safeguards, however, on this head, southern Gothic is one of the most useful and delightful branches of the studies which lie before you, and supplies many a hiatus which would otherwise exist.

I hope, however, on some future occasion, to say more on this subject. For the present, I will close my remarks on the manner in which Gothic architecture should be studied, by saying that it is not mere architecture which you will have to attend to: painted decoration, whether in its nobler or humbler branches, stained glass, illuminated manuscripts, sculpture, metal-work, jewellery, enamelling, seals, carved ivories, embroidery, and a hundred other subsidiary branches, possess an almost equal claim upon your attention; and many of these must be followed up in museums and public libraries, in collections of archives, and in the secretaries and treasuries of monasteries and cathedrals, where, for the most part, they lie hidden, and unknown to the busy world around. Nor would I leave you to suppose that the objects of your study should be either exclusively, or even, perhaps, mainly, ecclesiastical. You must search out with the utmost diligence the remnants of civil, secular, and domestic buildings of the same ages: without this your studies would be imperfect, indeed! The caprice of individuals, and the love of living in new houses, have rendered these remnants most imperfect and fragmentary; yet the fragments are strewn on all sides of us, and demand to be carefully collected, and not a village you pass will fail to supply you with some contribution.

Finally. What are the special objects for which this

course of study should be undertaken? They are, I think, three-fold:—

1st. For the mere sake of acquainting ourselves with one of the most remarkable phases in the whole history of art, and that which belonged to our own race, country, and religion. It is one of the most striking characteristics of our day that in it, alone, of all periods of the world's history, the arts of all preceding times are studied and their history understood; and strange would it be if, while traversing every land to glean vestiges of its bygone arts, we should neglect to acquaint ourselves with that noble style which prevailed among our own forefathers, and whose glorious monuments surround us on every side.

The second object is one of a more practical nature. These noble monuments, the pride and glory of our land, have, through the lapse of time, and the barbarous hand of modern vandalism, become in many cases so decayed and mutilated, as to demand at our hands the most careful and judicious reparations. This cannot safely be undertaken by any but those who have as perfect knowledge as is possible of their architecture, and who are able to trace out with precision the history and changes they have undergone, and whose feelings are such as to lead them to deal tenderly and lovingly with them. This alone is a sufficient object to induce a careful study of our Medieval architecture.

There remains, however, a third object to lead us to this study, but it is one on which so much difference of opinion exists, that I must avoid on the present occasion doing more than naming it. I refer, of course, to the revival of Pointed architecture now going on. The promoters of this great movement do not desire to revive a departed art, however glorious, exactly as they find it in its original remains. Such may naturally be the character of their first essays, but it is not their ultimate wish. Their view is rather this,—that, feeling deeply the fact that we have long since ceased to possess an architecture which can be said to belong to our race or our age, and fully agreeing with those who desire to see a new development of our art to meet these demands; they feel that the most probable foundation for such a development is the native architecture of our own race and country, and that the thorough study of its principles may tend in time to promote the formation of an architecture of the future, which will be more thoroughly our own than that, however meritorious, which has been founded upon traditions of the ancient world.

#### CARISBROOK CASTLE.

The steep conical mound on which in later times the keep of Carisbrook Castle was built, was probably a fortified position from the earliest days after the Isle of Wight was inhabited; though the more recent structure has obliterated all trace of the first earthworks, if any such ever existed. The sides are so precipitous that they needed but slight artificial defences to render this by far the strongest position in the whole island; and we may therefore conclude that it was occupied as a military stronghold by the first settlers, and subsequently by those who successively obtained the command of the island.

The earliest architectural remains that have been found in the course of the recent repairs are towards the end of the twelfth century, when there must have been a residence of some extent on the site of the present house, as well as the keep; and from the nature of the ground a wall must have connected the two, and partly enclosed the residence. But few remains of this period have hitherto been found *in situ*. The most interesting feature is a small two-light window on the east side of the main building, which from its position and appearance was most probably one of the windows of the hall of the castle of that time. It is only recently that this window has been discovered, and the removal of a modern shed which concealed it has made it a prominent feature in that part of the building, and in conjunction with the chapel and old chimney of the hall, which has also been brought to light—one of the most picturesque points of the whole group of buildings.

A large portion of the existing building was erected by the Lady Isabella de Fortibus, who was possessed of the island from the death of her brother in 1262 to her death in 1293. The chapel is the only work of her time, which has retained its architectural features with but little change. The side window remains, and the arcade on both sides; but of the east window there is no other trace than the position of the cill. It is now occupied by the great staircase,

put up by Lord Cutts, who was governor of the island and captain of the castle after the Restoration. Appended is an interesting extract from some accounts of the year 1270, printed by Mr. Helliell in his unpublished work on the "History and Antiquities of the Isle of Wight," in which reference is made to this very chapel. There is also appended, on the authority of a "Memorial of the Castle," by the same author, an extract from an inquisition taken after the death of the Lady Isabella de Fortibus. The chapel of St. Nicholas, therein mentioned, is probably that we have been speaking of: the other "great chapel" most likely refers to one which may have stood on the site now occupied by the walls of the chapel erected in the year 1738, which was dismantled a few years ago. It possesses no feature interesting to the architect. The next alterations of any great extent appear to have been made in the days of Edward IV. when the residence assumed the shape it still retains in all its main points. The kitchen is a fine work of this period.

The whole residence may have fallen into bad repair during the Commonwealth, or was found unsuited to the wants and taste of the time; for large alterations were made by Lord Cutts in the windows and internal arrangements: probably before his day, the building opposite the great entrance-gateway was the hall of the castle; and, according to the evidence of old representations, open to the roof. It is now divided into two stories. Further investigation may reveal details of the original structure sufficient to determine the design, which, it is hoped, may ultimately be restored.

The object of the repairs that have been recently executed, under Mr. Hardwick's direction, has been principally to preserve the existing features of interest, rather than to restore,—to arrest the progress of decay, rather than to recreate, however faithfully, ancient forms from the mutilated fragments, which, after all, are more interesting to the antiquary and architect than the most careful copy. Another object has been to remove such buildings of modern erection, as disfigured and concealed the ancient structure, without adding either to its stability or usefulness.

The entrance-gateway is a magnificent work, and it is satisfactory to be able to state, that it is less ruinous than most similar constructions that have been as much neglected. No other repair has been done to this portion of the castle, or to the external walls, except the removal of ivy and other vegetation, which was found to be actually injuring the fabric, and the securing in their original position such stones—especially those of the parapets and upper surfaces of the walls—as were loose and likely to fall.

The building which covers the famous well is a structure of the fifteenth century. The walls are sound, but the roof was entirely decayed: sufficient remained, however, for the purpose of restoring every part, except the barge board. The depth of this well has been popularly stated at 600 feet: in fact, it is only 145 feet.

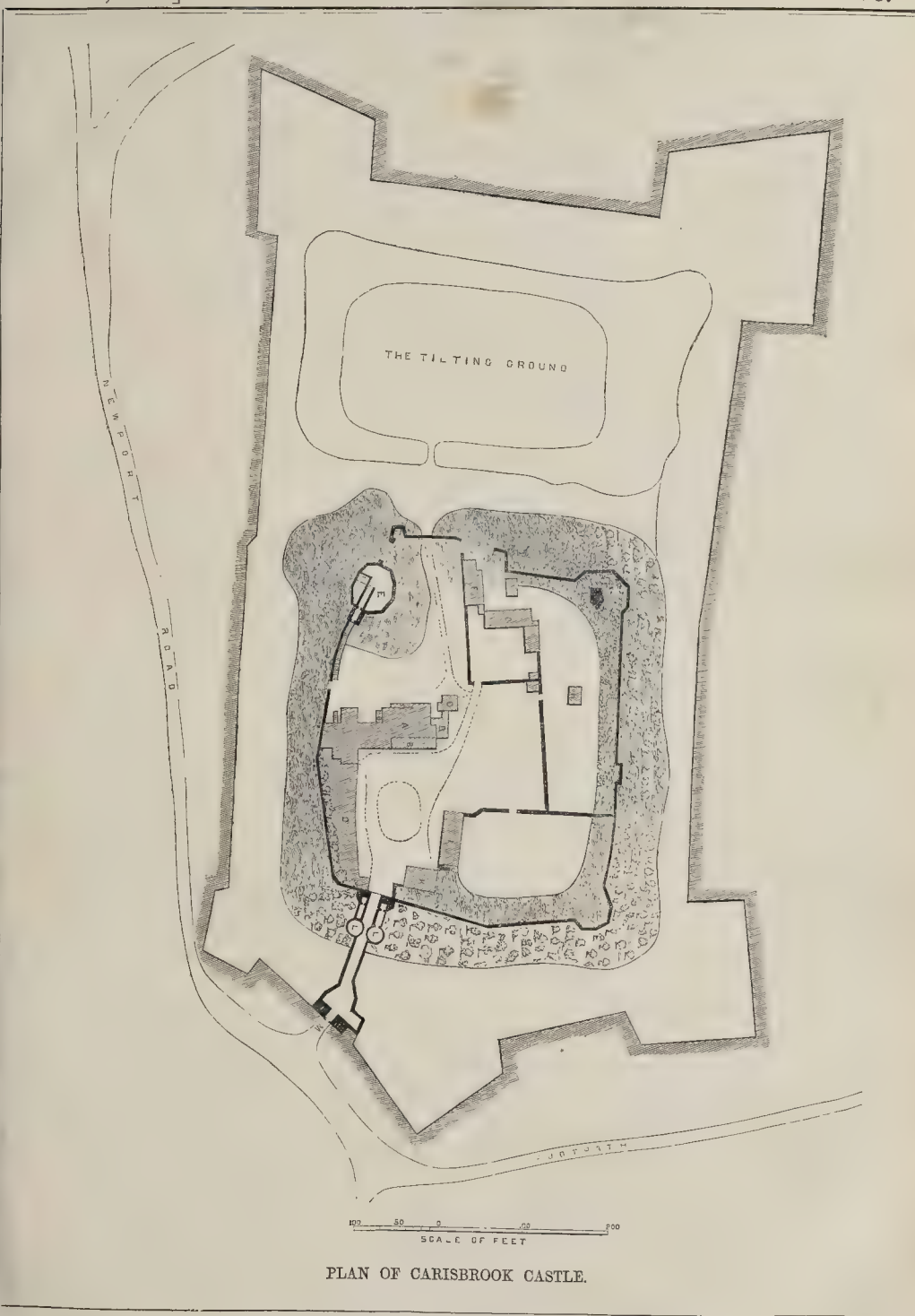
Within the walls are two isolated buildings, besides the residence and chapel,—one near the gateway,—probably the guard-house; the other, a work of the fifteenth century, which was most likely built as quarters for the troops: it contains some fireplaces of good bold design.

The range of ruined buildings on the left side of the entrance-gateway are works late in the fifteenth century. Here were the apartments where Charles I. was confined after his first attempt to escape; and it was from a window nearly opposite the end of the present residence that he made his second unsuccessful attempt. It is quite clear that the window which has hitherto been pointed out as that through which the king endeavoured to escape must have been in an ante-room, or in one of the rooms occupied by Colonel Hammond.

The gateway in the wall of the outworks is of the time of Elizabeth, and bears her initials, with the date 1598. The whole of these outer works, which are of considerable extent, and interesting as examples of the military engineering of that time, were constructed by Genezello, an Italian engineer, for Elizabeth.

Carisbrook Castle has been visited hitherto





PLAN OF CARISBROOK CASTLE.

principally for its picturesque beauty and from the sympathy felt for the events of the life of Charles I. which took place within its walls. In addition to these sources of interest, the recent repairs, which have stripped the castle of modern buildings that concealed its ancient form, and have developed much that was scarcely known before, have added much to its interest to all those who are desirous to see our national

monuments preserved, as a record of the past, and examples for the study of the architect and archaeologist.

*A.D. 1270. Cost of the Castle.*—For bars and nails bought for the different doors of the castle, and for iron for making the window in the wardrobe beyond the chapel, XVIII. ob.

For XXIII. shingles bought, and for the portage

and carriage of the same from Yarmouth to the castle IV. m. Vc.

Nails for laths, with straw for covering the houses of the castle, and for nails bought for the new tower, LXVs. VI. d.

For a beacon bought for a fire (*rogum*), and for making, burning, and extinguishing the same, and for carrying into the castle, XXI. s. IV. d.

For digging and cleansing the foundation of the







playing as a veneer for covering others, are the citrus, the terebinth, the different varieties of the maple, the box, the holly, the holm oak, the root of the elder, and the poplar. The elder furnishes also, as already stated, a kind of tuberosity, which is cut into layers like those of the citrus and the maple. In all the other trees the tuberosities are of no value whatever. It is the central part of trees that is most variegated, and the nearer we approach to the root the smaller are the spots, and the more wary. It was in this appearance that originated that requirement of luxury which displays itself in covering one tree with another, and bestowing upon the more common woods a bark of higher price. In order to make a single tree sell many times over, laminæ of veneer have been devised; but that was not thought sufficient,—the horns of animals must next be stained of different colours, and their teeth cut into sections, in order to decorate wood with ivory, and, at a later period, to veneer it all over. Then, after all this, man must go and seek his materials in the torseæ-shell into sections; and of late, in the reign of Nero, there was a monstrous invention devised of destroying its natural appearance by paint, and making it sell at a still higher price by a successful imitation of wood."

"It is in this way that the value of our couches is so greatly enhanced; it is in this way, too, that they bid the rich lustre of the terebinth to be outdone, a mock citrus to be made that shall be more valuable than the real one, and the grain of the maple to be feigned. At one time luxury was not content with wood, at the present day it sets us on buying tortoise-shell in the guise of wood."

In the 13th book, Pliny speaks of the mania for fine tables. He also says, "There is preserved to the present day a table which belonged to M. Cicero, and for which, notwithstanding his comparatively moderate means, he gave no less than one million sesterces (9,000*l.*). Two tables were also sold by auction, which had belonged to King Juba; the price fetched by one was one million two hundred thousand sesterces." A library discovered in a ruined villa near Portici was adorned with presses inland with different sorts of woods. The beds were often made of cedar enriched with inlaid work, &c. and a bed made of iron has been found at Pompeii.

In all these specimens of Egyptian, Grecian, and Roman workmanship, it will be noticed that though the peculiarities of the style are distinctly preserved yet they have no architectural character, but simply constructive form and beauty of outline adapted to the material used.

We have now to pass through a dark cloud which obscured every phase of art;—we pass over a period of more than a thousand years. According to Greek manuscripts of the tenth century, the decoration of furniture in the Eastern Empire must have been of considerable richness, as the thrones, seats, and beds represented, though rude and ungraceful in form, are highly decorated with gilding and inlaid work. Theophilus the Monk, in the twelfth century, tells us that, not satisfied with decorating the smooth parts of furniture with colour, they painted on it figures, animals, and foliage, sometimes on a gold ground.

The same writer in his Essay on Various Arts, chap. xvii. thus describes the manner of preparing panels for painting on: "You must join the boards with care, piece by piece, by the help of the instrument used by carpenters and joiners; you must fasten them with glue; the panels brought together by this glue when they are dry adhere so solidly that they cannot be separated either by damp or heat. They must then be made smooth with an iron proper for that purpose: this iron, curved and cutting on the inside, is provided with two handles in order that it may be used with two hands. It serves to plane the panels and the doors, so that these objects become perfectly smooth. You must then cover them with the hide not yet tanned, either of horse, ass, or ox. After having macerated it in water and scraped off the hair, the excess of water is pressed out of it. It is applied to the wood in this damp state with the glue of cheese." In another chapter he explains the manner of covering these panels lined with leather with a light coat of plaster or chalk; he takes care to recommend the use of linen cloth or canvass if no skin is to be had, he afterwards gives the process for painting these panels in red or any other colour with linseed oil and covering them with varnish. The beautiful altar frontal in Westminster Abbey is a most interesting example of the process described by Theophilus, and it is of a period not far removed from his time.

We now enter upon a style of art founded upon principles altogether different from those which preceded it—the Mediæval. In that chivalrous era the tournament and the battle-field were the predominant objects which engaged the attention of the many, and the study of literature and the practice of art were confined to the Church alone. The Crusades had,

however, opened to Europeans a knowledge of the arts that still flourished in the East, and had probably material influence on the principles of Mediæval design. Our forefathers of the thirteenth, fourteenth, and fifteenth centuries, lived in a rude convivial manner which demanded few luxuries of furniture, and these at the earlier parts of that period were sufficiently plain and simple in form depending rather on their painted decoration than on neat workmanship or carving; this taste, however, towards the end of the fourteenth century gradually changed, and colour gave way to more finished workmanship, moulded panels, and carved ornaments. The construction of the furniture thus became better suited to the material employed. On rejecting the covering of parchment, it was necessary to arrange the wood in smaller compartments to prevent its splitting or rasing; hence arose the system of panning and framing which became the main feature. One of the chief beauties, however, of the furniture of this later time was the elegant metal-work applied in the form of locks, hinges, handles, &c. Many of these still remaining show wonderful perfection and taste in the workmanship. I will not attempt to particularize the peculiarities of style of the various periods, but I will now describe the principal articles of furniture belonging to a house of that time. The great dining-hall had a long table at the end, at which the lord and his principal guests sat; two other tables for inferior visitors and retainers were placed along the sides of the hall at right angles with the upper one; tables so placed were said to stand banquet-wise. The lord's seat was distinguished by a canopy of cloth of estate, on which was generally displayed his coat of arms, and a cloth of tapestry was hung against the wall. This end of the hall being raised above the rest was called the "high dese" or dais, the step forming a line of demarcation beyond which none were to approach except by invitation. Sometimes the tables were arranged in one length, in which case the salt-cellar formed the boundary between inferiors and the more honourable guests. The floor was generally strewn with rushes. The tables were massive boards fixed on trestles mortised into the floor. The seats were mostly forms, but chairs were sometimes used. A MS. of the fourteenth century has this item:—"To put wainscot above the dais in the king's hall, and to make a fine large and well sculptured chair." At the farther end of the hall a cupboard called the "Court cupboard" was generally placed, in which the service of plate, such as salvers and gold drinking cups, were arranged, on shelves or stages, answering in some respects to our sideboards of the present day. These cupboards, though originally of rude construction, afterwards became elaborate and beautiful pieces of furniture, richly carved in oak: they are often alluded to in old documents. On grand occasions temporary stages as cupboards were also erected. "At the marriage of Prince Arthur, son of Henry VII. in the hall was a triangular cupboard, five stages high, set with plate valued at 1,200*l.* entirely ornamental; and in the 'utter chamber,' where the princess dined, was another cupboard set with gold plate, garnished with stones and pearls, valued at 20,000*l.*"

In the inventory of Skipton Castle, in Yorkshire, the furniture of the great hall is thus given:—"Imprimis, 7 large pieces of hangings, with the Earl's arms at large in every one of them, and powdered with the several coats of the house. 3 long tables on standard frames, 6 long forms, 1 short dais, 1 Court cupboard, 1 fayre brass lantern, 1 iron cradle with wheels for charcoal, 1 almshouse tubb, 20 long pikes."

The great chamber was often used as a sleeping-room by night and a reception-room by day.

Shaw, in his decorations of the Middle Ages, gives the interior of a chamber in which Isabella of Bavaria receives from Christine of Pisa her volume of poems. The queen is seated on a couch covered with a stuff in red and gold, and there is a bed in the room furnished with the same material, to which are attached three shields of arms: The walls of the chamber were either hung with tapestry or painted with historical subjects. Chaucer, in his Dream, fancies himself in a chamber—

"Full well depainted,  
And all the walls with colours fide,  
Were written to the text and gloss,  
And all the Romances of the Rose."

The floors, which at an early period were laid with rushes, were at a later one covered with a carpet, called the bord carpet. The description of the furniture in the great chamber at Henricgrave, the seat of Sir Robert Kyton, temp. Henry VII. enumerates very minutely the various articles, among which are, the carpet, the tables, the cupboards, the chairs, the stools, two great chairs, silk and velvet coverings, curtains to the windows and doors, a great screen, the fire-irons, branches for lights, &c.

There is no mention of a mirror, but they were used at this time, but very small, and of metal,

polished. The coiffe or chest which contained the ladies' trousseaux, was subsequently much ornamented. The wardrobes, so called, were generally small rooms fitted with cupboards called armoiries. In 1253, "the sheriff of Southampton was ordered to make in the king's upper wardrobe, in Winchester Castle, where the king's cloths were deposited, two cupboards or armoiries, one on each side of fireplace, with arches and a certain partition of board across the same wardrobe."

There were also tables of cypress and other rare woods, carved cabinets, desks, chess-boards, and above all the bed—the most important piece of furniture in the house, and of which Ralph, Lord Basset said, "Whoever shall first bear my surname and arms, according to my will, shall have my great bed for life." There was the "standing bed," and the "truckle bed;" on the former lay the lord and on the latter his attendant. In the daytime the truckle bed, on castors, was rolled under the standing bed. The posts, head-boards, and canopies or sprayers of bedsteads, were sometimes carved, or painted in colours, but they are generally represented covered by rich hangings. King Edward III. bequeathed to his heir an entire bed marked with the arms of France and England, and Richard, Earl of Arundel, to his wife Philippa, a blue bed, marked with his arms, and the arms of his late wife; to his son Richard a standing bed called clove, also a bed of silk embroidered with the arms of Arundel and Warren; to his son Thomas, his blue bed of silk embroidered with griffins, &c. &c.

The chair was a single seat without arms. The fault-stool (fauteuil in modern French, was originally a folding stool of the curule form, but afterwards the form alone was preserved; examples remain from the time of Dagobert up to a later period. Dagobert's seat is considered by some to be of much greater antiquity than his time, and the back and arms are certainly of a later period than the rest. The so-called Glastonbury chair is much to be commended for simplicity of form, perfect strength, and adaptation for comfort.

In the earlier times chairs and benches were not stuffed, but had cushions to sit upon and cloths spread over them; afterwards, as the workmanship improved, they were stuffed and covered with tapestry, leather, or velvet. The forms and workmanship of these seats were generally very rude, but the stuffs that covered them were of great richness and value, and tastefully trimmed with fringes and gimps, fastened with large brass studs or nails.\*

#### SOCIETY OF BRITISH ARTISTS.

The most striking picture in the Suffolk-street Exhibition is No. 86, "The Sick Boy," by T. Roberts, and this, strange to say, is not on the line. The objection that may be urged to it is that it recalls by its composition the death of Chatterton, exhibited last year in the Royal Academy, but in truth it owes nothing to that picture. It is an admirable painting, touching and beautiful. The countenance of the sufferer, and the tearful eye of the watching sister, are not easily forgotten. The accessories, too, are painted with marvellous truth. Another very noticeable picture, hanging opposite to the "Sick Boy," is 153, "Il Ritorno della Contadina,"—a noble-looking peasant woman crossing a ford, carrying her child. It is full of character: as a piece of imagination the painting of the dress is admirable. No. 441, "Il Piccolo Tesoro della Madre," by the same artist, although not quite so good, is nevertheless a clever picture. Mr. Hulse's principal picture, "The Son of Louis XVI. under the Talleage of Shinou," although vigorous both in design and execution, is somewhat coarse and staid; there is much character in 379, "Waiting for Legal Advice," by J. Campbell, jun.; the compressed lip and raised toes are eloquent. The head of the picture should have been a little larger. Character is the quality for which 565, too, is distinguished; "French Soldiers describing their Battles," and, as of the same class, if the visitor want a laugh, he may look at 327, "Anxious Suspense," where a young jockey, stealing apples, having slipped from the sough, is held up by his "hook," while the owner approaches. 52, "Heart-ease," is one of Mr. Baxter's graceful and gracious female portraits, before which all stop. Mr. Cubbitt's "Beg, Sir," 206, has been immortalized in the *Illustrated News*, and deserves it. "The Fisherman's Return," by J. J. Hill, 109, "Crossing the Brook," 416, by F. Hensell, "Virginia," 532, by A. T. Patten; "A Neapolitan Picnic," 528, by R. B. Paul, have good marks against them in our catalogue.

Mr. Sier has so ne bright fresh landscapes; 205, for example, "Near Capri, Capri, North Wales;" and 178, "Salmon Leap on the Conway." No. 13 is a good sound landscape by G. Cole, and "Albany House," by the same, 408, is equally good. 195, "Evening on the 'Llugwy,'" is a good specimen of

\* To be continued.



Mr. Pettitt's style. "A Summer's Morning on the Thames," by H. J. Boddington; 430, "Sunset after a Storm," by E. Niemann; "Tyn y Cae," 561, by W. West, all deserve notice.

#### CROSBY HALL, BISHOPSGATE. EVENING CLASSES FOR YOUNG MEN.

CROSBY HALL was probably erected in the fifteenth century, but the exact date of its foundation is uncertain. In the year 1466, when the lease was granted to John Crosby, by Alice Ashfield, prioress of St. Helen's, it is described as a great tenement, formerly in the possession of Catenaco Pinelli, a merchant of Genoa; it was, however, finished in 1470, by Alderman Crosby, M.P. who was that year sheriff of the city of London, and in the following year knighted by King Edward IV. coming into the city.

Soon after the death of Sir John Crosby, A.D. 1475, it was occupied by Richard Plantagenet, Duke of Gloucester, afterwards King Richard III. whose connection with Crosby-place has been immortalized by Shakespeare, in two well-known passages,\* while his residence there is affirmed by the best authorities, viz.—Sir Thomas More; the chroniclers, Hall and Hollinshed; and the historians, Rapin, Lingard, and the accurate Mr. Hallam.

The next possessor of this princely mansion was Sir Bartholomew Reed, who spent his splendid and celebrated mayoralty therein, A.D. 1562. He seems to have entertained the Princess Catharine of Arragon, two days before her marriage with the youthful Arthur, the eldest son of King Henry VII.; and he is reported to have received there some ambassadors from Maximilian, Emperor of Germany, when they came to condole with the king upon his son's early death.

Reed was succeeded by Sir John Rest, who was Lord Mayor in the year 1516.

During the reign of Henry VIII. Sir Thomas More, afterwards Lord Chancellor, resided for several years in Crosby-place.

At the dissolution of the Priory, the estate was surrendered to the Crown; and in the reign of Elizabeth it became the property of German Cioil, a distinguished merchant, and his wife, Cicely, a daughter of Sir John, and cousin of Sir Thomas Gresham.

In 1584, Crosby-place was purchased by Sir John Spencer, on the eve of his mayoralty, and it passed, through his daughter and heiress Elizabeth, to Sir William Compton, Lord Northampton. It was while Spencer was Lord Mayor that Queen Elizabeth honoured the hall with her presence, and witnessed a masque, conducted by the young wits and revellers of Gray's-inn and the Temple.

At the commencement of the Great Rebellion, A.D. 1642, when Sir John Langham was the occupant, Crosby-place was made a temporary prison for the Royalists, and several clergymen were sent there by order of the Commons House of Parliament.

Thirty years afterwards (a fire having destroyed the greater part of the building, A.D. 1672), the hall was used as a Meeting-house for the Presbyterians, who continued there, with some intermission, for nearly a hundred years.

In the year 1692, the estate was sold to William Freeman, esq. in whose family it still remains. Probably in despair of its restoration, it was let to Messrs. Holmes and Hall, packers, and in utter disregard of its beautiful form and original occupation, it was sadly altered to be made available for their commercial purposes.

In 1831, the premises, then in a ruinous condition, were advertised to be let on a building lease; and a public meeting was held, in order to avert, if possible, the destruction of an ancient and beautiful edifice so rich in historical associations, and so valuable in a scientific point of view, as a connecting link between the domestic architecture of the fifteenth and sixteenth centuries. A subscription was immediately opened, and extensive repairs, necessary to preserve the great hall from further injury and dilapidation, were effected, under the gratuitous superintendence of Mr. Edward Blore, architect.

The amount of subscriptions was, however, inadequate to render the hall available to any useful purpose, or to provide for the ground-rent, and other unavoidable expenses; the northern wall was still in a dilapidated condition, and the front in Bishopsgate-street was unrepared.

A number of gentlemen (most of whom were interested in a Literary and Scientific Institution then lately opened at Salvador House) associated themselves with a lady, whose energy and taste had hitherto directed the work; and, assisted by the experience of Mr. John Davies, architect, expended nearly 3,000*l.* more upon the property. For seven years the Literary and Scientific Institution found an agreeable home at Crosby-place, but ceased its tenancy in 1849.

\* Act 1, scene 2; act 1, scene 3.—"Richard III."

The committee for Evening Classes for young men then engaged the hall for their weekly lecture; and at Michaelmas, 1851, opened also a reading-room and library, at a price so small, as to be within the reach of every mercantile clerk and industrious mechanic, who desired mental improvement, and a wise occupation for his leisure hours.

In the face of great difficulties, the committee have carried on their institution with great usefulness to the thousands of young men who have, from time to time, joined the classes, many of whom have improved their position in life by the instruction they have obtained. Three have been recently appointed to clerkships at the Privy Council-office, and several distinguished themselves at the examination held in June last, by the Society of Arts.

The present leaseholders have, however, recently determined to part with their interest in the building, and the committee are desirous of purchasing it, in order to preserve the building during the remainder of the lease (seventy-nine years), for educational purposes. In the event of their being unable to accomplish this object, the lease will be offered to public sale. To what purpose it might then be applied it is impossible to predict. The archaeologist, the lover of the beautiful in architecture, and the friend of education, earnestly desire the continuance of its present appropriate occupation; but as the sum necessary for the purchase of the lease is considerable—5,000*l.* or 6,000*l.*—the aid of the public is asked, and a subscription list is opened at the hall. To induce the assistance of some of our readers is the immediate object of our notice.

#### PREMIUMS IN COMPETITIONS.

THE shameful results which are constantly following most competitions have often in your pages been well commented upon, and many modes of procedure suggested to cure the increasing evil, some of which are admirable, but none have, so far, been practically carried out. It appears to me that the real source of such evils is in the architects themselves; and I cannot but think that with a determined unanimity among ourselves, we could soon put a stop to such proceedings. It is self-evident, that if the shameful calls remained unanswered, the calls would soon cease to be made.

First as regards the premiums, which are so often totally inadequate. I would suggest that architects, one and all, should agree never to respond to any competition unless the successful competitor be allowed to carry out the work at the usual commission of 5 per cent. and in addition to that, a premium of 1 per cent. in consideration of the superiority of his design above those of the many other competitors. The first premium would then be 1 per cent. on the cost. For the second premium, I would have it agreed not to accept less than 2½ per cent.; and for the third, 1 per cent. The absurdity of calling the first premium such, when it is to be merged into the commission, often a reduced one, must be manifest to all. The premiums for a 1,000*l.* building would then stand thus:—First premium, 10*l.* in addition to the usual 5 per cent.; second premium, 25*l.*; third premium, 10*l.*

Now, as regards practically carrying out this scheme. Should it be approved of, nothing is simpler. It is only requisite that such architects as engage themselves to abide by the above rules should be invited to forward their names and addresses, to be publicly chronicled in the *Builder*; and I feel sure we should soon see the names of all the principal men in the profession put down, thereby testifying their desire to support their character, and raise the style of design throughout the country.

A PROVINCIAL ARCHITECT.

#### COMPETITIONS.

*Etheridge Memorial, Bilston, Staffordshire.*—The committee for erecting this memorial have selected the design of Messrs. Bidlake and Lovatt, architects, of Wolverhampton, which is to be executed in Mansfield magnesian limestone, by Mr. Horsman, of the Wolverhampton Stone and Marble Works.

*London.*—The designs submitted by Messrs. F. and H. Francis, for the National Discount Company's offices, in Cornhill, have been selected. The other competitors were Mr. H. Baker, Messrs. Nelson, Mr. N. T. Randall, and Mr. C. O. Farnell. The four unsuccessful competitors received 25*l.* each for their plans; a fair and honourable arrangement.

*Illogan Cemetery.*—The designs of Mr. Benjamin Wilson, of Alfreton, have been selected; and a tender from Mr. Joseph Evans, builder, to execute the works under Mr. Wilson, has been accepted. The *Derby Advertiser* says:—"The chapel, which are to be placed some little distance from the entrance, are separated by an archway surmounted by a belfry and affording shelter for hearses and mourning coaches;

and a covered entrance common to both chapels, each of which has a robing-room connected with it. They form a cross on plan, the gable end of the Episcopal chapel looking east: considerable similarity is observed in their style and arrangement. The walls are intended to be built of stone, backed with bricks; all the dressings being of chiselled ashlar. The framing of the roof, the doors, desks, seats, and other fittings, are to be of deal, varnished. The floors of black and red tiles. The lodge contains two rooms, with pantry, &c.; and board-room for meetings on the ground-floor, with bed-rooms above."

#### ENCAUSTIC TILES TURNING DULL.

WITH regard to the complaint of your correspondent "F. K." (p. 179) I beg to say that the appearance he describes is probably due to the minute pores on the surface of the tile having become filled with mortar when first laid down, which, whenever the surface of the tile is thoroughly dry, gives them a dingy grey appearance. Should this be the case, the only remedy I know of is to dissolve out the carbonate of lime by using sulphuric or muriatic acid; or the former after saturating the floor with a strong solution of sal-ammoniac. This remedy will also be effectual should the greyness arise from efflorescence of the salts or other constituents of the cement or mortar, or of the concrete, if any, which frequently, if the substratum is damp, proves an inveterate source of annoyance in this manner. In fact, where the foundation is damp, more care than is usually bestowed upon tiles, which any one will undertake to "rattle down," is necessary to prevent the appearance of salts on the surface. Where eventual dryness is attainable, the tiles may be much improved in appearance, and a gloss obtained, by washing with milk, which is much practised.

Another frequent cause of "encaustic tiles turning dull" is neglect of cleanliness, and I can truly say, that where the foundation was dry, and the owner careful to keep them clean, I have never seen encaustic tiles which did not look quite as well twelve years after laying down as during the first week.

There is nothing in the tile itself to "turn dull;" if kept clean it will never look so. Frequent scouring with a flannel, silver sand, and clean water, is all that is necessary under the most unfavourable circumstances of traffic. The opposite course is also a good one, to encourage an oleaginous crust over the surface by use of milk.

F. HEWES, for MINTON and Co.

#### THE LONDONDERRY MONUMENT AT SCRABO.

THE first stone of the memorial about to be erected to the late Marquis of Londonderry, in County Down, Ireland, and of which we now give a view, was laid on the 28th of February last, as noted at the time.

The monument, which is to stand on the highest point of Scrabo Hill, near Newtownards, and 500 feet above the level of Lough Strangford, will be a tower in the Scottish chateau form. The walls are to be built throughout, and faced, with rubble work of hard basalt. The door and window dressings, quoins, coping, &c. are to be executed in sandstone. The sandstone is procured from quarries at the base of the hill, and the basalt overlying it enables the material for rubble work to be quarried immediately at the site. The mode of construction does not embrace anything peculiar: the several circular roofs are to be executed in sandstone, in the same manner as church spires.

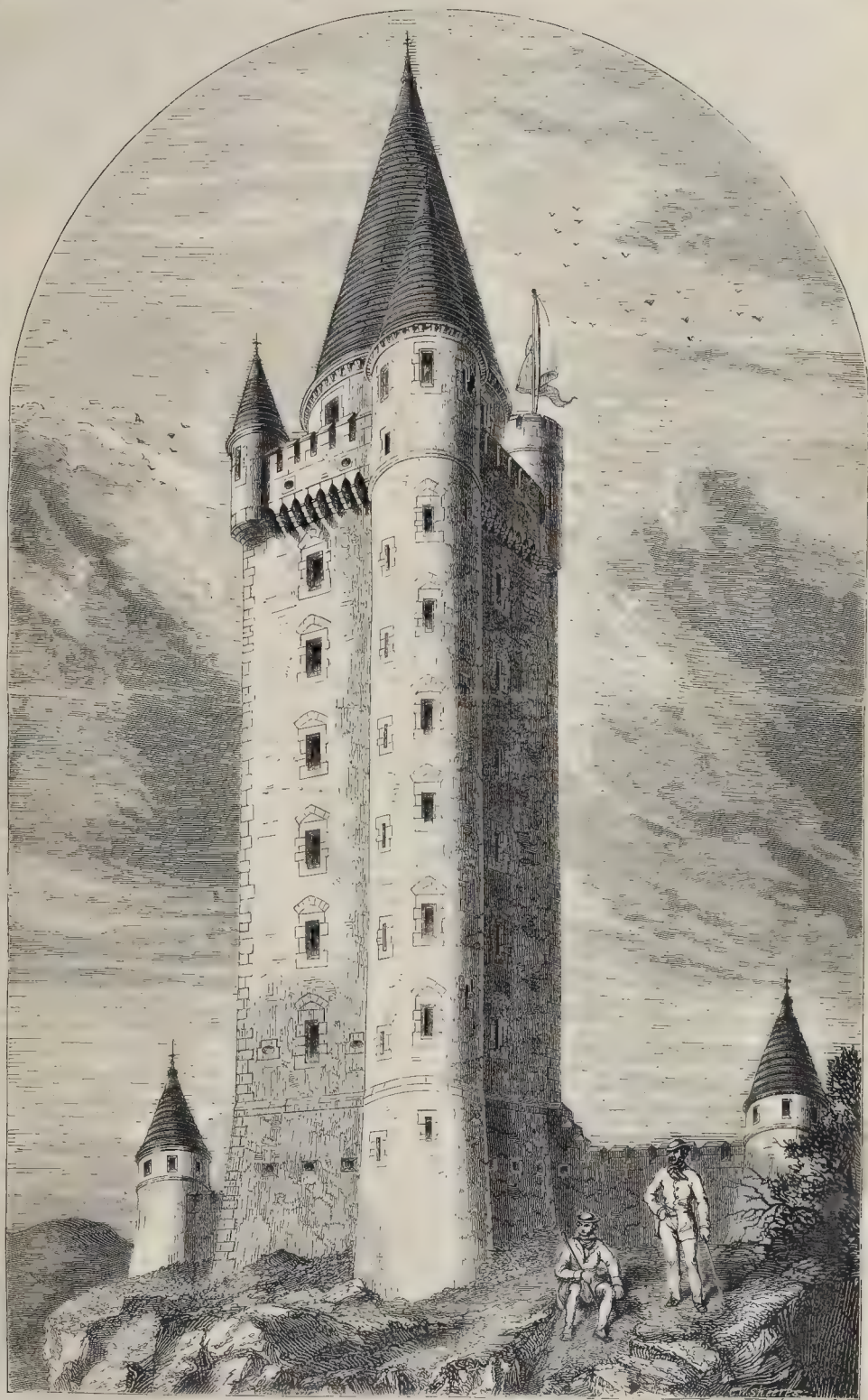
The architects are Messrs. C. Lanyon and W. H. Lynn.

The contract has been taken for 2,000*l.* the exact sum provided by the committee in their instructions to architects: under the present system of competitions, perhaps this fact may be considered rather singular.

The tower will be 135 feet in height. A stone staircase will ascend in the round tower to the parapets and guard chamber, which will be fitted up with an armoury, with oak panels, and groined ceiling. The building will afford accommodation to a *custodian*. The form is considered appropriate to this quarter of the kingdom, inasmuch as similar buildings are not unfrequent in Ulster, into which they were introduced by the Scottish countrymen of the Stewart-ancestors of the Londonderry family.

*THAMES TUNNEL.*—In the week ending 28th of March, 54,611 passengers passed through the tunnel, and paid 22*l.* 10*s.* 11*d.* in tolls.





THE LONDONDERRY MEMORIAL, COUNTY DOWN, IRELAND.—MESSRS. LANYON AND LYNN, ARCHITECTS.



### ST. THOMAS'S CHURCH, NEWPORT, AND THE ROYAL MONUMENT.

SOME time since, we printed a short paragraph respecting the monument which her Majesty commissioned Baron Marochetti to erect in St. Thomas's Church, at Newport, in the Isle of Wight, in commemoration of the virtues and sorrows of the Princess Elizabeth, second daughter of Charles I. We now give a few particulars of the church itself.\*

In the reign of Edward IV. the town was burnt by the French; and St. Thomas's appears to have shared in the injury, as many of the stones had the marks of fire clearly discernible, when pulled down in 1854.

Various alterations had the effect of destroying any architectural uniformity that might have originally existed, and rendered the building an anomalous combination of successive periods. Upon an architectural survey, in 1853, the building was found to be too far decayed to allow hope that any repairs would be effectual; the bearings of the beams being so worm-eaten as only to cause wonder that they had not fallen before. Accordingly, the parochial authorities and the inhabitants generally resolved to raise funds for the erection of a new building. Subscriptions were obtained, her Majesty and Prince Albert heading the list. Two bazaars were also held in Carisbrooke Castle, the proceeds of which (2,000*l.*) materially aided the funds. Architects were invited to send in designs; and one by Mr. Dawkes was selected. The builders were Messrs. Dashwood, of Hyde; and the carvings were entrusted to Mr. Baker, of Kemington.

During the process of demolition, many curious relics of antiquity were discovered. They have been described by Mr. Ernest Wilkins, curator of Newport Museum, where many of them are preserved. Many mural paintings were found: their colours were black, red, yellow, and puce. Those of the middle aisle were better preserved than those in the side aisles. They had been renewed from time to time—the old paintings having been covered with a layer of whitewash, and upon that the new painting was executed.

On August 24, 1854, the first stone of the new building was laid by Prince Albert, with Masonic forms.

The style of architecture is Early Decorated; and the building consists of a nave, with clerestory, side aisles, north and south porches, and chapels; western entrance, arch, and tower.

The interior of the roof is open timbered, with moulded ribs. The large stone corbels carrying the principals have some good specimens of carving, representing maple, nut, thorn, ivy, oak, vine, rose, &c.

A richly-carved screen separated the body of the old church from the chancel. In the new building, this screen has been adapted into a new reading-desk.

The pulpit has been preserved, and placed on its old site, near the chancel. The top or sounding-board, is an irregular octagon.

The north chapel contains her Majesty's tribute to Elizabeth Stuart. Near this spot, "about the middle of the east part of the chancel," the princess was interred. But the memory of this event passed away; till it chanced that, in October, 1793, some workmen who were digging a grave to receive the remains of the Hon. Thomas West, accidentally discovered the initials E. S. engraved on a stone in the floor. Beneath was a vault containing the princess's remains. The coffin was of lead, ridged in the middle, and in good preservation. An inscribed plate proved its identity, by this inscription:—"Elizabeth, 2<sup>nd</sup> daughter of J<sup>st</sup> late King Charles, dec'd 4. Sept. 8. MDCL."

A tablet was then erected to perpetuate the event; but that also at last departed, and no further memento was added till her Majesty rescued the memory of the princess from the neglect into which it had fallen. For the monument, sunk 2 feet 6 inches in the wall, is a space with the stone back carved to represent bars of a prison. In front, iron spikes depend about a foot from the top. Below is a figure of the princess, in Carrara marble, the dress in accordance with the Stuart period. One delicate arm and hand rest on the waist: the other is extended

by the side, with the hand partly open. The neck is bare; and the cheek reclines upon an open Bible. Gothic mouldings are, on either side of the monument, continued square round the top, the head of the opening being segmental. The height is 5 feet 6 inches; width, 8 feet 3 inches; projection from wall, 3 inches. The figure is well spoken of, but the niche, with its mouldings, if we may judge from an engraving, is wanting in the right character and effect.

Accommodation is provided in the church for 1,460 worshippers; and the total cost of erection and fittings is 10,719*l.*

We have gleaned these particulars from a tasteful little volume, by Mr. Samuel B. Beal,\* which contains a view of the church and one of the monument. The writer deals too freely with superlatives, but the book will nevertheless be found a very useful and pleasant companion to the church.

### CATTLE IN LONDON.

ALTHOUGH the new regulation respecting the slaughter-houses of London has effected much good in certain districts (particularly in the City), still it is by no means uncommon to see a flock of sheep dropped, and pushed through trap-holes, into deep cellars, or oxen persuaded by blows, tail-twisting, and other gentle means, into the doorways and narrow passages of ordinary dwelling-houses, and then slaughtered in most unlit and inconvenient places, which are surrounded by thick populations.

Reflecting on the evils of this practice, which is not only injurious to health, but also the cause of considerable waste of valuable material into the sewers, the writer visited, the other day, the recently erected slaughter-houses at new Smithfield-market. These are spacious and properly ventilated places, fitted with the proper machinery for hoisting heavy animals: there are receptacles for the various kinds of refuse, almost the whole of which is sold at a profit, and but little is allowed to pass into the great drain, which runs to Essex.† At frequent intervals, everything is cleared away, and by means of an elastic hose, and powerful force of water, the roof, walls, and floors, are so thoroughly purified, that no taint remains. Several of the London butchers are beginning to avail themselves of these places, finding that it is better and cheaper to have their animals slaughtered in properly appointed houses than in ill-arranged dark and poisonous slums.

On market days, it is an extraordinary sight, at Smithfield, to see the crowds of oxen and sheep which are driven through the streets to various parts of the metropolis, in some places almost stopping the other traffic. The process of driving over long distances of the hard and often slippery pavement, does not improve the quality of the beef and mutton; for it is a well-established fact, that bullocks lose 20 lbs. when driven 100 miles, sheep, 8 lbs. and hogs, 8 lbs. each; and it has, therefore, been found that it is cheaper to send them by railway than to incur the loss of weight, tollage, and cost of driving.

Large quantities of small-sized beef and mutton arrive in London by railway and steam-packets, ready prepared from parts of Wales and other remote districts, and are sold at a moderate price; and it seems to be worth the consideration of the larger cattle traders and the London meat salesmen, if it would not be to the advantage of all to slaughter the animals on their farms, and send them to London ready for the shop. It is, unfortunately, difficult to get rid of old customs; and we fear that it will be some time yet before the slaughtering of animals in this large metropolis has ceased. We hope, however, that before the summer comes, the cellar slaughterhouses and other wrong places will be visited, and made conformable to the regulations. The poor miserable London cows, many of whom, in their dark and unwholesome lairs, look almost as wretched as the horses we have often pitted in the coal-

mines, should be looked after: some of these places, which are to be seen in narrow alleys, are so contrary to the nature of the dumb brutes, that it is impossible that they can be in the condition to supply wholesome milk. The grains from the neighbouring breweries, and other improper kinds of food, cause the animals to yield a larger quantity of a liquid called milk than they would do if roaming in the fields, or fed with pure materials. The children who are made to depend on such milk suffer greatly. It will be a good day for the poor beasts, and for the rising generation of Londoners who drink milk, when the cows are driven out of their cellars into the green fields.

### MANAGEMENT OF PORTLAND CEMENT.

ALLOW me to make a few observations on the "Suggestions" offered by a "Clerk of Works" (page 167), in answer to your correspondent "Rustie," of the preceding number (March 11th), respecting the varied colours which occur in the drying out of Portland cement stucco fronts.

His first suggestion is good, viz. that of colouring with Portland cement colour: his second, that of "mixing large quantities of cement with well-washed sand in a huge trough," is an idea that is at once fallacious and impracticable, for reasons that are obvious. Imprimis, it is well known that either Portland or Roman cements while in their powdered state lose their strength if they are exposed for any length of time to the action of the atmosphere or to damp, thus becoming actually dead; next, the improbability of being able to dry the sand after the washing process—especially in large quantities—sufficiently to justify its being mixed with the cement in the manner described; as the almost imperceptible moisture which is found in the sand for weeks and months after washing—to say nothing of its being afterwards exposed to atmospheric influences,—would in a few days destroy from 50 to 75 of its virtue. The result of such an experiment must necessarily be a failure,—while the authority upon which it is based is calculated only to mislead. If experience teach, its teachings will be found to be diametrically opposite to those of your correspondent; and, instead of mixing the sand and cement in large quantities, it advises that they be mixed in small quantities; sufficient only for one "gauging," the size or quantity of which should be regulated according to circumstances, such as the number of men that are supplied from any one gauge-box with it, and whether they are roughing in or finishing off. Be that as it may, when mixed it requires using immediately; and in no case attempt to wet up again and use, after it has been standing for some time, and found to be "gone." Care also should be taken that the same ratio be always observed in the mixing of each separate gauging: if not, it is either too "fat" or too "poor;" this is of the greatest importance, as the neglect of this precaution affects—not so much the colour as—the strength of the stucco generally; and is one of the principal causes that produces the cracks on the surface, so frequently complained of by some of your readers. Lastly, open but one cask or so at a time, and avoid all unnecessary exposure to air, &c.; and as the work progresses colour it as fast as it is finished, with Portland cement colour, thinned with beer grounds (or bottoms): it is then readily absorbed, and, as the cement dries and hardens, the colour becomes fast: a second coat will be found necessary when completed, but not so thick as the first coat already given: this will, after a time, dry out in one uniform colour, and have the appearance of a Portland stone front. A PRACTICAL MAN.

### PRACTICAL PERSPECTIVE.

SOME time since mathematics were not a little startled at an assertion made by the head-master of the Training-school, at Marlborough House, namely, "that a circle seen in perspective is not an ellipse."

A demonstration of the commonly received notion very properly appeared in the *Builder*, but I did not expect that that demonstration would make proselytes of the supporters of Mr. Borchett's new theorem (?), because a tolerable acquaintance with Euclid's elements, as applied to conic sections, would inevitably prevent any one being led astray by any assertion incompatible with true geometrical principles. The readers of the *Builder* will not, therefore, be surprised when I tell them that there are other teachers of drawing, who still adhere to the new notion.

Now, I am not about to give any demonstrations myself, but having been asked by one teacher for some authority of sufficient importance, to induce him to acquiesce in the commonly received opinion, without being at the trouble to learn conic sections for himself, I would merely refer him and others of the same

\* This notice, with some others in the present number, as been in type several weeks.

\* Published by Etheridge, Newport; Dalton, Cockspur-street, London.

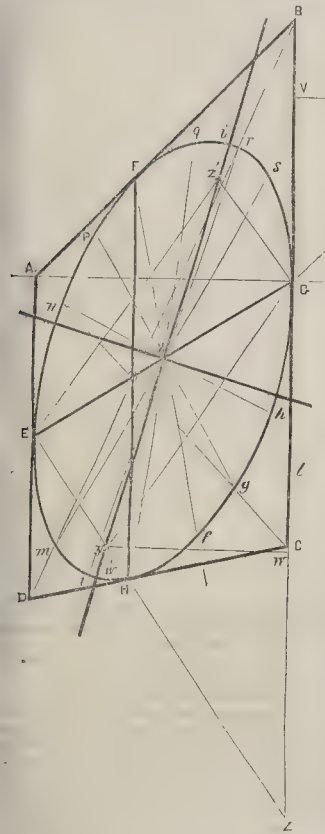
† The Parisian butchers, it is told, do not waste a particle of either oxen or sheep: all is used for food, or for agricultural or chemical purposes.



school to Dr. Hutton's, Francour's, and Hamilton's conic sections. The first mathematician demonstrates the nature of perspective representations of circles, simply from Euclid's elements; the other two do the same thing by analytical geometry. Dr. Hutton's demonstrations being the simplest, I would recommend his book to beginners in preference to those of the other mathematicians, although the latter are Cambridge books, and may, therefore, have sufficient power to convert, notwithstanding the contents may not be so easily understood.

I would not have taken any notice of this subject

in the columns of the *Builder*, if it had not been for the purpose of making known a very short and accurate method of representing circles in perspective, which has not, to the best of my knowledge, been made use of before. The usual method is that of inscribing the actual circle within a square, making sundry intersections, and then transferring those intersections in the usual way to the perspective. My method disposes of these preliminaries entirely, and from lines drawn on the perspective itself, any number of points in the curve may be expeditiously and accurately obtained.



true position of the elliptical axes: this may be done very expeditiously as follows: make the line  $Ez = w^2$ , the transverse axis bisect  $Gz$  in  $w$ ; draw  $wy$  perpendicular to  $Gz$ , cutting  $Ez$  in  $y$ ; then will  $yl$  be one of the foci to the ellipse; the transverse axis may then be drawn through  $yz$ , and the conjugate at right angles. When this is done the curve will at once assume the appearance, as it really is, of a true ellipse; and any one may prove practically that this is really the case by drawing the curve in the usual manner, and comparing it with the known properties of the ellipse. The problem for finding the transverse axis is founded on the known property of the ellipse, that  $E + E'y = w^2$ ,  $y$  and  $z'$  being the foci, and  $EG = Ez$ .

I believe the mistake about the nature of the curve has arisen from confounding the perspective, horizontal, and vertical diameters of the circle with the axes of the curve which represent the circle: this is, indeed, the ground of Mr. Burchett's assertion (see page 78 of his "Practical Perspective").

All that I have written in confirmation of the curve being an ellipse is founded on the supposition that the plane of the picture cuts vertically through an oblique cone, without cutting the circle to be represented, which is the base of the cone,—the point of sight being the apex. If, however, it be required to represent the perspective of a circle on plan, and the point of sight be in a vertical line either above or below the circumference of the circle, then the perspective of the circle on a vertical plane will be parabolical; and if the point of sight be within the circle the curve will be hyperbolical. For instance, if it be required to make a perspective view of the interior of a circular building, and the station point be at the entrance, upon the circumference of the horizontal circles to be represented, then all the representations of such circles will be parabolical, and may be accurately drawn on the perspective itself, with even greater rapidity than the elliptic curve.

In conclusion, I may state that I have not thought it necessary to prove everything relative to my method; I have merely applied the well-known properties of conic sections in a way which I think is somewhat more expeditious and accurate than what is usually adopted.

JOHN BURLISON.

#### CHURCH-BUILDING AND PROVINCIAL NEWS.

**Yarmouth.**—A new church for beachmen and seamen, to be called St. Andrew's, is to be erected here, on the open ground to the westward of the "look-out." The nave will be 55 feet 6 inches in length, and in width 26 feet, having a centre aisle 4 feet in width. The chancel and apse will be 24 feet in depth, and the vestry on the south side, with a porch adjoining. There will be another entrance and porch on the north side of the nave. The church will seat about 600. The architecture will be Early English, with lancet arches and high pitched roof. The walls will be of cut flints, with brick on the inner surface. The foundations will be in concrete, and the walls will be supported by ornamental buttresses. The jambs, sills, and mullions of the windows will be of Coen stone, and the plinths, eaves, quoins, slopes of buttresses, copings, labels, and bell-turret, of hard Bath stone from the Box quarries. The roof

will be covered with Delabole slating, and the windows will be in lead panes. The designs have been prepared by Mr. J. H. Hakewill.

**East Peckham (Kent).**—The church of East Peckham is being restored under the direction of Mr. Joseph Clarke. The interior of the chancel and south chapel are completed with the exception of the proposed new roofs. The work has been carried out by Mr. Carruthers, of Reigate, who has had considerable difficulties to overcome in taking down and rebuilding the arcade and chancel arcades. The chancel fittings are of oak. The floors are laid with Minton's tiles, and the steps are of Bethersden stone, which so nearly resembles Parbeck, as often to be mistaken for it. Several works of interest were discovered during the restoration. A memorial window by O'Connor has been placed in the chapel. There are two curious objects of interest worth noting; one, an iron instead of a brass cross, inlaid in a ledger of the date 1487, the iron probably coming from the neighbourhood; and in one of the north windows of the nave is a curious inscription, painted in the place of, evidently, a distasteful representation which existed at the time, as follows:—

"Here stood the wicked Fable of St. Michael wayeing of soules,  
By the lawe of Queen Elizabeth according to God's word is taken awaye."

**Eastbourne (Sussex).**—The new cemetery for this parish is just completed. Two chapels in the Early English style have been erected, built in flint and brick, with Bath stone dressings. The Episcopal chapel is surmounted with a bell turret, with a vestry adjoining, entered by a porch; and measures internally 36 feet by 18 feet, with seats for fifty persons. The Dissenters' chapel is 25 feet by 18 feet, with a vestry, and seats for thirty persons. The ground is laid out in paths and shrubbery borders, planted; and contains four acres: it is surrounded by a brick and flint wall, with a gateway, and stone piers from the old London-road. The chapels were designed and carried out under the superintendence of Mr. Ferrey. Mr. Haines, of Eastbourne, was the builder, and Mr. S. Stapleton clerk of works. The total cost, including the conveyance of the land, is about 2,000l. The Episcopal chapel and ground will be consecrated in June next.

**Sudbury.**—The taking down of the old Grammar School buildings here was commenced on 17th ult. The school-house is believed to be the original one, built about 350 years ago. The doorway is of ancient brickwork, the sides being formed with moulded bricks, and a Gothic elliptic arch over, corresponding with the sides. The bricks, it is said, are to be carefully preserved.

**Clifton (Bristol).**—Christ Church, Clifton, which has hitherto remained unfinished owing to the want of funds, is about to be completed. The tower will at once be carried up to its full height. The cost will be defrayed by subscription, and 8000l. have already been raised; but between 5000l. and 7000l. more will be required to complete the tower in the ornate style of the building. The opportunity will be taken to build an additional aisle, the cost of which, estimated at 1,300l. will be defrayed by the Rev. Mr. Revan, one of the curates of the church. The completion of the church has been confided to Mr. Ewen Christian.

**Middlewich.**—The church of St. Michael, in this town, which has become mutilated partly from causes during the civil wars, but more from ruthless churchwardens since, is now about to be restored by Mr. Clarke. The whole of the interior will be swept away, leaving, however, the interesting memorials of the Vernon family in the Baron's Aisle and Lady's Chapel; and, instead of the galleries round the church and the present little boxes or pews, the church will be seated with handsome seats raised to the original levels of the floors. The chancel will also be restored; and the tower, which seems constructed for the purpose, made the baptistry and the present font moved into it. Mr. France, of Bostock Hall, carries out the restoration of that part of the plans which comprises the chapels attached to the Kinderton lands, and held from the Conquest down to a recent date by the same family, the original barons of Kinderton. The Jacobin screens will be preserved, and all that is interesting. Besides these works, it is intended to restore, if funds can be found, the decorated front as a memorial to the late Rev. Thomas Hulce, the founder of the Hulsean Lectures, who was buried in this church.

**Bakenell.**—Mr. Allard is about to commence some very extensive additions to his mansion at Barton Cloves, near Bakenell, under the direction of Mr. T. Barry, of Liverpool. The tender of Mr. Hughes, of Liverpool, for the first contract, amounting to 4,893l. has been accepted.

**Warrington.**—The Warrington Cemetery was consecrated by the Bishop of Chester on Monday before last. The three chapels and lodges are built from the designs of the architect last named.

Let ABCD in the accompanying figure represent the perspective of a vertical square, whose plane is not parallel with the vertical plane of the picture; BA and CD being lines converging towards the vanishing point, and suppose it be required to represent the perspective of a circle within the square represented by ABCD. Draw the diagonals, BD and AC, and through the intersection at O draw HF vertically, and GE to the common vanishing point: then will GE and HF represent accurately the horizontal and vertical diameters of the circle, and the sides of the quadrilateral will be tangents to an described ellipse, touching at the points EFGH. Thus the method is very common; but for the sake of accuracy, more points are needed. Now, because the tangents AD, BC are parallel, the line EG will pass through the intersection of the conjugate and transverse diameters of the ellipse: hence, bisect EG in  $x$ , draw  $Fx$  and  $Hx$ ; make  $xq = xH$ , and  $xf = xE$ ; then will  $q$  and  $f$  be points in the curve of the ellipse. Further, draw GF, making an angle of 45 deg. with, and equal to GB; draw TV perpendicular to GB, and draw a line from V to the vanishing point, cutting the diagonals at  $r$  and  $n$ ; cut the diagonals at  $m$  and  $g$ , by vertical lines from  $n$  and  $r$ ; thus four points more are found in the curve: on again, draw lines from these last found points through the centre  $x$ , and four other points will be found in the same manner as  $q$  and  $f$  were found: thus then are fourteen of the most essential points in the elliptic curve found. Now, all this may be done in much less time than it has taken me to describe it, and I am sure the curve will be more accurately represented than by the usual methods. It is frequently very desirable to know the



**Liverpool.**—The first section of the new landing-stage was safely launched on Monday in last week, from the builders, Messrs. Thomas Fernon and Son, at Tranmere, and moored on Thursday, at the Prince's Pier. The second section was to be launched on Saturday, and placed in its position the same day. It will take a considerable time to rivet the two sections. The portion moored on Thursday was one-fourth of the stage.

**Chorley.**—On the 19th ult. the first stone of a Roman Catholic Church was laid at Aspall: it is to be dedicated to "Our Lady of the Immaculate Conception." Size of church:—Nave, 64 feet long; width (including aisles), 39 feet 5 inches. Chancels and small chapels will be added at a future period. Style—Early Decorated Gothic. Architect—Mr. Goodman, London. Builder—Mr. James Fairclough, Wigan.

**Bradford.**—The church of St. Mark, Low Moor, has been consecrated. It consists of a nave, transepts, and chancel, with a turret and spire, vestry, &c. The style is Early Decorated. The nave consists of four bays, in each of which is a two-light window, three-foiled, with alternate tre-foils and four-foils in the head, as are the two windows at the west end. Above the two last is one of a spherical triangular form, composed of six tre-foils. The transepts on their east and west sides are lighted by three tre-foiled windows under arches of construction, having their heads filled in with a four-foil. On either side of the south transept doorway is a slight tre-foiled light, and above a wheel window, 12 feet diameter, formed of a centre four-foil and eight radiating tre-foiled lights, filled in with small four-foils. The north transept differs from this only in having no doorway, and having a small tre-foil in the gable for ventilation. The south side of the chancel contains a three-light window of interesting tracery, the light and the tracery tre-foiled. The east window is of five lights, and is composed of two fenestallae, and a complementary light. The gable contains a spherical, tre-foiled triangular opening. The turret is of three stories, surmounted by an octagonal spire, rising to the height of 80 feet. Entering by the south doorway, the font stands on the west. It is of cup or goblet form. The woodwork of the seats is deal, stained; the remainder of oak. The chancel arch is of three orders, the moulding resting upon deeply carved capitals and shafts. The chancel is entered from the nave by a flight of three steps. The floors of the aisles and the landing of the chancel are laid with plain Staffordshire tiles; the space within the rails with Minton's pattern tiles, black, red, and buff. The roof of the nave is composed of arched ribs, which run down the walls, and rest upon carved stone brackets. The roofs of the transepts and chancel vary in construction, whilst the four meeting at the intersection are formed of arched braces, resting upon carved stone corbels. The windows are filled in with Hartley's patent rolled rough plate glass, furnished by Messrs. Watson, of Dunfermline. The stained glass at the west end, which is of decorated character, but, according to the *Bradford Observer*, from which we quote, not very effective, is from the same firm. The dimensions of the church are as follow:—Nave, east to west, 68 feet; north to south, 24 feet. Chancel, east to west, 22 feet 6 inches; north to south, 19 feet 6 inches. Transepts, east to west, 20 feet; north to south, 18 feet. Vestry, east to west, 9 feet; north to south, 10 feet. Turret, 10 feet 6 inches span. The accommodation is on the ground-floor for 350 sittings; in the transept galleries, 120 sittings. The architects were Messrs. Mallinson and Healey.

**Bathgate.**—Plans for the proposed Corn Exchange in Jarvey-street are thus described in the *Falkirk Herald*. The elevation is simple, and when the building is finished it will have a good effect, and be an ornament to the town as well as a great public convenience. The front portion of the building is to consist of large shops on the ground floor, with a commodious hall on the second story for public meetings. This hall is to be lighted by large arched windows, and the shops are to have windows of plate-glass. A large gateway in the centre will admit the public to the market behind; and at one end of the building there is to be a steeple and clock. The frontage of the building is 40 feet, and the depth of space occupied is nearly 90 feet. The market area is to be roofed with glass. Upwards of 1,500*l.* have been subscribed.

**Portsoy.**—The new building for the Ladies' Seminary, at Portsoy, has been contracted for, the contractors being, for the masonwork, James Wilson, Portsoy; joiner-work, W. and P. Thomson, Portsoy; plaster-work, Innes and Ross, Banff; slater-work, James Watson, Portsoy.

**Netherdale.**—The *Banffshire Journal* states that additions and repairs are about to be made on the House of Netherdale, in that county, the residence of Mr. T. G. Rose Innes, of Netherdale. The house is situated in the parish of Marnoch, overlooking the Deveron. Besides considerably heightening the pre-

sent building, two large wings are to be erected. For the mason-work, Fraser and Son, Aberdeen; carpenter-work, Rennie, Aberdeen; slater-work, Walker, Banff; plaster-work, Simpson, Elgin.

#### A RECOLLECTION OF THE LATE GEORGE STEPHENSON.

THE writer of this notice remembers well, thirty years or so ago, in the north of England, the old colliery tramways; the "loggerheads," or pumping-engines, for taking the water from the coal-mines; the inclined planes on which the loaded coal-waggons were made to draw up those empty; and one of the first of the locomotives, an unwieldy apparatus, with outsetting ironwork, which moved something like the wings of a bat, and in its progress made a most horrible and snorting noise. This engine, called the "Iron Horse," was able to travel at the rate of four or five miles an hour, dragging after it numerous waggon-loads of "black diamonds." This was a great improvement on the old tramways, which seldom, on an average, exceeded a speed of three miles an hour.

About this time George Stephenson, who has himself felt pride in stating that he had worked for twopenny a day, and eaten a red-herring for dinner at the pit's-mouth, chanced to be employed in caring for the "loggerheads" at one of the late Lord Ravensworth's pits, when his genius was discovered, and, from very small beginning, Mr. Stephenson was enabled to open a manufactory for engineering apparatus, which grew rapidly, and in a short time a long regiment of workmen might be seen at the proper hours moving to and from Stephenson's factory on the Forth banks at Newcastle-on-Tyne. The railways were projected, and the writer well remembers seeing the prize locomotive engine tried in this place.

The labours of this self-taught man in connection with the commencement of railways are so well known, that it is unnecessary to enter into particulars. Having watched and marvelled at this wondrous introduction, and having from school-boy days been as familiar with the name of George Stephenson as with that of any other well-known fact, it was with no little pleasure and curiosity that I availed myself of the opportunity of meeting with this celebrated man. This took place in 1845, that year of railway speculation, when civil engineers' and surveyors' minutes and hours were worth fabulous sums of money. The offices of Mr. Robert Stephenson were filled with a crowd of persons of various conditions seeking an interview, and presented very much the appearance of the levee of a minister of state. Here, amongst others, popped in the "railway king," followed by a sort of staff of persons. Amongst the group appeared a gentleman of middle height, neatly dressed in black: the coat of old-fashioned cut, with square pockets in the tails, and the pocket-handkerchief hanging some distance out, a white neckcloth and a large bunch of seals suspended by a watch-ribbon, completed the costume of George Stephenson; for he it was who was present, engaged in an apparently pleasant gossip with those nearest to him, during which there was an opportunity of examining the features of the man who, from the most humble rank, had raised himself to the position of a public benefactor, and to the company of kings and other magnates. The face in many respects resembled that of Thomas Bewick, the engraver on wood; the forehead large and high, projected to a considerable extent over the eyes—a peculiarity which may be observed in the heads of many who have been eminent in the higher departments of art and constructive skill. The hair was almost white, but his countenance was ruddy and seemingly glowing with health. The mouth was firmly marked, but with a lurking humour in both that and the eye; and there was something so easy and gentleman-like in his general manner, that most must have forgotten his early struggles and disadvantages.

Mr. Stephenson's Northumbrian guttural was particularly distinct, but seemed to give emphasis to his speech, and it was remarkable how readily he varied his discourse with different people. To one gentleman he said,—"We want from the coal-mining and iron producing

and manufacturing districts a great railway for the carriage of these valuable materials. We want, sir, you see, if I may so say, a sort of stream of steam directly across the country, from the north to London, and from other similar districts to London: speed is not so much an object as utility and cheapness. We would want, sir, a very broad gauge and great strength in all the materials." With another person he got quite animated on the subject of agriculture and stock-breeding. "You see, sir, I like to see the coos' [cows] backs at a gradient something like this" (drawing an imaginary line with his hand), "and then the ribs or girders, sir, will you see carry more flesh than if they were so and so."

In these railway times many young limbs of the law and others came into unnatural positions and some endeavoured to hide deficient parts by extensive personal decorations. A youth of this description chanced to come in Mr. Stephenson's way on the occasion above mentioned, when, after the usual exchange of civilities, he made something like the following remark:—"You will, I hope, Mr. —, excuse me; I am a plain-spoken person, and am sorry to see a nice-looking and rather clever young man like you disgraced with that fine-patterned waistcoat and all these chains and fang-dangs. If I, sir, had bothered my head when at your age with these things, I should not have been where I am now."

#### COHESIVE STRENGTH OF STONES.

WILL some of your practical, scientific readers favour me with some remarks on this important point? The crushing weight per square inch or foot of a stone being known, with what proportion of this may it be safely trusted for a constant load?

From an account given in Wesle's "Engineers' Pocket-Book" (1852-3), it appears that the calculated maximum weight on the piers of Hungerford-bridge is about one-quarter of the crushing weight of red brick. Would this be safe as a constant load?

From experiments given by Sir J. Burgoyne ("Treatise on Blasting"), it appears that the weight with which granites are fractured varies from 590 to 883 of the crushing weight; sandstones from 636 to 943. I should be obliged for any further information or reference to where it can be obtained.

PETRUS.

#### OXFORD ARCHITECTURAL SOCIETY.

At the last meeting of the term, held on the 18th ultimo, Mr. Lowder read a paper "On the Proper Construction of Town Churches." According to the *Oxford Herald*, the great principle which was advocated was unity, which was stated to be the great secret of success in ancient buildings, and the only way of returning again to ancient excellence. The difficulties with which architects had to contend in the construction of town churches were discussed in detail. They formed four heads; namely, in materials, site, and arrangement, those that arise from deficiency of means for completing a building, and local restrictions. The propriety of using brick or stone in particular localities was considered in the first. In the second, the general subject of correct arrangements was entered into, in which the necessity of unity and harmony was strongly enforced. The third advocated the partial completion of buildings on a large scale, instead of cramping the design by finishing at once. The fourth referred to Building Acts and other restrictions of a similar nature. The paper was concluded with a suggestion for a school of architects, and some observations upon the evils of the existing state of competition.

#### THE GLASGOW ARCHÆOLOGICAL SOCIETY.

This society met on the evening of the 28rd March, Sheriff Steele in the chair, when the secretary submitted a report, showing that the progress already made towards organizing the society was very satisfactory.

The Chairman delivered an address on the importance of archaeological pursuits. He claimed for the archaeologist a position with the metaphysician, the moralist, and the historian. He deals with the elements of historical truth, and searches out for the historian his most valuable resource—in the records, the monuments, of past ages. The sheriff then referred to the variety of objects which interest the intelligent archaeologist; and concluded by pointing out the favourable position Glasgow occupied as a field for antiquarian investigations—as a seat of learning, of commerce, of enterprise, and as being in the



neighbourhood of Roman, Celtic, and Scandinavian antiquities.

Mr. Laurence Hill brought before the meeting three original letters from King James VI. to the laird of Craighall; and also an original letter from Cunningham of Craignets, dated 26th November, 1696, demanding from the freeholders of Renfrewshire payment for his services as M.P.; and civilly pointing out to them the course of legal proceedings he must resort to in cases of refusal or delay. Mr. Hill presented these MSS. and also a silver penny of the reign of William the Lion, to the Society.

Mr. John Buchanan afterwards read a few notes regarding the chair which was occupied by the chairman during the evening: it belonged to the last Renfrewshire witch, who was burned at Paisley so late as 1697. He also exhibited several interesting memorials of old Glasgow.

#### THE SAXON CHURCH ON DOVER HEIGHTS.

MR. C. ROACH SMITH has been drawing attention to this most interesting relic and memorial, as being threatened with destruction by the Government, who, it was stated, were about to build on the site of it. Mr. Smith said,—

"The Roman Pharos and the Saxon church upon the heights of Dover, though probably all but unknown to the majority of the thousands of tourists who yearly pass by them to visit objects of antiquity in other countries, are well known to and appreciated by the better educated classes; and even many of the inhabitants of Dover itself have a certain respect and affection for these noble landmarks of two distinct historical epochs. I need not point out to you the peculiar features which make these edifices dear to the antiquary and to the architectural student."

Mr. Akerman, the secretary of the Society of Antiquaries, has since published a portion of a letter from Lord Panmure, in answer to a memorial addressed by the Society of Antiquaries, in the following terms:—

"I am directed by the Secretary of State for War to inform you that the War Department has no intention at present of disturbing the ruins of the ancient church at Dover Castle."

This will be heard with satisfaction. We would denounce the threatened Vandalism in the strongest language. It would be a robbery committed on posterity. As a suggestive autograph of the past, an undeniable corroborator of written history, the ancient church at Dover should be sedulously preserved.

#### RECENT BUILDING PATENTS.\*

1445. T. SCHWARTZ.—*An Improved Brick*. Dated June 19, 1856.—The inventor removes vertically from the central portion of the brick such a quantity of the material as can be dispensed with, and gives a peculiar configuration to the cavity.

1324. J. BRIGGS.—*Improvements in Blocks and Bricks for Building*. Dated June 4, 1856.—The parts of blocks and bricks for building, whether of wood, stone, or other substance, are constructed in various corresponding forms, and so that each has incutments into which may be inserted rods, bars, pins, &c., or bolts, so as to hold them together.

1370. L. D. OWEN.—*Improvements in the Manufacture of Artificial Stone*.—A communication. Dated May 29, 1856.—Building blocks are formed as follows:—A quantity of coarse silicious sand, as free as possible from clay or other earth, is provided, with a quantity of freshly-slacked lime in powder. As much sand and lime as can be moulded in an hour are then thoroughly mixed (about one part of lime to six to twelve of sand), the lime being the dry powder hydrate produced when lumps of calcined stone are freshly slacked, and the sand having the moisture it has when dug out of the earth. This composition is then placed into the mould of a moulding-press, and submitted to great pressure, and the blocks so produced are then taken out of the mould, raised upon a flat surface, and exposed to the air to dry.

12129. G. GIDLEY and W. CHRISTOPHER.—*Regarding the Bottle or imported India-rubber to a transparent liquid state, so that it may be used as a transparent Varnish or Solution for mixing with colours*. Dated June 2, 1856.—This consists in submitting the India-rubber (preferring the bottle India-rubber) to an alkaline action; also to boiling in water; and then dissolving the India-rubber in suitable solvents.

19176. MARC ANTOINE FRANCOIS MENNON, Rue Napoleon, Montmartre (Département de la Seine).—*A new Composition applicable to the Coating or Covering of metallic or non-metallic Surfaces*. A communication. Dated August 25, 1856.—This

invention consists in the preparation of a non-conducting composition applicable to the coating of surfaces in general, such as walls, partitions, and other parts of buildings, steam-boilers, locomotives, and in short all structures and apparatus to which a protective covering may be necessary. The patentee takes a quantity of argillaceous clays, as far as practicable, of different kinds, and containing a certain proportion of alumina. These clays are kneaded with water so as to produce a constant mass, and to this mass he adds in succession the proportions hereafter noted of mucilaginous, resinous, oleaginous, bituminous, and other substances imperfect conductors of heat. Clays prepared as above, 100 parts; oily substances, or residues, 6 parts; oil sediment, 5 parts; fat, 2 parts; animal charcoal, 2 parts; vegetable charcoal, 2 parts; mucilaginous substances, such as gine, &c. 1 part; wood saw-dust, or ground wood, already employed in the purification of oils, or in drying processes, 10 parts; waste hair, well beaten, 4 parts. To this he adds a decoction of logwood treated with nitrate of iron (to deepen the colour), together with a small proportion of soot. The whole is then thoroughly mixed and brought to the consistency required. The composition is then ready for use.

#### PRINTS AND DRAWINGS.

*The Opening of the Great Exhibition*.—Mr. Bellin's engraving after Mr. Henry Selous's large picture of this event has been published by Mr. Boys, and will be found an excellent memento of that memorable event. "Evil May-Day" has a place in our history: 1851 gave us a "Good May-Day" to balance it. All the leading persons connected with the Exhibition, and those who attended the opening, are shown in the engraving, including that impudent Chinaman who contrived to take in the two greatest nations on the earth, England and France, and whose representations of the case with which he did it may have misled Commissioner Yeh in his estimate of us. The likenesses, especially those on the left side of the picture, are for the most part exceedingly well preserved.

*Works executed by Mr. Myers, and designed by E. W. Pugin*.—Mr. Myers has had prepared for private circulation a chromolithograph, showing the various works which were executed by him from designs by the late E. W. Pugin, and exhibited at the Crystal Palace in 1851, including a canopied altar-tomb with recumbent figure, font, tabernacle, chimney-piece, screen, cross, and cabinet. It was produced at the establishment of Messrs. Day, drawn by Ordish, chromolithographed by F. Bedford, and, apart from the great excellence of the objects represented, is one of the most successful specimens we have seen of the art. The font and tabernacle are now in Pugin's church at Ramsgate. Mr. Myers having presented them to him for that purpose.

#### Books Received.

##### VARIORUM.

THE Supplementary Report of the Association for Improvement of the Dwellings of Agricultural Labourers in Scotland contains two designs for cottages by Mr. W. Fowler, of the cheapest sort of construction. Mr. Fowler having become superintendent of buildings on the Duke of Sutherland's estates at Dunrobin, Mr. James Campbell Walker has been appointed architect to the association, and is to act also as secretary.—In the *Art-Journal*, which well maintains its excellent character, the Rev. Charles Boutell has commenced a series of papers on "The Crystal Palace," as a teacher from ancient and early art. The March number contains the second of them, founded on the Byzantine Court, which, the writer urges, is incorrectly named, and should be called the *Romanesque Court*.—"The Crystal Palace Magazine," new series (Hall and Virtue) is an interesting and well-conducted miscellany, not confined by any means to the building from which it takes its name.—"Adulterations Detected; or Plain Instructions for the Discovery of Frauds in Food and Medicine," is a new work by Dr. Hassall, published by Messrs. Longman and Co. This more condensed and general book of instructions is not intended to supersede the larger work in which so many individual exposures of adulteration were made. A cheap treatise, illustrated with such woodcuts as this new volume contains, and including such plain instructions for microscopic and other detections of adulteration as are given was much required; and, indeed, the public looked to Dr. Hassall in particular for it. It is to be hoped the doctor's inquiries and instructions will extend to other branches of trade besides those connected with food and medicine, though these be assuredly by far the most important.—"A Voice from the Goodwin; or, a Plan for the Prevention of Future Casualties on the Goodwin Sands; by George Chowen," published at 7,

James-street, Covent-garden, proposes the formation of bell-buoys to surround these dangerous sands, so as to warn off all vessels which may be approaching them in mist, fog, or darkness, by the continual sound of the bell attached to each buoy. The idea seems to be a good one, and the construction of the buoy appears to be effective, but it would be well to test the tear and wear of such an apparatus for a short time before trusting the lives of mariners to expected sounds which might not meet the ear in the moment of peril, should a limited experience of the rough treatment of the Goodwin breakers disable the buoys from doing duty.—Mr. Thomas Tate, the author of many educational works, has just published (Messrs. Longman and Co.) "A System of Mental Arithmetic, after the method of Pestalozzi, for the use of teachers." Mental arithmetic is certainly one of the most important branches of primary instruction,—the faculty of mental calculation being almost as useful to a tradesman or to an artisan as the faculty of speech, and ranking highly as an instrument of intellectual culture in general school instruction. The rules and examples given by Mr. Tate seem to be clear and simple, and well adapted to the end in view.

—The conductors of *The National Magazine* continue to introduce articles bearing on the adornment of Home. Part V. with much pleasant literature, contains a suggestion for the ornamentation of window-glass. The glass is to be painted with a thin coating of white; then with a pointed stick, which will remove the wet paint, patterns may be drawn.—Mons. Léon Contanseau, Professor of the French language at the East-India Company's Military College at Addiscombe, and Examiner for direct appointments of Cadets, &c. has compiled a very superior "Practical Dictionary of the French and English Languages" (Longman and Co. publishers). The authorities to whom the author acknowledges his obligations are the French dictionaries of the Academy, Boiste, Bescherelle, &c. and the English dictionaries of Johnson, Webster, Richardson, &c. besides technological and scientific dictionaries in both languages. The work contains various improvements, such as new words in general use, but not in other dictionaries, compound words not translated literally, prepositions annexed to the French verbs and adjectives, showing what case they govern, familiar idioms and phrases, &c.; and there are also abridged vocabularies of geographical and mythological names. This new dictionary is the fruit of seven years' laborious application and research, and must hence be regarded as an entirely new work, and one that was in many respects much wanted, notwithstanding the previous supply of French and English dictionaries. The ridiculous mistakes made by many students in translating English into French, have been found by M. Contanseau to be in many cases the fault of the dictionaries rather than that of the students. It required an intelligent Frenchman, occupying just such an English position as the present author holds, to trace out and correct such radical errors; and the correction of these, together with the incorporation of new words, and the various other improvements, render M. Contanseau's work a very valuable acquisition both to English students learning French, and to French students learning English, as well as to translators generally of two languages so cordially associated as are now the French and the English. As an example of watchful attention in the insertion of new words, we may remark that we here already find the congeners of a new and useful word, first suggested in our own columns within the last twelve months,—namely, the word "stereograph," as applied to the stereoscopic pictures or slides, as they used to be called.—The "Universal House and Land Advertiser," a monthly sixpenny list, published at 1, Brook-street, Hanover-square, contains a classified registry of property on sale or hire throughout the kingdom, and seems capable of becoming exceedingly useful, not only to agents, who can insert their whole lists gratis, but to buyers and hirers of houses and land, who can obtain all requisite particulars as to any three properties here advertised for a second sixpence, after obtaining the "Advertiser" of fifty pages itself.

#### Miscellaneous.

##### MONUMENT TO SIR JOHN FRANKLIN IN LINCOLN.

A numerous attended meeting of the inhabitants of Lincoln, presided over by the mayor, was held last week, when a proposal to commemorate the fame and virtue of Sir John Franklin, the intrepid Arctic navigator, by the erection of a Franklin Institute and Scientific Museum, was warmly responded to and enthusiastically adopted. Some gentlemen who had subscribed 5s. under the idea that a statue only was contemplated, announced their intention of now giving 25s. An alderman expressed his hope that the corporation would, at least, vote 1,000l.



**NEW CHURCH FOR ST. JOHN'S DISTRICT, PADDINGTON.**—A new church is about to be erected in Prad-street, adjoining the Grand Junction Canal. At a meeting of the St. John's Church Association, held on Tuesday evening, the appointment of an architect was decided in favour of Mr. Hawkins, who made the offer to give his services gratuitously. Two other architects had been nominated, and had expressed their willingness to serve if elected, viz Mr. G. G. Scott and Messrs. Francis; but the nature of Mr. Hawkins's proposal determined the votes of the association. "The church will be built in a poor part of the district, and will cost from five to six thousand pounds. Are not these repeated offers of gratuitous services to be deprecated?"—A. B.

**RESTORATION OF THE CARVINGS IN ST. JAMES'S CHURCH, PICCADILLY.**—With reference to the remark in "P. C.'s" article on St. James's Church (p. 94, ante), that the carvings of the altar-screen by Gibbons were thoroughly repaired by two Italian artists, we are requested by Mr. George Lock, of Leamington, to say that the merit is not due to any foreigners, but to himself and a young man who was employed by him of the name of Kent. The contractor for the work at St. James's was Mr. E. Wyatt, of Oxford-street. "I may also state," Mr. Lock adds, "in further confirmation, that on the top of the pinnacles I placed a small tablet, stating I had restored it, with the date, &c."

**THE IRON TRADE.**—At the preliminary meeting of ironmasters, held at Birmingham last week, it was resolved to make no alteration in the nominal prices recognised by the quarterly meeting masters, viz., bars, 9*l.*; hoops and sheets, respectively 1*l.* and 2*l.* per ton dealer. —A New York correspondent of the *Birmingham Journal* says that the progress of America in manufactures is perfectly astounding, and that the best workmen of England and Germany in the manufacture of carpenters' tools, edge-tools, cutlery, &c., are continually arriving at New York. Yankee wares, he asserts, are steadily superseding all others, not only in the States, but in Canada, and even in Australia. "The trade here," adds this correspondent, "has been built up by the high prices of English iron," a result which it needed no prophet to foresee even years since, while the iron trade in this country was running mad under the reckless mismanagement of gambling speculators. It is now to be feared that, notwithstanding the more steady course of the trade lately, it is too late to recall the American trade to its former state of activity. —Among the many new inventions recently patented in the United States, is an expanding anchor, invented by L. H. Gibbs, of New York, who is now fulfilling a contract for 2,000 for the Government. The bit, by means of a single moveable part, fixed in a peculiar manner in a slot in the main bit, bores holes of any size, from  $\frac{1}{4}$  inch up to 24 inches.

**BRANKSEA, POOLE.**—The *Preston Guardian* says, The reported failure of Colonel Waugh, of Branksea Island, near Poole, in connection with the failure of the Eastern Bank, has caused much anxiety in the south of England. The colonel purchased Branksea Island a few years ago for 13,000*l.* The island was then a barren heath, but it is about three or four miles in circumference, and its purchase was considered a bargain. Soon after it was bought, a valuable pottery clay was discovered beneath the surface. Colonel Waugh dug for this clay, and established a colony of workmen on the island. He built a church for the use of his family and workmen, which cost 10,000*l.*, and his residence, Branksea Castle, which he also built, is a costly edifice. The reclaiming of the land and digging for the clay turned out very expensive operations.

**PAINT ON PORTLAND STONE.**—"A. B." would esteem it a great favour if any one of the many subscribers to the *Builder* could inform him how to remove paint from Portland stone. He has some Corinthian pillars, capitals, &c., that have been painted for a quarter of a century, and he wishes to know how to clean them without injuring the stone."

**WARWICKSHIRE ANTIQUITIES.**—Proposals are issued to publish a "Warwickshire Antiquarian Magazine," to be devoted to the furtherance of the study of local antiquities, and for the publication of matters relative to local or family history; notices and illustrations of the principal ecclesiastical, military, and domestic remains in the county; reprints of scarce tracts, broadsides, &c.; county obituary, and other matters of local antiquarian interest. Mr. G. T. Robinson, architect, is to be the editor. The work will be commenced so soon as the names of 200 subscribers have been received.

**SIR HANS SLOANE'S MONUMENT.**—This handsome tomb (let's a old Church, is becoming sadly out of order. The inscription is scarcely legible, and if taken in time, a small outlay would put it to rights. Pray say a word for this reparation: surely the man it reads to our minds was worthy the memorial devoted to his memory.—B.

**KILKENNY ARCHAEOLOGICAL SOCIETY.**—The March meeting of this society was held in the Assembly-rooms, Kilkenny, on the 18th ult. the Dean of Ossory, the president, in the chair, when twenty-five new members, and one honorary member, were elected. The accounts for the past year showed an income of 429*l.* odds, and a balance in hand of 75*l.* odds. Various donations were brought under notice. Mr. E. Fitzgerald, the local secretary of the society at Youghal, sent an account of the destruction of a monumental statue at Youghal, by the sexton, while hastily digging a grave where it lay underground. Mr. Fitzgerald called the attention of the many clerical members of the society to the power that a single word from them in such cases to their sextons would have in the preservation of interesting ecclesiastical and other remains. Several other papers were communicated to the meeting, including one by the last-named gentleman on Archaeology, and another by Mr. W. Williams, of Dungarvan, on Ogham Readings, with an account of the ruins of an Ogham monument recently discovered in the ruins of the church of Kilrush, near Dungarvan, in the county of Waterford, through the illustration of which Mr. Williams contributed a large number of woodcuts.

**TRAMWAY STEAK OMNIBUSES FOR WORKING PEOPLE.**—A correspondent, "Turntable," suggests, amongst other ideas connected with metropolitan and general improvement, the laying down of common T rails, rib downwards, between two blocks of the street granite, and the formation of omnibus engines to carry 100 persons each, or more, and to run from five o'clock in the morning, in various directions, at fares of six pence for twelve miles, varying from four or five miles radius from the General Post-office to lesser distances, and running at the rate of six miles an hour, without stoppage; the floor of the carriage to be only six inches or so from the ground, with a foot-board or step all round, so that workmen might step in or out from the kerb as the carriage passed close to it. This arrangement, he thinks, could be easily carried out were something like order established in the street traffic.

**DUBLIN.**—A Roman Catholic Institution for the deaf and dumb has been erected, from designs in the Tudor Gothic style, furnished by Mr. C. Geoghegan, architect, on a site of about five acres north of the high road from Dublin to Cavan, at Cobra. Mr. Beardwood was the contractor. The local papers speak very well of the building.

**THE TURKISH BATH.**—At the Polytechnic Institution, Regent-street, last week, Mr. David Urquhart lectured to a large audience on the Turkish Bath, the use of which in this country, the lecturer said, he had come 500 miles expressly to urge. He pointed out the difference between the ordinary bath in use here and the Turkish bath, especially as regarded temperature, and the successive processes peculiar to the more elaborate Eastern bath, at same time describing a building which he had been engaged in erecting for the purpose in the south of Ireland. He had filled it up with a chamber corresponding with the frigidarium of the Romans, with an inner chamber, corresponding with the tepidarium and a third large chamber, vaulted, and lighted with coloured glass from above, deep and sombre, which was heated by furnaces beneath. The chamber first to be entered would be heated to 170 degrees, the next to about 100 degrees, and the third was open to the heavens. This building was capable of bathing about 800 persons in the course of every twelve hours, and the expense would not exceed 500*l.*

**ALUMINIUM.**—Mr. W. E. Newton (for a foreign correspondent) has patented a process, by which the production of aluminium is said to be reduced to an essentially practical and commercial form. The inventors have, in the first place, substituted for other apparatus vessels made of cast or wrought iron, of varying form, in which vessels the reaction is effected in the same manner as in vessels of clay. They have also, it is said, succeeded in effecting the reduction in chambers made of brickwork or fire-clay, either heated as a reverberatory furnace, or through the sides. The apparatus employed by preference, however, is a reverberatory furnace, the bed of which, having a portion of it inclined, is arranged for facilitating the collection of the metal as it is produced; but the furnaces ordinarily employed for the manufacture of soda may be used. Another improvement consists in dispensing with the marine salt, which is usually added either to the simple chloride of aluminium, the double chloride of aluminium and sodium, or to the fluoride of aluminium and sodium (eryolite), and in simply adding a suitable proportion of fluoride of calcium.

**DESTRUCTION OF SPENGLAND EXCHANGE MUSIC-HALL.**—On Sunday before last, the Exchange Music-hall here was discovered to be on fire. The roof fell in, and the internal fittings were consumed, nothing being left but the ruined walls. The damage is estimated to be upwards of 2,000*l.* which is insured.

**EXTINGUISHING FIRE WITHOUT WATER, ON LAND AND SEA.**—A suggestion is made by a correspondent, Mr. F. W. Devey, that by simply having the means of shutting up any house in which a fire is raging, the fire might be much more readily subdued than by the access of water and the opening of doors and windows which generally accompanies the use of the water. But firemen are already perfectly well aware of the evil of unnecessarily opening doors and windows in such cases, although in many instances, doubtless, in the hurry and confusion of fires, much mischief is done by not attending to this as a rule. The suggestion has been repeatedly made before, and it is well known at sea when a cargo is fired that the hatches ought to be kept as close as consistent with other efforts to put out the fire. Carbonic acid gas, the general product of the burning, is unquestionably a potent extinguisher of fire, and the fire annihilator acts on this principle; but it seems very questionable whether a burning house can be easily or cheaply shut up in the way our correspondent seems to imagine, as the fire so frequently opens its own way through windows, doors, or roofs, before the interior is sufficiently charged with the carbonic acid arising merely from its own progress.

**CAUSE OF FAILURE IN HEATING CHURCHES, &c.**—My attention has been often called to failures in heating churches and other large buildings. I shall best explain the cause by showing the usual way of fixing. In a small church, say with 160 feet of 6 inch pipe, the boiler holds 100 gallons: the supply cistern, only six gallons, is fixed on a level with the top of the boiler. Now, it must appear to any thinking mind, even without any scientific knowledge, that this is wrong; for, when the water in the boiler becomes heated, then both air and water expand, for the pipes are never full of water: the cistern being on a level with boiler exerts no pressure; consequently, the water is forced over the small cistern, emptying the boiler below the hot-water pipe, then the chance of a flow is gone, for steam has taken the place of water, and not a drop of hot-water flows in the pipes. My plan is this. Let the cistern be placed on the top of the boiler, say 4 feet to the top of cistern; the cistern to hold fifty gallons. This will do for a small church with 200 feet of pipe: if more, make the cistern still larger. We shall now have a pressure equal to the height of the cistern, and an ample supply of water.—G. W. T.

**DESTRUCTION OF EGYPTIAN ANTIQUITIES.**—I saw, the other day, at the Great Temple at Karnak, a person whom I afterwards discovered to be a preacher from New York, hammering away with a pole at the beautiful star-spangled ceiling of the sanctum, endeavouring to detach a "whole star," as he said. "I remonstrated, but in vain; for I afterwards saw him picking out a piece of the stone which bears the effigy and oval of the King of Judah, by which the victory of Shishak over Rehoboam is recorded. Then comes a legion of scribblers. In the grotto at Beni-Hassan, the walls of which are covered with pictures of scenes in the daily life of the ancient Egyptians, among them is a procession, believed to be by some the arrival of Joseph and his brethren. "J. B. Salter, Francis Abrahams, dragoman, Nov. 1856," occupies something like 4 feet square, written with a charred stick over the paintings, while on the ceiling, the delicate colouring and chaste pattern of which any decorator of the present day might advance, tacitly copy, there is "W. Stevenson, 1855," in letters nearly a foot long each, with the smoke of a candle. Who these gentlemen are I have no idea; but there are plenty of the same sort.—Letter in *The Times*.

**THE LARGE BLOCK OF GRANITE,** weighing 33 tons, from Messrs. Freeman's quarries, at Penryn, and which was at the Great Exhibition, has been recently removed to Battersea, for the bed of the large engine erecting by Messrs. Aird, the contractors for the Southwark Waterworks.

**GREAT NORTHERN HOSPITAL, KING'S-CROSS.**—Various additions and alterations are to be made here, Mr. Woodthorpe, architect. Tenders from quantities supplied by Mr. George Enoch, surveyor, have been sent in, ranging from—Payne and Jeffard, 687*l.* to Williams, 555*l.*

**DOUBLE BARS ON THE TOLL BRIDGES.**—Will you give your aid to abolish the double bars on the Waterloo and Charing-cross bridges? Really there is no necessity for them; and after paying the toll and crossing the bridges, it is really a hindrance and a bore to be obliged to go through the same annoyance to get off them. Surely a stop might be placed, if necessary, without a second turnstile marring one's clothes, and in some cases involving disarrangement.—A LADY.

**REGULATIONS AS TO NEW STREETS IN THE METROPOLIS.**—The regulations as to the formation of new streets in the metropolis, about to be issued by the Metropolitan Board of Works, are not yet settled: the law will come up for confirmation this Friday, the 3rd.



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highly artistic Dissolving Views, with description by Mr. L. B. Ingham, daily, at Half-past Four and Half-past Nine. Admission to the whole, 1s.











# The Builder.

VOL. XV.—No. 740.



ON of ingenuity, lend us your ears. There is no greater nuisance in modern houses than that of the transmission of sound through party-walls. Any practical, inexpensive, and efficient means of deadening sound will be a great boon. Solid walls and solid floors transmit sound in the highest degree. The Metropolitan Building Act provides that all party-walls shall be solid, and of a certain thickness in proportion to height and length. How is the evil to be overcome? "For eight years," writes a studious friend to us, "I have occupied a house in London; and, during the whole of this time, there have been neighbours having young families. They are musical, and, I must confess, labour most industriously at the scales: morning, noon, and night, or other child howls and strums, apparently without making any progress." There is no objection to neighbours' children learning music and singing: quite the reverse; but it is most objectionable that walls should so readily transmit sound, and render the young ladies' efforts so widely known. Some persons always take a corner house, so as to be free from such nuisance on one side at least. Is there no remedy?

In nature there are certain simple laws to which men pay little practical attention. Hence are numerous blunders constantly made. Solids transmit sound: polished surfaces reflect sound; cellular substances, and cellular surfaces, absorb and deaden sound. A party-wall built of pumice, would transmit less sound than if built of solid brickwork; and a chambered party-wall, the spaces filled in with small loose particles, would absorb more of any sound than a wall of pumice, in proportion to the extent of chambering, and the character of the material filled in. Pugging and deadening floors is well known: the joists are filled in, betwixt ceiling and floor, with material to absorb or deaden sound. The late Mr. Cubitt had some trouble at Balmoral, with certain floors, and remembered that in taking down an old palace floor (many years before), vast quantities of cockle-shells fell out from betwixt the joists. These had been used in pugging. The idea was acted upon. Cockles were dredged, and brought: the shells were cleaned, dried, and used, with beneficial effect. The cellular spaces thus produced absorbed sound.

Patent fire-proof floors, formed with iron joists and concrete, are terrible transmitters of sound. In some new hotels, the nuisance is a great drawback: sitting-rooms under bed rooms, cannot be used with comfort. But, apart from joists, iron joists, as often used, ruin the ceilings: the iron shows through the plaster and finishings.

Solid party-walls and fire-proof floors are most desirable, if they can be retained and means can be added to absorb or destroy sound. Merely science will accomplish this. Polished surfaces reflect and transmit light: polished steel reflects: polished glass transmits (if both sides are polished): rough grinding the surfaces destroys the power of reflection and transmission. Sound is governed by laws very much as light is,—if the wave theory be accepted. We may, therefore, hope to retain our solid party-walls and our new fireproof floors, and yet get

rid of the nuisance of transmission of sound. Some highly cellular texture may be applied to walls, ceilings, and floors, which shall resist fire and ordinary decay, allow of finish, and yet deaden sound. Who is to invent and introduce such materials? They may patent the invention and make a fortune, if they will only abate the existing nuisance, and enable us to have solid party-walls and fireproof floors without being compelled to hear what is going on up-stairs and in the next house.

## THE ELECTIONS.—SOCIAL PROGRESS.

We have no business—some might say—to meddle with party politics; and we are not about to quarrel with the division of labour which would relieve us from a duty that may be performed better by others. Yet, we represent interests which are deeply concerned in the results of legislation and government,—the public interests as affected by our art, and by the advancement of science and diffusion of knowledge, and those pertaining to the moral and physical condition of immense classes,—in short, social progress in the wide and comprehensive sense. It is on such accounts that we cannot witness unconcernedly, movements in the political world like those which have occupied attention during the past three weeks. Indeed, if the objects of politics have any relation to the meaning of the term, then the *Builder*, on the score of its usual matter, may claim to be a political journal.

The object of government has been defined to be "the greatest happiness of the greatest number." Has that object been followed as yet with the same assiduity by Parliament as out of it; and what is the prospect for the future? We lament that appearances are not encouraging. The course of the elections seems unfortunate in many respects. Without an opinion that Liberal or Conservative, Ministerialist or Oppositionist, as such, could except to, we must say that what has occurred is not creditable to the intelligence of the country.

On the China question the Ministry may be right or wrong,—we believe the former; at least it ought to be considered a correct principle to entrust responsibility to agents: without this, efficient service cannot be expected. The punishment inflicted upon an utterly defenceless people may be wrong nevertheless. On that we express no opinion,—though herein, we do, as we conceive, better than many who have not inquired into the evidence.

A serious question is, whether the machinery of progress at home should stand idle during the best portion of a year, through any such combination of circumstances. Measures affecting the lives, morals, and condition of thousands of our countrymen—but which are not of the nature of ordinary "party questions"—have been kept unsettled for years, only because honourable gentlemen must be verbose and oratorical, and because a notion is that government must be effected through "parties." Does Mr. Disraeli mean to argue that it is better that men should not act by the light of reason, or straightway on their honest convictions?

It is the country, and not Parliament, which is now suffering what Lord John Russell, quoting a former statesman, called the "penal dissolution." It is the country, however, which is itself to blame for what has occurred, and what is going on. Our contemporaries of the general press, too, are not holding the position which they should have as promoters of improvement. So long as the people give to the questions called "political," the first attention, so long will the real political questions be staved off. Many of these last are difficult enough; but so much the more desirable is it to give every scope to their solution by men really patriotic, who devote themselves thereto. But what is it that the constituencies have done? Qualifications for the social questions, as well as Parliamentary experience, appear to be valueless. Men unknown are preferred to those who are the hope—and perhaps the safeguard—of this empire. Individual opinions may prove wrong; but statement of them is essential to arriving at what is right. The *Times* now sees, if it ever doubted, that

men such as Colclough, Bright, Gilson, Laysard, W. J. Fox, Miall, Sir J. Walsley, Cardwell, and others, cannot adversely be excluded from the British House of Commons.

In our own more immediate department, we have to regret the loss of Mr. Bell, at Guildford. Mr. Tite, whose services both in the House and in committees have been of value, has gained by a slender majority, and has a scrutiny hanging over him. Mr. R. Stephenson, Mr. Locke, Sir J. Paxton, and Mr. Wm. Cubitt, are amongst those connected with our class of subjects who remain. The list of members also includes the author of "Eöthen;" Mr. Coningham, who has made so many attacks upon the management of the National Gallery; Mr. Slaney, we presume the same to whom much is owing in regard to the proceedings of former Parliaments in matters of the health of towns, and the condition of the working classes; Mr. A. B. Hope, and Lord Ingestre. Sir Henry Rawlinson was a candidate at Reigate.

In many cases, bribery, under the guise of payments for committee-rooms and canvassers, has carried everything. Is not the fact of the cost, to a candidate, of an election, itself a thing disgraceful to both the Parliament and the country? In some cases, the *free and enlightened* electors have made a special grievance of the fact that their "sweet voices" had not been asked for. Or the most abstruse questions of our day have been solved in a moment, for the sake of electors who required "not a man, but a machine."

Generally, the "cry" of the moment has borne all before it, and electors have been oblivious of the interests which, within another month, they may have painfully before them.

It is perhaps not for us to suggest measures of parliamentary reform,—but we cannot but sometimes think within ourselves, whether education should not be directly represented,—whether, by a modification in the representative system, professions and interests, such as those of our class, might not have their own voice, with advantage to the public good, and without being indebted to a mere chance election by property or population,—also, whether the ministers of the day should not be *ex officio* members of Parliament without votes, and not allowed to seek the suffrages of any constituency.

It is now long since a prime minister of the day opened a session of Parliament with the confession that social improvement had been too much neglected; and to Lord Palmerston, though deprived of some of those who would be his allies, we shall not fail to look to remedy the long delay.

## REMUNERATION OF ARCHITECTS.

Our article, last week, on professional remuneration, referred to the case of a single architect, and did not allude to many circumstances which are of importance, as presented in the relations between the Government and Sir Charles Barry. Much less did we attempt to notice all the questions about which it is desirable that architects should come to some opinion amongst themselves,—if not for the purpose of attempting to enforce rights of theirs at least, that they may be prepared to make such arrangements as will allow them to devote greater, rather than less attention to their duties. We have shown that an architect employed by the Government, may have thrust upon him any amount of *extra* labour,—never contemplated at the outset,—and is likely to receive no consideration for it. That the course taken in Sir Charles Barry's case—assuming him to have assented to a fixed sum—is opposed to the law of contracts, we apprehend is obvious. Every day's experience with builders shows this,—for, general clauses—sometimes framed under the idea that they will include all contingencies—hardly ever have the force expected,—and justly so. The law and the justice of the case equally, decide with reference to the original intention. So much for the treatment which the architect of the Houses of Parliament has received in the mere matter of *extra* services.\*

\* We believe it would be even found—in the case of the Records—that some instructions to the architect were supplied directly, by the Treasury.



Amongst the other questions which remain unsettled, that of measuring deserves immediate consideration. Assuming that the 5 per cent. in the case of large works, might be adequate remuneration for the design, working drawings and specifications, and superintendence, it is questionable whether that rate should be inclusive of adjustment of any accounts, even where these refer only to extras and omissions, as in the case where there is a contract. The few statements which may be found in print, as to matters of professional practice, are hardly to be quoted here as authorities: some of them do, however, include the business of the accounts in the 5 per cent.; and such appears to have been the principle intended to be followed by the Government in the majority of cases which have been referred to. On the other hand, it is the practice of many architects, and especially so with those in the provinces, to charge a certain per centage, on the amount of extras and omissions both, for the duties in connection with the accounts, and in addition to 5 per cent. upon the amount of contract and extra works. Where the builder's contract is one for prices, the question requires to be settled on distinct merits. In such case, the architect's labour in superintendence may be even increased: deduction from the 5 per cent. therefore, is less justifiable in such case than in the other; but the architect should be held fully entitled, on account of the increased labour in measuring, to the sum larger than he could obtain where there was a contract. We are aware that the cases quoted by Sir Charles Barry do not show that such views have been followed practically by the Government. It is, however, clear to us, that the architect of the Houses of Parliament was placed, even in a worse position than the architects were in any of the precedents quoted, and without reference to the extra services. In some cases, as when Mr. Blore was employed at Buckingham Palace, and Sir Jeffrey Wyatville, at Windsor, the remuneration was in effect higher than the 5 per cent.—since, with that rate, the architects were both relieved from the trouble of measuring, which it appears was thrown upon the architects in the other cases. But, this allusion hardly does justice to Sir Charles Barry's case, which involves many points of importance to the profession even beyond what have been noticed.

In connection with the subject of architects' remuneration, some particulars of the payments to a Government architect for services of a varied character—often required from the profession—will be interesting.

We have now before us a copy of a contract, entered into on the 18th February, 1815, between the Commissioners of Woods, Forests, and Land Revenues, and Mr. Nash, "in regard to his employment as architect," in connection with the Regent-street improvements and works connected therewith, "and for regulating his compensation," as well as a copy of "An explanatory agreement," dated 25th April, 1818, and which enter into minute particulars, filling nearly eight folio pages in the appendix to the "Report from the Select Committee on Crown Leases," dated 19th June, 1829. Nash had been employed by the commissioners in making the plans and estimates in regard to the intended street and the sewer, preparatory to the Act of the 53rd of George III.\* and to attend the passing of the Act through Parliament; and by the agreement, he received his formal appointment as architect and surveyor. The remuneration was classed under several heads, according to the duties. Thus he was to receive remuneration at a certain rate for the superintendence of the works of the sewer; other remuneration for designs, superintendence and adjustment of the accounts in respect of public buildings, lodges, inclosures, and railings, pavements, and similar works (including minor sewers), not of a nature to yield compensation under another article of the agreement,—and in rate according as the works were or were not carried into execution; remuneration for all valuations necessary for the purchase or sale of

property, and commission on re-sales; a sum for his original plans for the new street; and, lastly, compensation for letting ground and buildings, and the duties of a surveyor connected therewith. He received also compensation for valuing old materials. The explanatory agreement is framed to show that the remuneration for letting, &c. was to be in addition to any amount allowed for the valuing; and it allowed him per centage upon additional valuations which were required, in consequence of modifications in the intended line whilst the Bill was in Parliament (joint or derivative interests, however, entailing but one charge); and in other points it secured the true intent of the original contract.—The services of the several kinds, and the remuneration for them, may now be particularized, following the order in which they are named. As regards the formation of the sewer, in case the expense of it amounted to 50,000*l.* or any larger sum, the architect was to receive 5 per cent. on 50,000*l.* that is, 2,500*l.* and no more; and if it amounted to less than 50,000*l.* but more than 45,000*l.* he was to receive 5 per cent. on the amount expended. But if the expense exceeded 40,000*l.* without reaching the next larger item named, he was to receive 5½ per cent. on the expenditure; if it exceeded in like manner 35,000*l.* he was to have 5½ per cent.; if it exceeded 30,000*l.* 5½ per cent.; and if 25,000*l.* 6 per cent. No services but the superintendence here are distinctly specified.—In regard to the several public works and buildings not to be let, including the rails, pavements, and other matters before referred to, he was to furnish "the original plans and designs;" to make estimates, to arrange the contracts, superintend the works, and arrange the accounts, and for such services he was to receive a commission of 5 per cent. And in cases where he was called on to make designs and estimates for works of the character referred to, in anticipation of the requirements, he was to be allowed then a commission of 1½ per cent. and the remainder making up 5 per cent. in case the works were eventually proceeded with. Where materials from the existing buildings were used again, in order to remove any doubt, it was agreed that their value should be added to the actual expenditure, and the commission be calculated upon the whole,—the value, however, it seems, being treated as that of old materials. No other compensation, as connected with this head, was to be claimed for valuing, where a house or ground should be afterwards let, thereby yielding compensation under the head of compensation for letting.—As to valuations, as of buildings, ground, or materials, to the order of the commissioners, with a view to the purchase or the sale, Mr. Nash was to be allowed a commission of 0½ per cent. on the amount paid in event of a purchase, provided the amount did not prove in excess of the amount of valuation; but if the sum paid exceeded the valuation, or in the event of the intended purchase not being made, or in the case of a valuation for the purpose of a sale, in such cases he was to be allowed 0½ per cent. upon the amount of valuation: but no compensation was to be allowed for valuing for purchase, ground or buildings afterwards let, and so yielding compensation for letting. In the case of a purchase and re-sale, 1½ per cent. were to be allowed on the amount arising or produced by such re-sale, in case such money should not exceed by more than 10 per cent. the amount of the valuation for sale; but if the proceeds should be beyond that 10 per cent. excess, then Mr. Nash was to be allowed a further commission,—that is to say, if the proceeds exceeded the amount of such re-valuation by more than 10 per cent. but less than 20 per cent. he was to be allowed a further commission of 0½ per cent.; and so on, each additional 10 per cent. realized was to give him an additional 0½ per cent. calculated upon the original re-valuation for sale. For such remuneration Mr. Nash was to take measurements, negotiate, and dispose of the property as might be required.

For the original maps or plans of the intended street, the calculations and estimates, engravings and copies of the plans in the course of passing the Act, or otherwise in regard thereto, and for his past time, plans, estimates, and expense in regard to the sewer, up to the

5th of April, 1814, "save and except such commission as he may be entitled to under any or either of the other articles of this agreement," he was to receive "a gross sum of 1,000*l.*"

For the letting of buildings or ground, Mr. Nash was to be allowed one half-year's full rent as reserved in the leases, to be paid on execution of the lease,—for which he was to take the trouble of negotiating any required purchases, to advise as to the letting and the covenants for the leases, "to measure and value the ground" (retaining, however, his compensation where received previously on valuations), "to prepare all designs for the buildings" to be erected, to negotiate with lessees, to insert the plans on leases, and to superintend the buildings and repairs required to be done; and in case of his death before the completion of these matters, his administrators were to be able to claim three-fourths of what he would have become entitled to. Touching cases where the rent reserved might happen to be reduced by fine, exchange, or other means, so as to render it less than the annual value, or where, on the other hand, it might be increased through the Commissioners' purchase (whether they paid in money, or by sale of building materials), the compensation was to be estimated not upon the reserved rent, but upon the rent as it would have been under ordinary circumstances. And again, where the reserved rent might be increased by reason of buildings or improvements made at the expense of the Crown, under Mr. Nash's directions as architect, the compensation was to be estimated as on ground-rent, or on the rent which would have been produced if no such improvements had been made.—Mr. Nash being allowed his five per cent. as architect, notwithstanding.

It may be interesting to state that it appears from the agreement of 1818, that subsequent to the date in 1815 before mentioned, Mr. Nash had delivered accounts of his claims up to Christmas, 1816, and had received a commission of 0½ per cent. on a sum of 619,387*l.* (or upwards of 3,000*l.* for surveying, planning, and valuing, the estates and property originally intended to be purchased, and also upon 156,860*l.* (or upwards of 780*l.* for valuing old materials, over and above the sum of 1,000*l.* allowed him for his plans and designs. It may be also well to refer to the belief that he realized largely through becoming himself the lessee of the Crown. This position, however, whilst he was acting as the Crown agent or surveyor, involved him in many imputations—still sometimes quoted to his prejudice; but from these he was distinctly exculpated by the result of the parliamentary inquiry, and there is no doubt that to his enterprise in taking ground subject to onerous conditions which accrued by the improvements themselves, was the source of gain to the public.

These particulars may at the present juncture be useful for reference.

#### THE ARCHITECT OF THE NEW PALACE AT WESTMINSTER AND THE GOVERNMENT.

In connection with our observations on the remuneration of Sir Charles Barry, and that our readers may be made acquainted with all the steps taken in the matter, we insert the following protest of the architect against the decision formed by the Lords Commissioners of her Majesty's Treasury, in respect of his claims, recently delivered by him to the Treasury. It has not yet produced any rejoinder.

"Firstly,—Because the alleged bargain was, in fact, no bargain, in the true sense of the term, but a dictum of the Government of 1839, issued after nineteen months' progress had been made with the works by the architect, upon the understanding of receiving his accustomed commission of 5 per cent. upon outlay, and in contravention of an allowance made by the authorities in the Departments of Woods and Works, of that rate of commission, which was added by them to the amount of his estimate, as approved by Parliament; and because, that although this dictum, which, contrary to all precedent and professional usage, had the effect of reducing the just claims of the architect to the extent of 10,000*l.* was yielded to by him, at the time, under pressure, his acquiescence was conditional, and under a protest both then and on various subsequent occasions made by him, as to its injustice, without any rejoinder on the part of the Government; all payments made to the architect from time to time, in the interval, having been received by him as only on account.

Secondly,—Because, even if it be assumed, for the sake of argument, that the dictum of the Government of 1839 constituted a bargain, the circumstances have been so entirely altered, and the conditions upon which it was based

\* "An Act for making a more convenient communication from Mary le-bone Park, and the northern parts of the metropolis, in the parish of Saint Mary-le-bone, to Charing-cross, within the liberty of Westminster, and for making a more convenient sewer for the same."



have been altogether violated, from no fault on the part of the architect, whereby such bargain would be rendered null and void.

Thirdly.—Because the principle of dictation adopted by the Government of 1839 towards the architect, was ordered by the Treasury at the same time to be applied to the profession at large, in respect of all future public buildings thereafter erected, but has never been so applied in any single instance. On the contrary, the architects of all public buildings, since erected and now in progress, have been paid, and are still being paid, at the accustomed rate of 5 per cent. upon outlay, and in some instances at even a higher rate of per centage.

Fourthly.—Because as the dictum of the Government of 1839 could not have contemplated any allowance for a general measurement of the works; which works, being at first contracted for in the gross, rendered all such measurement on the part of the architect unnecessary; the rate of commission now awarded to the architect by the Treasury, namely, 3 per cent. for the aesthetical, and less than 1 per cent. for the financial duties which have been unexpectedly thrown upon him, falls far short of the amount of remuneration sanctioned even by the dictum of the Government of 1839.

Fifthly.—Because considering the difficulties which the architect has encountered and overcome in conducting during a period of nearly twenty years, the works of a building covering more than eight acres of ground, containing above 1,000 rooms, 19 halls, 126 staircases, and more than two miles of corridors, passages, &c. under eight successive Governments, subject to the interference and interruptions of fifteen Parliamentary and other official inquiries, and to the constant, and often contradictory orders, resulting from opinions expressed both in and out of Parliament, involving extensive changes of plan; whereby no less than twelve official residences (now eighteen in all), and a large amount of extra accommodation have been provided within the building, beyond the accommodation afforded by the original design, thus increasing the cubical contents of the building more than 50 per cent. and occasioning constant revisions and re-estimates of the design of the entire structure; also considering the difficulties of carrying on the works piecemeal during the constant sittings of Parliament, in temporary structures, and in portions of the old and new buildings on the same site; the forming of the foundations of the building on a treacherous soil, partly within the river, and more than 10 feet below the level of high water, and other circumstances; the great amount of extra labour, anxieties, and responsibilities, which have thereby been thrown upon the architect have not been duly appreciated.

Sixthly.—Because it is evident that the Treasury must be aware of the injustice of its decision, inasmuch as it now invites the profession at large to compete for employment upon the intended New Public Offices (which are proposed to be on a scale of expenditure far greater than that of the New Palace at Westminster), on the understanding that the architect or architects to be employed will be paid the accustomed commission of 5 per cent. upon outlay.

Seventhly.—Because after every effort to have the case fairly tested upon its merits, and repeated offers on the part of the architect to abide by the result of an arbitration, on a broad and equitable principle, unfettered by the technicalities of the Treasury has pertinaciously refused to accede to any arbitration whatever, and has determined to keep the case in its own hands, and to dictate its own terms.

And Lastly.—Because, by the decision in question, which, practically, as is well known in all cases between an individual and the Government, leaves the architect little or no chance of a remedy at law; the Treasury has committed an act of injustice and oppression towards him; whereby the honour and good faith of the country are compromised."

### A NOOK IN THE TOWER OF LONDON.

In the north aisle of Henry VII.'s Chapel, in Westminster Abbey, there is a sarcophagus with an inscription put up by King Charles II. to mark the resting-place of the supposed remains of the princes who were murdered in the Tower by order of the Duke of Gloucester, and buried there, but were afterwards removed to the Abbey.

The sight of this record the other day induced us to take an opportunity to visit the locality in the Tower whence the remains were removed.

Tradition states that the unfortunate children were killed in the gateway called the "Bloody Tower." This is now occupied by modern furniture, and has lost its original aspect. The chief room is of considerable size, and is lined with a very thick panelling of wood. There are also some smaller rooms and dark-looking passages. Whether or not tradition be right in connecting this place with the murder, it is certain that events have here happened which invest the spot with an indescribable interest.

In one part we came upon the machinery for raising and lowering the portcullis, such a curious relic of ancient warfare, that we have given a small engraving of it. There is no other perfect example in England. Tradition says, too, it was in the room in the Bloody Tower that the Duke of Clarence was drowned in a butt of Malmsey. Those who visit this part of the Tower, by the way, should take a view of Father Thames from the top of the gateway.

Leaving the upper part under the fine archway which leads to the "Traitor's Gate," we endeavour to move the huge door of wood and iron at the east side of the Tower, and having

with much difficulty succeeded in doing so, find a small entrance which leads to the vaulted chamber here engraved, where, in Charles II.'s reign, the bones now in Westminster Abbey were discovered.

### ON FURNITURE, ITS HISTORY, AND MANUFACTURE.\*

WE now arrive at a period when the taste for classic literature led to the study of the arts associated with it, and produced the era of the Renaissance. Then appeared those great artist minds, Raffaele and Michelangelo; while the demand for articles of luxury called forth the genius of Cellini, Palissy, Jean Goujon, and Germain Pilon. I think it is generally agreed that the Italians were the first to apply themselves to the manufacture of ornamental furniture of the more modern style. They adopted in their cabinets architectural forms, which they enriched with a superabundance of ornaments, figures, inlaid marbles, &c.; but so elegantly disposed as to make us forget the want of constructional character. Giuliano, son of Baccio d'Agnolo, and his brothers Filippino and Domenico, are particularly mentioned by Vasari as the most talented sculptors of furniture in the middle of the sixteenth century. Marquetry was revived and applied to the decoration of furniture. Vasari names among the most skilful in this art in the fifteenth century Giuliano da Maiano (1460), Giusto and Minore who assisted him, and Benedetto da Maiano who excelled in the process of conjuring woods tinted of various colours, and thus representing building in perspective, foliage, &c. In the sixteenth century he mentions Fra Giovanni di Verona (who had a high reputation), Fra Raffaele de Brescia, and others. This furniture was highly esteemed throughout Europe, and Vasari relates that Benedetto da Maiano made two magnificent coffers in Marquetry for Matthias Corvinus, king of Hungary, but on taking them to him, he was distracted at finding, on unpacking them, that the damp weather had softened the glue, and that all his beautiful Marquetry was detached from the work.

The large tronçean chests or coffers of this period are remarkable for the richness and excellence of their sculpture: they were made principally for marriage gifts, and the talent of the first artists was employed upon them. The style of this work can scarcely be considered appropriate, as it bears the characteristics of design suitable for stone rather than for wood.

See p. 185, ante. Read by Mr. Crace, at the Institute of Architects.



NOOKS IN THE TOWER.

In the latter part of the sixteenth century, the Germans had arrived at considerable renown for excellence in the manufacture of furniture—both in carved work and marquetry. More especially celebrated were those art cabinets (*kunst schränke*), of which many are still preserved in European palaces and collections. Adopting generally the design of an architectural façade, they combined in them all that was rich in materials and excellent in art: ebony, ivory, tortoiseshell, amber, lapis lazuli, jasper, and even gems were used by the painter, the goldsmith, the sculptor, the enameller, the workers in marquetry and mosaic, to produce conjointly these truly named art cabinets. The manufacture was principally carried on at Nuremberg, Dresden, and Augsburg. There is a fine specimen in the Green Vaults at Dresden, which bears the name of Hans Schusterstein of Dresden: a desk which accompanies it is dated 1568: another cabinet in the same collection bears the name of Kellerthaler, a goldsmith of Nuremberg, and is dated 1555. One of the choicest examples is to be seen in the Royal Palace at Berlin, and it was made at Augsburg in 1616, for the Duke of Pomerania, having been designed by Philip Hainhoff, and executed by Baumgärtner. Hans Schwannhard, another eminent cabinet-maker, who died 1691, invented the undulating ebony mouldings introduced in cabinets of that time.

In France, through the efforts of Francis I. the arts made great progress in the sixteenth century. He induced many celebrated Italian artists, as Primaticcio, Giulio Romano, Benvenuto Cellini, and many others, to settle in France, and laid the foundation of that taste which has since taken such deep root. Less celebrated than the Italian, French cabinet work yet arrived during the sixteenth century at great perfection. Bachelier, a celebrated architect and sculptor of Toulouse, said to be a pupil of Michelangelo, applied himself to cabinet work, and acquired great reputation. A cabinet in the Soulaiges collection is said to be by this artist. The celebrated wood sculptor, Jean Goujon, disdained not to apply his talent to this branch of art. Marquetry also was much employed by the French at this time. I have alluded hitherto to the artistic furniture of the period which was required for ornament rather than use, and could be purchased only by the very wealthy. The commoner articles of house furniture were still of a rude and simple character—good tools and clever workmen being scarce. The chairs were generally of the ordinary curule shape, of which there are several specimens in the Soulaiges collection, some being of simple wood, others inlaid: there were also square chairs, with square stuffed backs—all rather rude in



make, but sometimes covered with extremely rich stuffs, handsomely trimmed with fringes, &c.

Towards the end of the sixteenth century the Renaissance lost its earlier tastefulness, and especially in Flanders, assumed a bolder but a coarser character. The furniture was picturesque, but had lost the qualities of purity of design. The chairs now were much altered in form, the legs were turned, either plainly or spirally, the backs sometimes high and richly carved—as furniture of a showy kind was more generally used; the carving became of a coarser and commoner description.

The reign of Louis XIV. of France introduced considerable alterations in the arts: richness and grandeur now took the place of the pure style of the Renaissance. For the palaces built by Mansart, where Le Notre designed the gardens, and Le Brun decorated, it was necessary to have furniture which corresponded with the splendour of all around. It was at this time that the celebrated Bulli, or Boule, was employed to make those cabinets that still bear his name. André Charles Boule, borne at Paris in 1642, desired toness of his father, a cabinet-maker, and the superiority of his works attracted the favour of the king, who granted him apartments at the Louvre, and named him Premier Ébéniste de sa Maison. He then commenced the grand series of cabinets and other furniture for the palaces of the king and his courtiers; what particularly distinguished these, was the kind of marquetry in tortoiseshell and metal which was invented by Boule, and still called after him. Although out of the bounds of strict taste, there is yet abundant genius in the works of this master. The patterns of his inlay work were full of fancy and beautiful drawing; and his gilt metal mountings, though detached and apparently unconnected, form a magnificent and harmonious whole. His grand inkstands and incidental furniture show wonderful talent in their flowing curves and harmonious ornaments. The genius of Boule is best understood in comparing him with his successors: notwithstanding the richness, there is a sobriety in the ornamentation of his works; while, in Crescent and others of his imitators, there was too much disposition to profusion of ornament. Another man of great talent in designing furniture and ornaments for inlay work was Bérain, who was also attached to the royal factory.

During the reign of Louis XIV. the arts were much encouraged; his minister, Colbert, saw their importance; and, though a chancellor of the exchequer, he was bountiful in founding schools for the instruction of workmen in drawing and knowledge of art, and in fostering that school of magnificent art, the tapestry manufacture of the Gobelins; this and the royal manufactory of porcelain at Sèvres, in executing works of the highest artistic perfection, raised up a class of skilled designers and art workmen, who disseminated the knowledge they thus acquired in these royal factories. Under Louis XV. furniture lost its grandiose character, and became more remarkable for prettiness: the forms rounded or curved became more eccentric; the ornaments assumed the peculiar style called Rococo, which is founded on a system of reversed ser S and sh ll work producing undulating forms, not graceful in the hand of a master, but of dangerous facility of execution, and the curse of the common ornamental furniture of the present day. A taste for marquetry in woods seems to have revived, and to such an extent was it used, as sometimes to cover the whole of a piece of furniture. The chairs of this time were very gracefully formed in the style called the Cabriole, in which there is no fixed form but continuous curved lines. As ease and luxurious comfort were essential considerations, the upholsterer's art of stuffing became an important and in carrying out this desideratum. Beauvais tapestry of a very beautiful description, introducing flowers, animals, trophies, or pastoral subjects, was also applied to furniture.

In the time of Louis XVI. a fresh style of ornamentation arose, which is now known by that monarch's name. It resembles the Renaissance in its ornaments, but had nothing of its artistic genius, and it mingled delicate foliage, and ribbons, and roses, with the attributes of Corydon and Phillis. The furniture of this period is remarkable for the elaborate finish of the ornaments, the constructive forms being simple and merely without curves. Marquetry work in France appears to have reached its perfection of finish at this time. Reiner, David Reinieutz, a native of Newburg, and Gouthier, were eminent cabinet makers, and celebrated for this kind of work. Reinieutz was remarkable for his peculiar and beautiful inlay of flowers, the leaves of which were shaded by heat. David Reinieutz produced the shades of his marquetry solely by the natural colours of the woods. Nothing can exceed the extremely fine jointing of the parts of the marquetry by these two masters, nor the taste and perfect finish with which the various woods are combined. Gouthier was celebrated for the exquisite taste and

elegance of his metal works, producing groups of foliage and flowers which rivalled nature in the perfection of their design and workmanship: this artist was, I believe, the inventor of "or-mat" in metal-work. David made the "meuble de noce" of Marie Antoinette, and Gouthier one for the Comte d'Artois on his marriage. The chairs and sofas of this period had lost the graceful curves of the former reign, and a stiff straight style was adopted, which was, however, relieved by the infinite delicacy of the ornamental carving.

The Revolution in France, especially during the Reign of Terror, must have either ruined or caused to wander abroad most of the art-workmen, and for a long period a style of art obtained which was a very poor copy of the classic: this under Napoleon I. was modified into the so-called style of the Empire, founded on the works of Percier and La Fontaine, two celebrated architects; but though any style carried out by clever men may have a certain merit, there is little in this to interest or instruct. The furniture of this period was made principally of mahogany, with little if any carving, the ornamentation being given by bronze work of a very flat and meagre character.

During the reign of Louis Philippe, French art changed very considerably, and sought for models in the Renaissance period. The periodical exhibitions of national products, by causing emulation among the manufacturers, produced a higher class of art-workmen, and also, by the beauty of the works executed, caused a great demand for them. May these works of the celebrated Neckers were borne in mind by our Chancellors of the Exchequer:—"Le goût est le plus adroit de tous les commerces," which may be rendered thus, "That no kind of commerce has such skillfulness in increasing the demand for manufactures as taste." The art of marquetry, which had lain dormant since the Revolution, was revived, and wood-carving as applied to art manufacture has arrived at a very high state of perfection.

In speaking of the furniture of various countries since the Renaissance I have not alluded to our own; but as England had not exhibited any peculiar excellence in this manufacture, I thought it better to carry on the explanation of the successive styles through those countries which particularly influenced them. While the Renaissance supplanted the Gothic in France, Italy, and Germany, our own country adopted the Tudor style; till that was changed into a coarse kind of Cinque-cento work named the Elizabethan: this continued with various modifications till the works of our celebrated countryman, Inigo Jones, induced a taste for Italian art. The carved oak furniture of the time of Elizabeth and James I. is marked by rather exaggerated forms, particularly in the turning, as instanced in the bed of Ware and that from Cumberplace, illustrated in Richardson's work on "Old English Mansions": the tables and benches, too, where the turned work is introduced, present the same features: the friezes and panellings have either scroll work, or that particular kind of ornament called strap work: various specimens of furniture of this period and the next century remain at Penshurst, Knowle, Hardwicke Hall, and Holland House. Towards the time of King William and Queen Anne, the style greatly changed, assuming more of a bold Florentine character, but the taste seems then to have declined till the time of George III. when I think it reached its lowest point—a compound of Strawberry-hill Gothic and Chinese being considered the most fashionable style. Mayhew and Ince, cabinetmakers, published, in 1750, a work of specimens in this style; and Chippendale, another manufacturer, and an able man, also published a collection of designs. It was a grand step to work away from these false ideas of ornaments, and resume a quiet, simple style distinguished by good workmanship and pure taste: this was achieved by our cabinetmakers early in this century. During the last forty years art has grown up gradually amongst us, until we perceive the full importance of encouraging its growth: above all, competition with foreign countries has taught us to know our own deficiencies.

I will now say a few words respecting the manufacture of furniture: it will not be possible to give a full description of the various details, but an account of some of the ornamental processes may be of interest.

It is essential for good cabinet work that the wood employed be thoroughly seasoned,—far more so than for joiners' work. Except in wainscot to nature, almost all of it has, in some part or other, to be veneered, the handsomer qualities of wood being too expensive for use in the solid, and also not so likely to stand as when laid on a wood of a plainer kind. The ground generally used for this purpose is Honduras mahogany. Veneer is wood cut into sheets, about one-sixteenth of an inch thick, by saws contrived for that purpose. The wood from which these veneers are cut sometimes fetches an extraordinary price. The ornamental knotted-looking walnut wood, now so much used, is a

burr of the tree, or a swelling, generally near the root. The woods most frequently used for veneering are, the fine kinds of mahogany, rosewood, satinwood, birds'-eye maple, walnut, tulip wood, amboyna. The ground, having been prepared of the required form, is finished with a toothed plane, on the side to be veneered; and the veneer itself is also planed in the same way. The wood is first soaked with water, then the sheet of veneer is well dried, and afterwards both it and the ground are spread over rapidly with glue, and the two parts are brought immediately together: when joined, it is at once covered with a heated caul, either of wood or metal, and afterwards a number of screws are applied, so as to press the parts together in every direction.

Marquetry, or the inlay of various woods, is one of the most beautiful processes in cabinet work. The design having been first drawn on paper, and properly coloured, is pricked with a fine needle, so that the outline of the ornament can be pounced on the various coloured woods proposed to be employed. These outlines being carefully marked in, are cut with a fine watch-spring saw. In most cases the wood forming the ground is cut with that of the ornament; so that a piece cut out of white wood corresponds exactly in shape and size with the opening left in the black wood, in which it therefore fits, and forms the required pattern. In those ornaments which are shaded, the effect is given by dipping them in heated sand. The various parts being cut out, in the required tints, are now adjusted according to the design, and fixed on paper; afterwards they are applied, exactly as veneer, to the piece of furniture. Buhl, or Boule inlay is conducted on the same principles as marquetry, only that the various ornaments in this kind of inlay are cut out of sheets of metal, tortoiseshell, or ebony.

I have shown that it was the policy of the French Government, and is still, to encourage and develop a knowledge of art among their manufacturing population. And I acknowledge that much has been done by our own, in the establishment of schools of design in various towns; but it is essential to bring before the eyes of art-workmen good examples; to form collections of the fine productions of former times; and thus not only form schools of art for them alone, but by them educate the popular taste, and hence create a demand for what is beautiful. With this feeling, I can scarcely believe that the Government have decided not to purchase the Soulaques collection.

Think of the museums at the Hôtel de Clugny and at the Louvre, at Paris, and compare them with our own. Compare, also, with our own, the French exports of fancy goods, dependent upon taste—their furniture, their bronzes, their paper-hangings, their printed muslins, their rich silks,—and then acknowledge, that as certainly as "knowledge is power," taste is commerce.

I will now hazard a few remarks upon the principles that should guide us in our designs for furniture. I will recite, if you will allow me, two sentences out of the report I was suddenly called upon to draw up on Furniture at our Exhibition of 1851.

"It is important, both for the strength and good effect of furniture, that the principles of sound construction be well carried out; that the construction be evident; and that, if carving or other ornament be introduced, it should be by decorating that construction itself, not by overloading it and disguising it. It is not necessary that an object be covered with ornament, or be extravagant in form, to obtain the element of beauty: articles of furniture are too often crowded with unnecessary embellishment, which, besides adding to their cost, interferes with their use, purpose, and convenience. The perfection of art manufacture consists in combining, with the greatest possible effect, the useful with the pleasing; and the execution of this can generally be most successfully carried out by adopting the simplest process."

Though these words are mine, the principles they enunciate are from a far higher source, and were published as early as 1841, by Augustus Welby Pugin—a man now, alas! lost to us—whose memory I revere, and whom I look up to as one of the greatest artists of his age—whose genius had scarcely begun to be known to the world, when he was struck down. He rarely mixed with society, and therefore his high attainments and great powers of mind were only fully known to the few who possessed his intimacy or his friendship. For some years previous to his death, I had the advantage of his advice and assistance in the Gothic furniture I made.

I have lately heard it discussed that Gothic furniture and decoration are not suitable to a nobleman's house of the present day—that their forms and appliances are incompatible with modern tastes and comforts. But, in my opinion, there is no quality of lightness, elegance, richness, or beauty, possessed by any other style, which cannot, with equal propriety, be maintained in Medieval furnishing or decoration; and with this addition, that I know no style where the







weeks, presents some features worthy to be mentioned.

The town itself presents the aspect of a quiet English country town of about 5,000 inhabitants. Its two churches are ancient and rather dilapidated. St. Aldegund's has three aisles, and west tower. The aisles are apsidal at both ends: the chancel is also apsidal, all covered with groined vaulting, with thin ribs, and slightly domical. The principal material is brick, with stone coins and tabling. The windows have flowing tracery heads of meagre character. The tower is brick, with stone coins, without buttresses; in three stages, the upper octagonal, with a stone shaft at each angle, and a large blank panel on each face, in the centre of which a narrow slit is opened for light. The floor under the tower is paved with incised sepulchral slabs of very ornamental design.

Another, and older church, is situated on the extreme edge of the Rhine. It appears of early Romanesque work, with additions and insertions of fourteenth-century architecture. It has originally been a cross church without aisles, to which aisles have been subsequently added. The chancel has an apsidal end and plain semicircular barrel vault. The transepts are groined. Recesses are formed in each side-wall of the chancel, filled in with stall-work of late date, but well executed. There is some good Renaissance carving in bench-ends and panels. The tower is brick, with slated spire. An open gallery is carried round the tower with semicircular arches.

The village churches from hence up to Düsseldorf very much resemble each other in style. They are usually built of brick in three aisles; the east end of chancel apsidal. The tower at the west end, with broach spires of timber covered with slate.

Düsseldorf, in its street architecture, presents a very modern look. Many of its buildings are spacious and handsome. The streets and squares in the quarter near the Hofgarten, interspersed with trees, have a very fine effect.

The architecture of the Rhenish churches, from Cologne up to Spire and Worms, exhibits features of a very marked character, which have attracted much attention from architectural antiquaries.

The attentive study of these buildings is calculated to throw much light on the derivation, the early history, and the tendencies of Medieval architecture.\* That all Medieval art has been derived from the Roman, nearer, or more remotely, is admitted on all hands, but the particular sources from which each country derived its typical forms, the channels through which these influences were brought to bear, and the peculiar circumstances which modified them in their development in each instance, require careful examination before any general conclusions can be arrived at.

That there existed at different periods various schools or centres of Medieval art, the influence of which stamped their peculiarities on the buildings within particular countries or districts, is a fact now well ascertained.

The history of these schools yet remains to be written. Indeed, it is only within a period comparatively recent that materials have existed for this purpose. The old idea of former writers on the subject, founded on partial and imperfect data, that any particular country possessed the perfect type of Medieval art,—any departure from which was debasement and degradation,—is no longer tenable. The English, the Flemish, the Norman, the Ile de France, the Poitevin, the German, the Italian, the Telesco, all styles complete and consistent in themselves, as growing out of actual circumstances and necessities. This subject is worthy of more attention than it has yet received.

The particular district to which our attention is now directed is a case in point. Its churches of the eleventh and twelfth centuries bear a striking resemblance to each other in general character and style, with peculiarities which are found nowhere else, except in a few isolated instances where Rhenish influence has been brought to bear.

The church of the Holy Apostles, at Cologne, approaches probably as near the typical form as any which could be cited. It consists of a rectangular nave with side aisles. The east end terminates in a Latin cross, each arm of which has a semicircular apsis covered by a semidome. Above the intersection of the cross rises an octagonal cupola, carried on pendentives. On each side of the choir, at the re-entering angle, a slender circular tower is carried up, breaking into an octagon above. At the west end a square tower rises in a similar style of design. There are square transepts at the west end of the nave, but these are evidently of later construction, and may be fairly ascribed to the thirteenth century. This church has suffered by fire at different periods, and has undergone some mutilations and insertions; but

there is no difficulty in determining the general scope of its architecture. The details of the original work in the piers, arches, vaulting, strings, tabling, &c. do not differ materially in principle from the French Romanesque, or the English Norman of similar date, except that they approach nearer the classical forms, and are much less rude than our early specimens. There is also in the Rhenish churches much less display of the varieties of the chevron, billet nail, head—and other grotesque mouldings and enrichments. A very prominent peculiarity in most of these churches is the open arcaded galleries, with columns and semicircular arches extending round the buildings externally, immediately under the eaves. The termination of the towers generally has a gable on each face, surmounted by a low slated spire.

This style of building, by Hope and other authors, has been designated the Lombard, from an idea that the revival of ecclesiastical architecture at the commencement of the eleventh century first took place on the plains of Lombardy, and that the style was carried by the incorporations of Freemasons originated there, into the countries lying to the north. That a great improvement in church architecture took place at the beginning of the eleventh century is unquestionable; that its progress was from south-east to north-west, and that in passing through Lombardy some influence was exercised over its development is a fair inference from the comparison of existing specimens; but that the style either originated in Lombardy, or that its finest specimens are to be found there is a conclusion which we cannot think at all warranted by the existing state of our information on the subject.

Down to the reign of Charlemagne, in the eighth century, the churches in the west of Europe had been rude copies of the classical remains left amongst the ruins of the Roman Empire. The west front of the abbey of Lorsch, and the building called the Baptistery of St. John, at Poitiers, are good specimens of this style. It is to the Emperor Charlemagne, and to his intercourse with the East, that we owe the introduction of the first germs of Eastern art, which, modified by the peculiar genius of the West, was in after ages to bear such abundant fruit.\* The cathedral of Aix-la-Chapelle, built by Charlemagne, was an imitation of the church of the Holy Sepulchre, at Jerusalem; and there can be no doubt that many other buildings in the Rhenish provinces, since destroyed, were constructed under Eastern influences. Charlemagne, however, was before his age, and in the long period of confusion which followed his death, architecture, as well as other arts, well-nigh perished from the earth. In the mean time, similar influences had been at work in other quarters. Venice had been silently growing up to be the mistress of the Adriatic. The riches of the East poured into her harbours, found their way across the plains of Lombardy, over the passes of the Alps, and down the course of the Rhine into western Europe, and along with commerce, there is sufficient evidence that science and art walked hand in hand. It is a singular fact, account for it how we may, that the Byzantine influence upon the architecture of western Europe did not develop itself in the same form in the different countries to which it extended. In one it principally affected the general plan and arrangement; in another the domical forms of the vaulting; in a third, the polychrome and rich character of the ornamentation; in a fourth, the sculptures and enrichments of the mouldings.

"There exist," says M. Viollet le Duc, in his "Dictionnaire Raisonné," "in the East, three plans, which have been applied as types to churches: the most ancient is the circular, of which the Holy Sepulchre at Jerusalem is one of the best known models. The second type is one derived from the ancient basilica, but with the transepts terminated by semicircular apses, such as the Church of the Convent of the Nativity, at Bethlehem. The third, which is the only originally Byzantine plan, is composed of a central cupola, carried on pendentives, with openings to the four cardinal points, and one or three apses to the east end, lateral galleries over the side aisles, and a narthex or open loggia at the west end."

The church of St. Mark, at Venice, is constructed on the type of St. Sophia, having both central and lateral domes on pendentives, as well as the side-galleries and the narthex. The present building was commenced in the year 976, after the destruction of an older one probably after the same type. As we proceed westward, we find the types of plan alluded to above mixed and combined. The church of San Michele, in Pavia, built not later than the eighth century, has the form of a Latin cross with apsidal east end, vaulted galleries over the side aisles and central octagonal cupola carried on pendentives. Many of the details of this building show the germs of the peculiarities afterwards carried to such an extent on the borders of the Rhine. The slender tower at the angle of the choir and transept, the double tier of

arcades round the drum of the cupola, the open gallery running up the gable of the west front, are identical in principle with those described in the Church of the Apostles. San Ciriaco at Ancona and the Duomo at Pisa, both built in the eleventh century, exhibit some of the same features.

If we now turn to the Rhenish churches, and compare them with the specimens just alluded to, we find the plan of the Holy Apostles Church very nearly identical with the church at Bethlehem, except that the latter has four rows of piers, and the former only two.

The central cupola with its pendentives re-appears, and the arcades, the slender towers, the galleries, and other minor features only sketched out, as it were, in the Italian buildings, here receive their full development. It is interesting thus to trace out to their sources and to ascertain the analogies of buildings separated by mountain ranges, difference of language, manners, and customs; and until this is thoroughly explored, the true progress of architecture will never be satisfactorily understood.\* J. A. PICTON.

#### ARTISTS AND AMATEURS' CONVERSATION.

It is some time since we attended one of these agreeable *réunions*, and it was a pleasant surprise, on the 2nd instant, to find that they are now held in the upper room at Willis's, the cheerful aspect of which, the ample space, and the good lighting, add materially to the comfort and satisfaction of the visitor. The committee for that evening deserve great praise both for the agreeable company invited, and for the interesting display of works of art collected. Less crowded and better known to each other than in some cases, the visitors chatted in lively groups, rendering the evening a true *conversation*. Amongst the works exhibited were some interesting portfolios of drawings and sketches by Richardson, Hartman, and Collingwood Smith; a pleasing picture by a German artist, an Italian mother depositing her child at the door of a convent, the property of Mr. Walter Fawcett; the original sketch of Collins's "Cut Finger;" Mrs. Garrick before her marriage, by Hogarth,—piquant in the extreme; "Roma," by Hartman, very poetic and suggestive, but, nevertheless, open to criticism; a nice, breezy, sea-piece, by E. W. Cooke; a scene from "Macbeth," by Catmole, very vigorous and effective; Millais's cartoon for his picture of "The Rescue;" and many others. Mr. Herbert Watkins exhibited some admirable photographs of Balfe, the composer, and Robson, the actor, in several of his parts.

The last of these very pleasant meetings for the season will be held on the 7th of May.

#### THE DESIGNS FOR THE NEW PUBLIC OFFICES.

THE arrangement of the designs is being proceeded with. The exact number of packages received (some of which contain more than one design) is 218,—of which 183 were delivered up to the 20th ult.; and 30 (from abroad) up to the 4th instant.

#### THE NEW PARTS OF THE LOUVRE, PARIS.

In our fourteenth volume, amongst other illustrations of Paris, a general view is given, at p. 275, of the additions to the Palace of the Louvre, made by direction of the present Emperor, from the designs of the late illustrious Visconti. The accompanying engraving, taken from a photograph of wonderful beauty, represents more at large the front of the centre Pavilion, next the Place Louis Napoleon, as the space enclosed by the two new wings is called, together with a small portion of the arcade, surmounted by statues, on each side of it.† The statue on the left side, by the way, represents Montesquieu; that on the right, Mathieu Mole. The design of the Pavilion is founded on that of the Pavilion in the Renaissance Court, built during the reign of Louis XIV.‡ and displays an amount of sculpture of which we have no corresponding example. The Caryatides, and the details of the windows which occur between them, are exquisitely modelled.

\* To be continued.

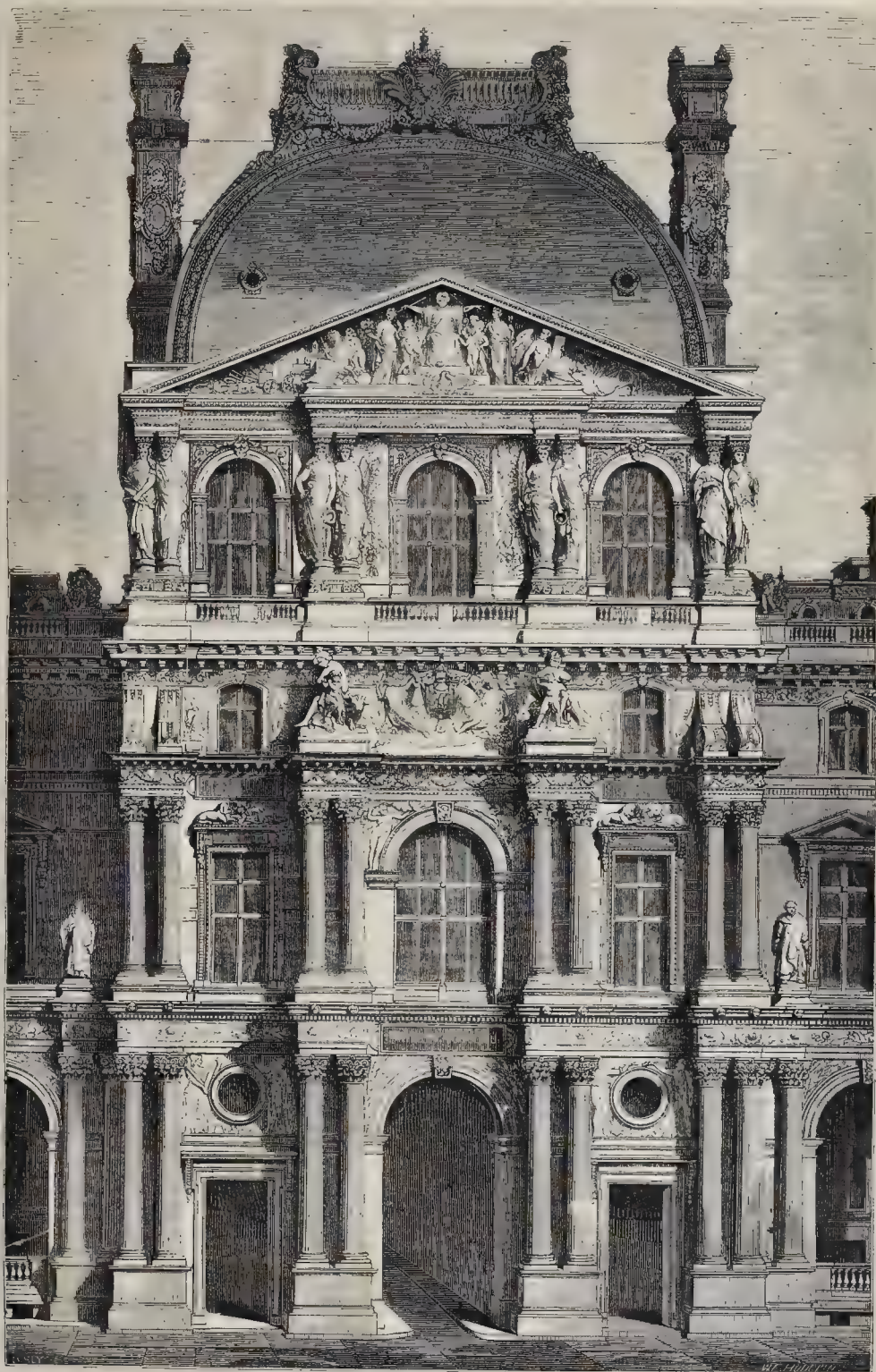
† A bird's-eye view of the Louvre and Tuileries united, will be found in vol. xii. (p. 131), with a history of the buildings (pp. 129 and 137). A plan is given in vol. i. p. 448.

‡ See vol. xiv. p. 7, for view of that Court.

\* Dr. Whewell, in his "Notes on German Churches," and the late Thos. Hope, in his "History of Architecture," have bestowed considerable attention on this subject.

\* See Viollet le Duc. "Dictionnaire Raisonné," Vol. I. p. 120.





"PAVILLON RICHELIEU," PALACE OF THE LOUVRE, PARIS.—L. VISCONTI, ARCHITECT.



### THE LATE W. H. PLAYFAIR, ARCHITECT.

At the last meeting of the Liverpool Architectural Society, Mr. James M. Hay alluded to the recent death of William Henry Playfair, the able and distinguished architect, of Edinburgh, and after reading a notice of that gentleman from the *Daily Scotsman* of the 20th of March, he exhibited and described some of Playfair's designs, and continued with the following remarks:—

Playfair completed his studies at a time when Greek and Roman Architecture were considered the only styles worthy of imitation, and it is surprising that he should have succeeded at all in Gothic architecture, the revival of which has been so recent an occurrence. Great is the advantage of the architectural student in the present day, when every style of art, ancient and modern, is illustrated, examined, sifted, and analyzed, and we have every reason to believe that a greater advance will be made within the next fifty years than at any past period. But every architect shows a preference to one style though educated in several, and Playfair's forte was decidedly the Greek style. There is a freshness and vigour in these compositions, combined with so much elegance and delicacy of finish in every detail that you recognise at once the work of a master who has worked out his subject with love and enthusiasm. St. Stephen's Church, Edinburgh, forming the termination to St. Vincent-street, is a successful work of his. It is hexagon on plan, with a tower to one of the sides or front: the two exposed flanks of this building exhibit great power and beauty, and indicate as fine a feeling for Greek art as anything I have seen; the upper part of the tower partakes, perhaps, unnecessarily of the Gothic, but the whole design is bold and original.

The Royal Institution is after the Greek Doric, but is a sufficient departure from the temple form to stamp it as an original work. An octastyle portico terminates each extremity of the building, and each flank is broken by projections surmounted by sphinxes. The roof of the edifice adorns against the cells which rises up through the roof, as it were, to receive it, making this part of the design exceedingly beautiful. This, in my opinion, is the finest of all Playfair's designs, and is a noble building, notwithstanding the looseness of the site, which much impairs its majesty of effect.

The National Gallery is very inferior to the Royal Institution, and although Playfair's latest work, will not bear the same inspection.

Donaldson's Hospital was the result of a competition limited to Gillespie Graham, David Hamilton, of Glasgow, and Playfair, all three able and eminent men, and the latter gentleman was commissioned to carry his design into execution. Although in a style foreign to his predilection, he has acquitted himself with great ability. The style is late Tudor, with a certain infusion of Elizabethan, and his fine classic taste is indicated in every detail and moulding, which are not merely borrowed from precedent, but are drawn out afresh according to his own standard of purity and beauty. I may here observe, that there is, perhaps, no style more capable of being improved in elegance of detail, and in general character than the Elizabethan, and that there is none equal to the study of the Greek style, for imparting the qualification for doing so. The Free Church College was offered for public competition; the first and second premiums were awarded by the committee, assisted in their selection by Sir Charles Barry, and the work ultimately given to Mr. Playfair, who was not a competitor. As a design, this building is completely marred by the character of the four towers. Gothic has been defined as the vertical style, and Greek as the horizontal one; but it would be absurd to conclude that every vertical line in the one, and horizontal in the other, ought to be dispensed with; but certainly Mr. Playfair must have had some such idea, when he designed the towers in question, for there is not a single string or horizontal moulding of any description, from the base to the parapet. Every Gothic architect is aware of the æsthetic value of the string moulds, in binding the edifice together, in indicating and contrasting the heights of the various stories, and, in fact, imparting more of the aspiring or vertical principle, than the design could have without them. The other portions of the college are good, the entrance, and especially the quadrangle, is very fine, but the design of the whole is generally considered a failure; and this arises, in my opinion, from the faulty character of the towers, in outline, as well as general treatment.

The Surgeons' Hall, in Nicholson-street, is another of Playfair's designs, and is very justly admired; it consists of an octastyle Ionic portico, projecting from a main building of small extent on each side; the front columns of the portico rest upon a high stylo-

bate, and this is finished by a handsome gateway at each end.

The monument to Dugald Stewart is erected on the Calton Hill; and though the idea is borrowed from the monument of Lysicrates, it is quite original in its treatment, not to mention all the minor differences. The columns are nine in number, and stand free, there being no cells or inner chamber, as in the Athenian example. The stylobate is circular, while that of Athens is square.

There are other buildings in and around Edinburgh from the classic pencil of Playfair, and if they are not so numerous as those of some of his contemporaries, they are sufficient to stamp his reputation as a great and distinguished architect. One picture is enough to prove a great painter, one poem a poet. What is desired is quality, not quantity, and in the works of Playfair we find genuine and sterling merit.

### INFLUENCE OF FASHION ON TASTE.

YOUR correspondent, Mr. Lockwood, under the above heading (p.164) treats us to a dissertation upon matters of taste as applied to the finishing and furnishing of houses in general, wherein, amidst much that is true, there is mingled much that is sarcastic,—much that is positively unjust. He has painted a fearfully real picture of the horrors and incongruities that certainly exist in too many of our modern mansions; and doubtless many articles of so-called ornament would be better placed, and give more joy to the beholder, presuming him to have a healthy perception of what is ornament, if used to illustrate some of our popular professors' lectures on combustion, in lieu of being allowed to usurp the place of honour in our households, and drive taste from out the drawing-room to consort only with the gardener out of doors. That this state of things exists, no one has a better knowledge than myself, and no one feels more pain in the possession of it; but it being conceded that a lamentable want of taste exists, the question is, how is that evil to be met, and to whom are we to look for an improvement? Mr. Lockwood considers, by arming architects with full powers, and allowing the sole and entire supervision to them of everything, that the remedy is at hand. Alas! until the architects show, by a greater preponderance of good works over bad than at present exists among their works, that we may do so with safety, I am afraid we should be scarcely benefited. And with a house so divided against itself as the profession of architecture,—one urging the adoption of the Classic, another Medieval, and a third the desirability of an entirely new style, each to the total exclusion of all others,—the public, or patron, does not know on whom to throw himself to have his erring footsteps guided rightly in furnishing his house.

It seems to me exceedingly unjust to throw the blame entirely on the decorator and upholsterer. They have in too many instances, like the architects, no voice in the matter, but are compelled, *volens volens*, to become passive instruments in the hands of their employers, disgusted oftentimes with the improprieties they are compelled to commit; but rates and taxes must be paid, and large establishments kept up; therefore, the patron's peculiar fancies must be bowed to, or the shop closed. The disrepute that decorators have fallen into, amongst writers upon art generally, arises not from their own deserts, but from that love of meretricious adornment that unfortunately pervades society to such an extent; for were a decorator worthy of the name called in (and there is no lack of them) and allowed to use his skill, untrammelled by "mild" we should have none of those incongruous elements complained of. None possess a more refined feeling for colour, or are accustomed to act with greater reference to the *tout ensemble*, than the decorator-proper: effect is his grand object. Unfortunately, in far too many instances, the method of procedure is as follows:—When "mild" drawing-room requires refurbishing, she sends for the plumber and glazier, who reinstates the square of glass the children's ball has broken, or plasters up the water-pipe, ruptured by last night's frost, with alacrity;—a very worthy man, no doubt, and quite an article of taste amongst those worthies whom he regularly meets at evening; but one who knows no more of the harmony of colours, and has no more idea of the difference of treatment required, in a room at Haddon Hall and one in Compo-place, than an Esquimaux. This "plain good man" dubs himself decorator, and in that character "mild" sends for him. He forthwith produces papers that make the beholder wink, and "mild" thinks them neat; recommends graining for the woodwork, and that the mouldings should be gilt,—tempting, of course, his victim with the most expensive first. The work is done; and then "mild" goes to an upholsterer. He, having a wife and family to keep, must make a bill: chairs, couches, and other requisites which remind of Louis Quatorze, but are not, are exhibited: they are

"slightly noisy" in effect, but still only neutrally offensive; but the carpet and the curtains recommended are "thrilling;" and all these things, with pendant fringes from the cornices,—these latter rocco in its last stage—like gilded ropes of onions, are ordered home; and when "mild" returns one evening, he is bid to wipe his shoes, and all the glories of the renovated room burst on his gaze at once. Of course, at first he shudders, as is natural; but becoming callous with familiarity, he thinks his wife a woman of great taste, and writes a cheque. Now, why should we become the scapegoats of all this? Because, forsooth! people persist in ignoring the existence of competent professional men, it goes forth to the world that decorators are the enemies of good taste.

A DECORATOR.

### COMPETITIONS.

**North Shields Mechanics' Institution.**—From the several designs sent in, the committee have selected one by Mr. John Johnston, the architect for the Exchange buildings, St. Nicholas-square, Newcastle.

**Worcester Cemetery.**—When we last heard, the plans and designs for laying out the new burial ground had not been examined. The reason assigned for the delay is the city election, which has put all public business out of joint.

**Boston Church.**—A correspondent asserts his belief that the appointment of architect in this matter has been settled some time, and is at a loss to conceive what can be the motive in advertising.

**Cardiff Cemetery.**—The first premium of 20l. for the plans of the chapels and laying out of the proposed cemetery has been adjudged to Mr. R. G. Thomas, architect, Newport, Monmouthshire, who will carry out the design. The Burial Board propose to purchase thirty acres, and the works, it is supposed, will cost about 7,000l.

### THREATENED DESTRUCTION OF DOVER CASTLE CHURCH.

I AM greatly surprised to see an article in your last publication which conveys the impression to antiquaries not in the locality of Dover that the old church is not to be destroyed. If it is not the intention of the War Department to disturb the ruins, is it not somewhat singular that the Secretary of State for War should have asked for tenders for pulling down the walls and erecting a garrison chapel school on the site of the present edifice? Indeed, many have but just finished their calculations of what it would cost to pull down the present walls and use the material so obtained to form a foundation for the proposed erection.

A very short time ago the authorities were visited with some qualms of conscience, because they had committed the gross sacrilege of making the interior of the church serve as a coal-store, and orders were given to discontinue the practice; but they seem now to have so far recovered themselves as to have come to the determination to demolish the sacred edifice altogether, and place the venerable materials—which so recently they were afraid the coals would injure—underground, to form the foundation of a school for soldiers' children, which might just as well be erected near the site of the present building as exactly upon it.

VERITO.

### DISCOUNTS TO ARCHITECTS.

INCLOSED herewith is a circular from an ironmonger of extensive business, headed "Circular for Architects only," and offering them 10 per cent. discount on the prices of the articles. I think it would have been more appropriately called a "Circular for Thieves only." Surely the tradesman who issued it is ignorant of the obligations of architects, or is it that his principal customers are some low class in our profession which systematically defrauds an employer by certifying for the payment of upwards of 11 per cent. extra upon the real value of works, in order to enable the tradesman to pay 10 per cent. to him, the very person on whom reliance is placed for seeing that only fair prices are paid?

It is right in the face of this imposture that the public should know that every Fellow of the Institute of Architects has subscribed a pledge, "that he will not receive any pecuniary consideration or emolument from any builder or other tradesman whose works he may be engaged to superintend," and I believe that this is generally recognised as a principle by respectable architects.

F. I. B. A.

\* \* \* We have received nine other letters enclosing the same "circular," with similar comments.

**INSTITUTION OF CIVIL ENGINEERS.**—The discussion on Mr. Armstrong's Paper "On High-speed Steam Navigation, and on the Relative Efficiency of the Screw-propeller and Paddle-wheel," has occupied three evenings, and was closed on the 31st ult.



## METROPOLITAN DISTRICT SURVEYORS' FEES.

The first annual report by the superintending architect to the Metropolitan Board of Works, on the examination of the monthly returns of district surveyors, enables us to give the following:—

List of the Gross Totals of Fees received by the Surveyors of the several Districts under the Metropolitan Building Act, arranged according to Value.

Groups.	Districts.	Gross Fees Received.	Office Expenses.	Net Revenue.
		£ s. d.	£ s. d.	£ s. d.
Four Districts under £200 each, 42,539 15 9	Putney and Roehampton (9 months) .....	27 9 6	25 0 0	2 9 6
	Penge (9 months) .....	51 5 6	17 7 4	33 18 2
	Tower Liberty .....	47 5 6	21 1 0†	26 4 6
	Rotherhithe and Hatcham .....	75 17 8	46 0 0	29 17 8
	Stoke Newington .....	82 3 9	20 2 6	62 1 3
	St. Paul, Covent-garden, &c. ....	101 2 9	84 0 0*	33 3 0
	St. George-in-the-East .....	109 10 0	40 0 0	69 10 0
	Streatham .....	122 10 0	17 10 0	105 0 0
	Holborn, &c. ....	132 9 0	35 0 0*	97 9 0
	St. James, Westminster .....	143 2 9	84 0 0*	79 2 9
Sixteen Districts under £200 each, 42,539 15 11	Plumstead and Eltham (9 months) .....	137 18 6	84 0 0	103 18 6
	St. Giles and St. George, Bloomsbury .....	189 2 9	27 0 0	162 2 9
	Saffron-hill, &c. ....	189 15 8	32 10 0*	157 5 8
	Clapham and South Battersea .....	189 16 9	45 0 0	144 16 9
	Charlton, Lee, and Kidbrook .....	189 19 9	37 0 0	152 19 9
	Whitechapel .....	193 5 6	33 12 0	159 13 6
	Spitalfields .....	202 6 8	14 10 0*	187 16 8
	St. Martin-in-the-Fields and Soho .....	232 3 9	None	232 3 9
	Limchouse, &c. ....	244 11 9	57 0 0	187 11 9
	Woolwich .....	253 16 0	109 5 5	144 10 7
Eleven Districts under £200 each, 42,539 15 11	Northern Division of City .....	264 18 3	115 0 0	149 18 3
	Bethnal-green .....	266 14 3	80 10 0	186 4 3
	St. Margaret and St. John, Westminster .....	271 2 9	59 0 0*	228 2 9
	Hammer-smith .....	283 6 6	142 3 0	141 3 6
	Chelsea .....	284 18 0	88 0 0	196 18 0
	Newington, &c. ....	295 8 0	No return.	295 8 0
	Fulham .....	295 8 0	17 10 0*	278 10 0
	Greenwich .....	302 13 6	133 0 0	169 13 6
	North, Saint Marylebone .....	308 12 0	114 12 0*	194 0 0
	Wandsworth and Tooting .....	310 7 3	64 2 2*	246 5 1
Twelve Districts under £200 each, 42,539 15 11	St. Luke, Old-street, &c. ....	313 18 3	60 0 0	253 18 3
	Eastern Division of City .....	317 19 0	90 0 0*	227 19 0
	South Kensington .....	321 8 3	115 10 8*	205 17 7
	Southern Division of City .....	323 14 3	No return.	323 14 3
	Western Division of City .....	324 1 3	176 10 0	207 10 3
	East Islington .....	338 1 9	157 0 0*	229 1 9
	South, Saint Marylebone .....	357 17 6	140 0 0*	247 17 6
	Mile-end Old Town .....	392 14 6	90 0 0*	302 14 6
	Southwark, &c. ....	398 12 3	55 0 0*	343 12 3
	Clerkenwell .....	410 17 6	48 0 0	362 17 6
Seven Districts under £200 each, 42,539 15 11	Lambeth (South Division), &c. ....	413 0 11	113 0 0*	300 9 11
	Camberwell .....	414 6 0	169 10 0	244 16 0
	Lewisham, D.S. ....	435 12 0	165 0 0	270 12 0
	Isle of Dogs, D.S. ....	436 14 3	152 0 0*	284 4 3
	Bromley .....	455 10 9	96 1 8*	358 10 0
	North Kensington .....	462 1 9	146 11 4	345 11 11
	Hampton .....	604 8 0	149 12 0	354 16 0
	Deptford .....	671 1 6	100 15 0	470 6 6
	West Islington .....	690 11 3	70 1 8	620 9 7
	Paddington .....	707 19 6	160 0 0*	547 19 6
Nine Districts under £200 each, 42,539 15 11	Hackney .....	705 14 3	273 0 0	432 14 3
	St. George, Hanover-square .....	726 9 3	250 0 0*	476 9 3
	South Islington .....	737 9 9	196 11 0	530 18 9
	Shoreditch and Finsbury .....	917 9 9	172 10 0	744 19 9
	Bow and Finsbury .....	956 13 6	125 0 0*	831 13 6
	St. Pancras .....	1,317 17 0	None.	1,317 17 0
		19,904 14 11	4,872 17 8	15,031 17 3

Expenses marked thus \* include house taxes. In other cases these excluded, as not being definitely returned.

† No rent.

‡ Mr. Porter died in August.

## THE EXHIBITION OF NEW INVENTIONS AT THE SOCIETY OF ARTS.

The ninth exhibition of inventions at the Society of Arts, Adelphi, has now assumed something like its matured form, though some rather prominent articles in the catalogue have not even yet made their appearance. Many of those to which we will refer, as well as of the others, are recently patented.

The first series, in the catalogue order, are "Engineering and Mechanical Appliances," amongst the 116 separate articles of which we note (No. 7), an automatic scavenger for scouring steam-boilers of incrustation, scale, or mud deposit, and consisting of metallic articles in varied geometrical forms like models of crystals, which move about in the water, land scrape and stir the nascent deposit; (33) a double-acting centrifugal pump; (43) a railway locomotive, very like an old invention for slipping off and on mail bags as the mail train passes the post-stations; (48) flush rails for streets; (49) hollow-headed demiseimetric rails, also for streets; (71) drawings of Bishop's gas-making apparatus for getting away with all nuisance in gas manufacture, land (72) his Pavilion gas-works for parks and pleasure-grounds; (81) a band saw without joint, for cutting curves and bends heretofore cut by hand; (84) the timber-bending machine; (88) a self-acting reversing drilling machine; (89) the lithotome, or steam stone-cutting machine; (91) drawings of Claydon's brickmaking machine; (92) Stoeckler's elevator or observatory; and (98) Howard's apparatus for making moulds for castings.

In the next series, "Philosophical and Educational Apparatus," we observe (122) Elliot's planimeter, a neat little instrument for calculating the areas of surfaces, &c.; and (128-133) Rigg's educational models of movements in pumps, engines, mortising machines, blocks, &c.

The next in order are the "Building Contrivances and Hardware." The first of these is—

No. 146. A specimen of wood paving for floors of

school-rooms or workshops, consisting of wooden bricks laid on asphalt; Holmes, Derby, exhibitor.

No. 147 is a specimen of wood inlaying, composed of sixty-seven different woods; Rea, exhibitor.

No. 148. A specimen of the solid Swiss parquet-terrie; Arrowsmith, exhibitor.

No. 149. Specimens of parquet floors and borders, parquetté panels, and wooden tiles, exhibited by the London Parquet Company.

No. 150. A specimen of ornamental veneer flooring for sides of rooms, window recesses, halls, &c.; Sikes, exhibitor.

No. 151. Roberts's encaustic tiles for flooring, glazed, to prevent frost and wear and to keep dry and clean, and indented to prevent the feet from slipping on them. Glazing must tend to show out and preserve the colours of encaustic tiles. In these specimens, however, the glazing is unequal, some looking highly varnished, and the glazing on others being scarcely visible.

No. 152. Corrugated papier maché for living portable houses, and for partitions, panelling, and ornamental purposes.

No. 153. Rausome's silicious stone, and 154, a process of preserving stone: these are interesting specimens.

No. 155. Page's pellucid chromatic embossed glass.

No. 156. Imitation of stained glass, consisting of sheets of gelatine, painted and inserted between two sheets of glass; Myers, exhibitor: a good subject for ladies to amuse themselves with.

No. 157. Enamelled wrought and cast iron, from the Patent Glass Enamel Company, Birmingham. Besides various household utensils, including unbreakable crockery, and untaintable saucepans, we have here specimens of enamelled iron pipes, which look promising for so great a desideratum and substitute for lead. The enamel does not look just so nicely laid on inside the pipes, however, where it is of most importance, as on the outside; still the iron seems to be effectively covered.

No. 158. Specimens of the patented process for

coating iron with copper and brass; Tytherleigh exhibitor. Here are brass nails made of iron, and sheets of iron tinned with brass. This is another mode of guarding iron articles from corrosion: the lacquering seems to be complete, and the articles have all the appearance of brass.

No. 162 is an attractive looking show specimen of Parrell's new patent "universal lock," of which we have already expressed a favourable opinion: as an exhibition article, this is one of the most noticeable in the room.

These are the chief objects of interest to our readers in this exhibition, although there are many others of a miscellaneous order to which we might have referred, did our limits permit. It will be seen that there is not a very numerous list of building trade inventions this year, and that, in fact, most of those noted have already been described in our columns, as have others connected with sanitary science and ventilation, engineering, gas, mechanics, &c. to which therefore we need not here make any further or more special reference.

## EXPERIMENTS ON DANTZIC TIMBER.

REFERRING to the account of experiments on the elasticity of timber, by Mr. H. R. Abraham, at page 25 of the current volume of the *Builder*, wherein, after giving the particulars of the deflexions produced by different weights on a beam supported at both ends, and loaded uniformly throughout its length, he states, that "4750 is the multiplier for elasticity," probably many of your readers may have been puzzled to know how this result has been arrived at: perhaps Mr. Abraham would not object to add to the value of the experiments, by stating what formula he adopts to obtain his constant.

Tredgold's general formula for a beam, supported at both ends, and loaded in the middle, is  $\frac{B \times D^3 \times d}{12 \times W} = a$  constant number, when B = the breadth, and D = the depth, both in inches; L = the length of bearing in feet, W = the weight in pounds, and d = the deflection in inches, for the material ascertained by experiment.

In computing the constants given in his own tables of experiments, Tredgold takes forty times the result of the above formula, thus  $\frac{40 B D^3 d}{12 \times W} = a$ .

But where the weight is uniformly diffused over the length of the beam, as in the experiments alluded to, he shows that the deflection produced is, to the deflection resulting from the same weight collected in the middle, as 5 is to 8, or, as '625 is to 1; therefore, to obtain the value of a, for a beam uniformly loaded, the formula becomes  $\frac{40 B D^3 d}{L^3 \times 625 W} = a$ .

Applying this formula to Mr. Abraham's experiments:—

When W = 8 tons and d = 2.65 then a = '0188  
 " W = 10 tons " d = 3.50 " a = '0198  
 " W = 14 tons " d = 4.25 " a = '0172  
 " W = 15 tons " d = 4.80 " a = '0181

Average value of a = '0185

If the theory from which the formula is deduced were absolutely correct, and the several weights and deflexions accurately noted, of course the value of a would be the same in each case: as it is, it appears that with 10 tons the deflection was greatest in proportion to the weight, and that it was least in proportion when the beam was loaded with 14 tons.

It will be observed that the value of a here given is very different to the multiplier obtained by Mr. Abraham.

## IRON AND STEEL MANUFACTURE.

MR. BESSEMER seems resolved to make the best possible use of his process for keeping iron melted without fuel. He last month filed specifications of other two new patents for further improvements. He states that by the ordinary puddling process of reverberating flame and gaseous matter from mineral coal on to the molten or semi-molten metal, the iron is injured, at great cost; and the object of his first patent is to sustain, without ordinary fuel, the heat requisite during a process producing the effect of puddling, or during puddling itself, by forcing into and amongst the iron particles, through jet pipes of fireclay, or iron, jets of air, or other gaseous or gaseous with pulverulent matter, containing sufficient oxygen to keep up the heat of the metal, so as to admit of the puddling or other processes producing the same effect. The second patent claims the obtainment of crude or gray pig-iron, hard white iron, or steel, and malleable iron, direct from carbonaceous iron ores, or from any mixtures of carbonaceous ores with oxides or other ores of iron, by the



application thereto of a blast of hot or cold air, or steam, or of any other gaseous matter containing oxygen or hydrogen, and without requiring any fuel except such as is evolved from the said ores of iron, and from the gaseous matters forced in.

It is rather a curious circumstance in reference to the essential principle of all Mr. Bessemer's processes, namely, the dispensing with ordinary fuel in his melting processes, that an old author, who wrote before Mr. Bessemer could have ever dreamt of his new processes, in a work treating of the Japanese and their inventions, is said to have stated that they had one "for melting iron without using any fire, casting it into a tun, done about on the inside with about a half foot of earth, where they keep it with continual blowing, and take it out by ladles full, to give it what form they please, much better and more artificially than the inhabitants of Liège are able to do. So that it may be said Japan may live without its neighbours, as being well furnished with all things requisite to life."

There is scarcely any new invention of mark or moment, of which traces have not existed in the East from time immemorial. Such was the case with the screw propeller, with gas, with the compass, and many other inventions and discoveries; and new instances are ever and anon turning up, as was lately the case with the screw augur and the Bramah lock. If the Japanese (a sort of insular Chinese) do really practise this new process of Mr. Bessemer's, depend on it "there is something in it," however much it may as yet be involved in difficulties.

#### ROME.

THE POPE INSPECTING M. OVERBECK'S NEW PICTURES.

ON the 7th of February the Eternal city was pleasantly surprised by the visit which Pío IX. paid to the atelier of the German painter, M. Overbeck, in his villa on Monte Esquilino. His visit chiefly referred to the picture *Alta Tempora*, which is to be placed in the Palazzo Quirinal, and which Overbeck has completed during his late *viaggiatura* at Perugia, representing the Saviour disclosing to the future Evangelist the Secret of the Trinity. Christ is represented in a sitting position, a holy vision rests on his brow, whilst the loving disciple reclines at the breast of the Divine master, listening to the disclosures of his inspiration. The sculptor, M. Hoffmann, is engaged to execute this fine design as a group in marble. M. Overbeck is now painting the "Stations," as well as an allegory of the Seven Sacraments.

#### ELECTRO-TELEGRAPHIC PROGRESS.

THAT there will shortly be a telegraphic line laid down to India, we think, cannot well be doubted, whether the Russians, as alleged, are already laying one down to Teheran or not. There are now two schemes afoot for an Indian line; but there is a serious question as to the best or most practicable route. The Euphrates or Mesopotamian line would be 800 miles shorter than that by the Red Sea, but the tender mercies of the wild Asiatics, we fear, are less to be trusted to than the casualties of the stormy sea. The Red Sea line would be mainly submarine, the Mesopotamian chiefly subterranean; and that the wild tribes who scour through rather than inhabit the territories adjoining the Euphrates are but too likely to be perpetually tearing up the wire, on one superstitious or ignorant pretence or another, is much to be feared; so that an expensive, or rather an impracticable, police would be requisite, as Lord Palmerston states that the Company must see to that themselves. On the whole, it would seem that the Red Sea route is the likeliest to become the established one. Besides its more direct purposes and uses, it would, contingently, be of service to our marine, both naval and mercantile, as much of it would be coasting in its character.—The great Atlantic line is on the way. Two first-class United States steam-ships, the *Niagara* and the *Mississippi*, are to come to England, where they will be associated with two similar British steamships, for the purpose of laying down the line from the middle of the Atlantic landwards. The telegraph is reported as likely to come into operation about August next, but we cannot place much reliance on that date. There is no doubt, however, that the utmost expedition is being used by all who have the practical part of this magnificent undertaking to carry out.—The Inter-oceanic Telegraph will thus soon put a belt around the globe; and one question which will then arise is,—What will be done about Sunday? Sundays will generally become confused. If the telegraph offices in all parts of the world close on Sunday, news arrangements will be greatly interrupted and delayed; for Sunday in one place will of course be Saturday or Monday in others.

Another question suggests itself to us on examining, at the Society of Arts Exhibition, a small piece of one

of the Dover sub-marine lines, ticketed as follows:—"Piece of sub-marine cable taken up off Dover, covered with simple gutta-percha,—the electric wire corroded!" If this were intended to depreciate the merits of "simple gutta-percha" in comparison with a combination of gutta-percha and ground cocoa-nut shell beside which it lay, the purpose entirely fails, for the copper wire is clearly not corroded, at least to any appreciable extent; but what is very singular, and seemingly important, is the fact, that the wire is divided into short pieces of about half an inch each in length, and as it were beat in at each end, as if some mechanical force had been used to shorten each piece, leaving small vacant intervals, just as if the wire had been so contracted and consolidated that it could no longer retain its former length, and so had divided itself into separate morsels. If the electric force shot through such wires be a concentrative one—more analogous to cold, for example, than to heat, or to attractive force than to repulsive—as we have always maintained it to be, this curious result of its continued operation would be explicable. Whether it be possible to counteract it by some alternative process, is another question: doubtless, the electric message will still pass along a wire so disintegrated, but in a length of line such as that of the Atlantic telegraph, may it not at length lead to imperfect or more expensive working, if not also to other inconveniences? It may be worth noting here that in the fragment of cable alluded to the gutta-percha was nearly all to one side of the wire, a comparatively thin film only covering it on the other side.

#### THE TEMPLE FOUNTAIN AND GARDEN.

WILL you spare a corner in your paper, and lend your aid, to save from ruin one of the most charming spots in London? I allude to the celebrated Temple fountain and garden, now doomed to destruction by the benches of the Middle Temple—an irresponsible body, who squander away the funds of the society in acts of the most perfect Vandalism. I ask anybody who has a taste for the beautiful to visit this spot now that the trees are coming into leaf, and say whether any but barbarians could think of destroying it, and covering the space with a mass of brick. London has surely need of all her vacant spots for the sake of health and enjoyment—more especially if they contain trees and verdure, such a relief to the eye and the mind fatigued. The Bar of the two Temples are unanimous in condemning this monstrous outrage on good taste and on all that is old and venerable, and a numerously-signed petition has already been sent in, to be followed by several others in course of signature against the measure. Our rulers seem demented: but there is a secret cause for everything, and Sir R. Bethell could tell it you in this.

Help us, sir, to save this lovely spot, and receive our united thanks and those of posterity.

R. PATERNOSTER.

#### THE SOANE MUSEUM.

AFTER a long vacation, the collection in Lincoln's-inn-fields is again open, and may be seen on the Thursday and Friday in each week till the end of the month of June, by all persons who apply previously, by letter or personally, for tickets of admission.

Some alteration in the management of this important collection is much to be desired: its educational value to the public is at present next to nothing. It is little better, in fact, than a sealed book.

#### CHURCH-BUILDING NEWS.

**Broughton-cum-Filkins.**—The new church of the recently consolidated parish of Broughton-cum-Filkins is to be consecrated on the 14th inst. It is in the Early Decorated Gothic style, from designs by Mr. G. E. Street.

**Honley.**—On the 25th ult. the school chapel at Skirret, in the parish of Hambleton, was opened. It is intended for the double purpose of providing a school for the infants of the hamlet, and a place for the occasional performance of Divine service, for which it has the bishop's license. The building is very small, and is simple and inexpensive. The architect was Mr. H. Woodyer, of Grafton, near Guildford, and the contractor, Mr. Courtney, of Hambleton.

**Croydon.**—St. Andrew's Church here was consecrated on Thursday in last week. It is in the Middle Pointed Gothic style, with turret and bell, and has a nave, chancel, and vestry-room, with sedilia, credence table, &c. The eastern window is of stained glass, representing St. Andrew. The other windows are of Powell's patent stamped glass. The seats are all open. The pulpit is of Caen stone, and the font of the same material, inlaid with marble panels. The building is situated at Southbridge, between the old church of St. John's and the new church of St. Peter's.

Mr. H. Woodyer, of Guildford, was the architect, and Mr. Swayne, of same town, the builder.

**Baschurch (Shropshire).**—In the outlying district of the parish of Baschurch, called Weston, Mrs. Barrett, of Prince's-terrace, Hyde-park, formerly of Prescott, has erected a church, and a parsonage-house attached, at a cost of 5,000*l.* and endowed the incumbency with 200*l.* a year, besides a sinking-fund for repairs. The church, which is dedicated to the Holy Trinity, consists of nave and chancel, with vestry and north porch. A turret and spire, containing two bells, spring out of the nave roof near the west end. The interior is fitted up with open seats for about 145 persons, free. The roof is open-timbered, and like the pews, of stained deal. The parsonage-house, which stands on the south side of the church, is connected with the latter by means of a cloister, principally composed of timber work. The style of the church and parsonage is geometrical. The walling and dressings are of Caen stone, and the roofs are covered with blue Staffordshire tile. The architect is Mr. Edward Haycock, jun. of Shrewsbury; the builder, Mr. W. S. Rogers, of Beaumaris, who recently built the church at Trefnant. The church was consecrated on Tuesday before last by the Bishop of Lichfield.

**Batley.**—A new Independent chapel has been opened here this month. It is built of Yorkshire stone, in the Early Decorated style of Gothic architecture, and measures 68 feet by 86 feet, and 30 feet in height within (the roof not being open to the apex). It consists of the chapel, vestry, with organ-gallery over, gallery at the west end, and tower and spire 100 feet in height, placed at the south-west angle outside the external walls. The whole has been executed from designs of Mr. Michael Sheard, jun. architect, at a cost of about 1,700*l.* exclusive of the land.

**Sedgley (Staffordshire).**—On Monday week the memorial stone of a new Congregational chapel was laid by the Rev. T. A. James, of Birmingham. The edifice is intended to hold about 400 on the ground-floor, with sufficient height in the walls for galleries, though at present only an end one for children is contemplated. The style adopted is Early Decorated, and the material for the walling Gornal stone rubble work, with part Kingswood, and Box ground stone dressings. The contract is for 1,400*l.* The architects are Messrs. Bidlake and Lovatt, of Wolverhampton; the builder, Mr. Burditt, of the same town.

**Smallbridge.**—A painted memorial window, by Messrs. R. B. Edmondson and Son, of Manchester, has been prepared for the church of St. John the Baptist, at Smallbridge, near Rochdale. The window is for the chancel, and consists of three lights, with tracery, and is in the Transition style. The design comprises, first, six acts of mercy, three in each side light, the incidents of which typify the verse, "I was a hungry, and ye gave me meat; thirsty, and ye gave me drink; a stranger, and ye took me in; naked, and ye clothed me; sick, and ye visited me; in prison, and ye came unto me." The centre light shows the agony in the garden, with Peter, James, and John asleep in the foreground, and "The Last Supper," introducing the heads of all the apostles. At the foot is Christ bearing the cross, and the Crucifixion. The two principal compartments in the centre depict the Resurrection and the Ascension. The tracery represents the birth of our Saviour, John baptising Christ, and Christ blessing little children. All the subjects are under canopies, and every part of the window is filled with minute details in foliage and geometrical work.

**Wakefield.**—A public meeting of the inhabitants was held last week, for the purpose of taking preliminary measures for repairing the tower of the parish church, taking down and rebuilding the spire, and reseating the body of the church, &c. An estimate of the cost was laid before the meeting, showing that the amount required would be about 8,000*l.* which it is proposed to raise by public subscription. After some discussion, the meeting adjourned until the 16th instant.

**Aspull.**—The foundation-stone of a new Roman Catholic chapel has been laid at the village of Aspull, near Wigan.

**Belfast.**—The foundation-stone of a new Presbyterian meeting-house at the Maze was laid by the Marquis of Downshire last week. The building, according to the *Belfast Newsletter*, is considerably advanced in erection. It is situated within a stone's throw of the bridge across the Ulster Canal. The style adopted is the Early English. Lord Downshire has granted the site for its erection. The outside dimensions are 60 feet in length, and 85 feet in breadth. It contains a vestibule, with a staircase to an end gallery in front, and session-room, and other requisite apartments in the rear. The front, which is set back about 80 feet from the public road, consists of a bell-gable, in the under part of which is a deeply-recessed entrance doorway of cut stone, having pillars with



carved capitals and bosses, moulded arch, and other ornamental work. Over the doorway is a triple window, and the gable is surmounted by a belfry, the total height of which is about 55 feet. The roof, which is of a steep pitch, will have the timber exposed to view inside, and the timber will be stained, and varnished. There are diagonal buttresses at the corners, and three others on each flank. The whole fabric is to be of brick, with cut-stone dressings. The plan was prepared by Mr. John Boyd, of Belfast. The total cost, it is said, will be about 700*l*.

**St. Johnston (County Donegal).**—The foundation-stone of the new (R.C.) church of St. Baethen, St. Johnston, county Donegal, was to be laid, according to the *Londonderry Journal*, on the 4th inst. The site is on a sloping and elevated ground, in the immediate neighbourhood of the old disfranchised borough of St. Johnston, looking out on the river Foyle and railway. The plan is in the form of a Latin cross, comprising nave, transepts, chancel, porch, and sacristy, with a bell gable over the chancel arch. The total length will be 109 feet 5 inches, and the greatest breadth 56 feet 5 inches. The height to the top of the bell-gable will exceed 70 feet. The character of the exterior will be simple. The principal light will be obtained from traceried windows in the four gables or extremities of the cross. In the interior the chancel arch will form an important feature, from which six steps will lead up to the high altar, which will have all the arrangements necessary for the celebration of mass, provided in the building, including sedilia, piscina, credence, shelf, ambury, reredos, screen, &c. The roof timbers will all show, and will perhaps be stained and varnished. The whole of the work is being carried out from the designs and under the superintendence of Mr. E. W. Godwin, architect. Mr. Gore, of Londonderry, has contracted for the supply of all the cut-stone work necessary for the completion of the building.

#### PROVINCIAL NEWS.

**Lincoln.**—The accommodation at the County Lunatic Asylum, on Bracebridge-heath, having become insufficient, it has been determined to enlarge the same by raising the wings one story, and adding two back wings at the ends of the old wings. Drawings for these additions have been prepared by Mr. Thomas Parry, the Kesteven county surveyor, and tenders were opened there on the 12th March, from the following contractors. Quantities supplied:—

Geo. Myers .....	£11,000	0	0
J. Dent .....	10,500	0	0
Huddleston (C. J.) .....	6,768	0	0
Holmes (Liverpool) .....	6,750	0	0
Young (Burslem) .....	6,556	0	0
Surveyor's estimate .....	7,187	5	0

Mr. Young's tender was accepted, and the works have been commenced by opening a quarry close to the asylum, on land belonging to the county. Mr. F. W. Gill has been appointed clerk of works.

**Bampton.**—The opening of the church-school at Aston, in this parish, is to be celebrated on the 13th inst. The building has been raised by the contractor, Mr. Robert Plaster. The architect is Mr. Castle, of Milley, near Oxford.

**Poynings.**—A school for this village, it is said, will shortly be commenced. The first and only design the Government would sanction was too costly for an agricultural parish, containing only two or three intrademes and as many farmers for contributors. Another set of plans have, however, been prepared, in which the chief architectural points have been preserved, and Mr. Teulon, it is hoped, will have succeeded in getting the approval of the reduced plans, and then the work will at once be commenced. The committee will be responsible to the builder. They now, according to the *Brighton Guardian*, only require about 100*l*. more than is already promised.

**Wolverhampton.**—The new school-rooms in connection with Queen-street Congregational Chapel are completed. The building has been erected at the back of the chapel, with frontages towards Market and Castle streets. From the former are the principal entrances, four in number, the one adjoining the chapel being the entrance to the chapel and vestries; the centre one of the remaining three leads to a lobby, thence into a large room adapted for the holding of lectures and week evening services, with seating for about 200 adults: the others are staircase entrances leading to the upper floors for boys and girls respectively. The further accommodation on the ground floor are the deacons' and minister's vestries and an infant school, the latter having a distinct entrance from Castle-street. On the first floor is a large school-room, 58 feet by 34 feet, with recessed days at the superintendent at one end and two class-rooms at the side, through which admittance is gained to the galleries of the chapel. On the second floor are the reading and discussion class-rooms and library for the use of the Young Men's Institute, the remaining por-

tion of the floor being appropriated to seven class-rooms. In the basement are the heating-apparatus, boiler-rooms, and cellars. The building is throughout heated by hot water, the work in connection therewith having been executed by Messrs. Perry and Sons, of Bilston, and lighted by gas in every room. The exterior of the building is Italian in style, executed in red brick and stone dressings. The cost, including fittings, will be about 2,500*l*. The architects were Messrs. Bidlake and Lovatt, of Wolverhampton, and the contractor, Mr. Elliott.

**Tamworth.**—At a special meeting of the local board of guardians, it has been resolved, by the casting vote of the chairman, to accept the tender of Messrs. Ferguson and Allen, of Nottingham, in preference to that of Mr. Parrel, of Rugby, whose estimate was more than 50*l*. lower than any of his competitors. The preference was shown to Messrs. Ferguson and Allen on account of their engaging to complete the work in a shorter period than Mr. Parrel. Six months, it is said, is the time fixed.

**Deansbury.**—The directors of the West Riding Union Banking Company have accepted tenders for the various works required in the erection of their new bank and manager's house, according to drawings and specifications by Mr. Michael Sheard, Jun. architect. The probable cost will be from 3,000*l*. to 4,000*l*.

**Durham.**—The works for the Durham Female Training School have been let, and will be commenced immediately. The contracts amount to 4,346*l*.

**Aberdeen.**—About twenty years ago a benevolent physician in the city of Aberdeen, Dr. Watt, gave a donation of 1,000*l*. for the establishment of a house of refuge for the destitute, and subsequently bequeathed an estate of eighty acres of land, near the town, for the purpose of supporting a reformatory for juvenile offenders. The rental having accumulated to a sum sufficient for the erection of suitable buildings, and donations having been received towards the support of a new reformatory, the building was erected, and opened on Wednesday week, in terms of the Reformatory Act for Scotland.

#### RECENT AMERICAN PATENTS.\*

**For an Improved Lathe for Cutting Fluted Mouldings.** JAMES ANDERSON, JOHN M'LAREN, and JOHN BRYANT, City of New York. *Claim.*—1. The adjustable rotating cutters attached to shafts, which are fitted in frames, the frames being fitted and working in pendant guides attached to the adjustable block. 2. Placing the leg between centres, which are attached to a swinging frame fitted on a reciprocating carriage; the leg being turned or rotated between its centres as the carriage moves by means of the inclined slot in the ledge or plate, and the lever and gearing.

**For an Improvement in Lathes for Planing Metal.** WILLIAM W. HUBBARD, Boston, Massachusetts. *Claim.*—Arranging the tool carriages, slides, or supports, on the vertical sides of the frame or bed, in combination with arranging above such slides, and so as to project from the sides of the frame and over the slides, covers, or guards, whereby the slides are protected from dust, chips, or other matters.

**For an Improvement in Cutting Metals.** ROBERT ANDERSON, U.S. Army, and AARON H. VANCELEV, Trenton, New Jersey. *Claim.*—The use of the parallel table, revolving table, and traversing table, in connection with machinery for punching and shearing metals, when the said tables are constructed and operated for cutting and punching straight, curved, or irregular forms in metal.

**For an Improvement in Cutting Files.** CHARLES MILLER, City of New York. *Claim.*—Fitting the chisel to work in a stock which rests upon the file blank itself, or on a pattern of a similar form moving with it throughout the whole length of the movement of the blank under the chisel, and serves as a stop to the chisel.

**For an Improved Machine for Sawing Marble and Stone.** GEORGE J. WARDWELL, Hartley, Canada. *Claim.*—Suspending the swinging saw-frame from levers, when arranged as described, and constructed with or without the circular bearing surface, resting on the friction roller or rollers, in the end of the vertical lever or levers attached to, and swinging with, the swinging saw-frame.

**For Improved Self-acting Head and Tail Blocks for Sawing Mills.** A. S. WALBRIDGE, Burlington, Vermont; patented in Canada, July 28, 1853. *Claim.*—The combination and arrangement of the T shaped carriage blocks, connecting rack, and setting-off shaft, whereby a self-operating carriage of any desired length or compactness is produced. Also, the self-setting-off device, composed essentially of the ratchet, disks, adjusting stop, and stationary cam.

\* Selected from the lists published in the Journal of the Franklin Institute of Pennsylvania.

#### Books Received.

*The Abbey of Saint Alban: some Extracts from its early History, and a Description of its Conventual Church.* Second Edition. Intended chiefly for the use of Visitors. London: Bell and Dally, 186, Fleet-street. St. Alban's: Langley. 1856.

*The Guide which the Rev. Dr. Nicholson drew up of his Abbey Church, was an elaborate and most trustworthy one; and we on a previous occasion made some use of its contents. It has now reached a second edition. It is to be wished that all our churches were illustrated with equal ability and research. Such a hand-book is not only instructive to the visitor, but invaluable to the future historian of the fabric treated of, as it gives a vast fund of references to available sources of reliable information: the rev. author of the one under notice seems to have spared neither expense nor pains, having even travelled to Cologne to gather authentic materials. Dr. Nicholson's love for the venerable building in which he officiates is reflected in his book.*

*Pre-Raffaellism; or, a popular Inquiry into some newly-asserted Principles connected with the Philosophy, Poetry, Religion, and Revolution of Art.* By the Rev. EDWARD YOUNG, M.A. London: Longman, Brown, and Co. 1857.

The pith of this interesting and clever book, so far as it relates to architecture, appeared originally in our pages,\* and we need therefore the less excuse ourselves for having allowed it to remain so long without notice. It deserves and has obtained attention. The writer is earnest, acute, and in parts eloquent, and it is not too much to say that he is the most powerful opponent that Mr. Ruskin has yet found. His zeal occasionally overruns his discretion, showing how too much praise provokes too much abuse. Mr. Young feels this himself, and says in his preface,—

"Something may be fairly set down to a defensive object; something to a sense of that very peculiar assertion of his supremacy, of which it may be said, as of oppression, that it 'maketh wise men mad,' and something to an ever growing jealousy of the materializing tendencies of the day we live in, and that disposition to sink the subjective in the objective—the moral in the physical—the feeling in the knowing, from which I cannot disconnect many things in the Turner controversy."

The writer takes up with warmth the cause of the old masters. In reply to the complaint that Guido and the Caracci were Eclectics, he says,—

"Let us know, then, where Guido found his 'Aurora,' and Annibal Caracci his 'Three Maries'; and Dominichino his favours of St. Andrea della Valle. Show me a figure any of them took from their predecessors, as Michelangelo did from Oragna, and Raffaello from Masolino. The charge is utterly untenable. The bees of Hybla were not more gullible."

What then was this 'Eclecticism'? Was not this its virtual language? All former art has been the art of schools. But each school has had its master genius, its excellence and special faculty. Study all, without enslaving yourself to any. Observe the good, avoid the bad, and this as standing on the vantage-ground of their collective experience. Painting is not copying figures, thinking thoughts, feeling feelings, and then giving thought and feeling its plastic utterance. Learn thoughts and feelings from your own hearts: learn the language for their expression from those who thought and painted before you. Such, I take it, was substantially the Eclecticism of Guido and the Caracci. It was eclecticism, not of materials, but of a mode of utterance,—the many eclecticism of independent action and native genius. How long has such eclecticism been deemed a crime? Or what is to be henceforth the course of the 'ingenues didicisse fideliter artes'—to have studied no school? To have studied one school? or to have studied every school?"

He maintains, too, the goodness of the present time as opposed to the mediæval period:—

"We are money-making people," he says; "I read on the frontispiece of our Royal Exchange, that 'The earth is the Lord's and the fulness thereof.' We reared, the other day, a Temple to Commerce, poetically called a 'Crystal Palace,' but which might have been called with more truth the eighth 'wonder of the world.' Our monarch inaugurated it with prayer and benison; and whilst the wide world was making pilgrimage to it, its sacred solitude, each returning seventh day, made an ignominious confession of the 'Lord of the Sabbath.' There is another fact I would dare to match with all the upholstery confession of the middle ages. Show me the equivalent to a money-loving people putting its hand into its own pocket, not to build proud towers, but to emancipate degraded savages; giving twenty millions, not at the bidding of an imperious monarch, or a tyrannical priesthood, but at the spontaneous call of the national conscience, and by the immediate instrumentality of the national will. There is a moral grandeur in this 'money grant,' that sinks the Pyramids into littleness. As for Christian heroism, what can history chronicle or poetry invent, of Godfrey, Richard, or St. Louis, that does not pale before the simple details of that poor despised Patagonian mission of the other day? I will not content myself with even the names of 'Nightingale' and her noble sisters."

Against the dictatorship of utilitarianism our author protests strongly: admit that all employment of columns, save for what on the very straightest principles are for actual use is wasteful, vicious, and in-

\* "Revolutionary Architectural Principles." Vol. XIV, pp. 161, 171, 203, 247, and 260.



NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.



# The Builder.

VOL. XV.—NO. 741.

**I**SOEENTLY, in the notice of a statue erected in a prominent position in the metropolis, we adverted to the frequent mistakes which there had been in the treatment of similar works, and expressed an intention of shortly returning to the subject. We would now inquire into the reasons of these failures. The subject is important, not only in the obvious relation to the improvement of the metropolis and provincial towns by the art which can be expressed in their streets and public places—and which there has been the desire growing, to exhibit by sculpture as well as architecture—but concerns the reputation of living English sculptors,—a reputation such as on other grounds, would claim no mean place, whether in relation to contemporary talent abroad, or to the merit which has been manifested through their productions, by artists, modern or mediæval, at home. Indeed, to any one who has watched the recent progress of the statuary's art, as exhibited in works which now adorn the private galleries of the country, it can hardly be necessary to quote examples, to show that in imagination and poetry of conception, and in simplicity of treatment—as in the beauty of modelling and dexterity of finish—the art of sculpture as practised in our day—at least in some main elements of its expression as an art—confers honour on our country and our school. Whatever may be now accorded for our works in painting—whatever merit there has been in those of sculptors who are deceased, as Banks, Bacon, Westmacott, sen., Chantrey, or even Flaxman, is paralleled, nay, rather is surpassed, by reason of what has been done by Baily, Behnes, Westmacott, jun., Gibson, Foley, Marshall, Lough, MacDowell, Bell, Durham, Thomas, Joseph, Edwards, and many others. How, then, comes it to pass, that when a "public statue" has been subscribed for, the article supplied should be so very different to what could fairly be anticipated? The real reason, we apprehend, lies in very narrow compass; and to some attempt at the exposition of it, we ask for our readers' attention.

Although the one branch of art—"sculpture," like that of painting, has been followed with much assiduity, and as to many essentials, with much success, there are branches of the artist's study, called for in the conception of most if not all works of art, which have not had sufficient consideration,—unless lately, in the course of the inquiries into the principles of design, and requisites of art, in architecture. It is true—whilst there are principles of art, some of which can be set forth in words, and some of which, perhaps, can be only felt—that, in one aspect, a single "art," as painting or sculpture, ought to be guided by rules which would be applied erroneously to another; but it is evident likewise, that there are principles applicable universally—to sculpture, painting, or architecture—and with which every artist should be conversant. Such relationship, indeed, is part of what exists throughout the circle of human knowledge: all arts and sciences are originally connected: no one is complete without the other. Enough in this, is said to show that the general unity of art, often spoken of, yet, per-

haps, too little apprehended, is an idea based on rational grounds. The philosophy of art forms one main division of human pursuit; and whether amongst the subdivisions of practice, architecture is to be classed with painting and sculpture, or as some have held with music; also what constitutes poetry, and what is the relation to it of a vehicle of expression as that of words, may be left for our present purpose undetermined. A certain unity of sensation is not the less existent in good works of art, because incapable of an exact analysis by language.

The several branches of art have, it is true, been acted upon injuriously during their pursuit at one time by the same men, and by the application of principles of one art to the medium of another. Architecture suffered during the period when painters were architects; yet, a painter-like power of composition, such as that ascribed by Reynolds to Vanbrugh, is not the less a desirable qualification for the architect. Whilst deriving what lesson there may be in general qualities, it is only requisite not to discard the particular qualities which make the distinction. There should be no reason now for falling into the mistake of Italians. Unless discussion has had no practical value, essential principles are at present, capable of application.

The distinctive qualities of architectural art arise from its constant association with structure, and with use. It is not requisite only that the eye should be delighted by beauty of outline, justness of proportion, and symmetry of parts; but the *reason* must be satisfied, whilst other conditions of the perfect result are observed. To expect that architectural effect would arise from mere expression or embodiment of use, or from mere observance of what otherwise might be the elements of the beautiful—each course—we now simply observe, would be a wrong one.

There appear to us, however, points of uniformity of principle, peculiar to the relation between architectural art, and sculpture, or some of the fields of the latter art. It should be recollected, more frequently than it is, whether as to painting or sculpture, that each has two distinct main fields,—that is to say, either, one as in participation with architecture, or as designedly complete without it. In the latter category may be classed all cabinet and easel pictures, and all busts, and generally single statues and groups, such as are found in the chief galleries of art and are in the examples before alluded to of high merit. Where, however, works of painting or sculpture are designed to form accessories in architecture, or cannot be viewed apart from it, they clearly require to be subordinated to some general principle, for the mutual harmony—to avoid loss, indeed, of labour and effect designed. Thus it becomes comprehensible that the architect of the Houses of Parliament should have desired a very different principle of decoration to that which has been observed in the chief fresco paintings which have been completed, and even the use, perhaps, of gold backgrounds. All, however, that we wish to say is, that the intention in such a case as this last, would be founded on correct views. Where the several arts are in juxta-position, they must either harmonise—even should it be by omitting something applicable elsewhere,—or they will contend with and to a certain degree injure one another. Sculpture, however, does not present the difficulties of combination which may exist in the case of painting,—perhaps because it is *divested* of the seduction of colour—the condition essential, as we must hold, to its character as an art—or, perhaps, because *predominance* of colour anywhere, is not favourable to the highest architectural effect. Any controversial points which are here involved we need not at present pursue; enough will, we apprehend, be conceded by all who have considered the relation of the arts, to serve our present argument.

The great point to be observed as to sculpture is, that in a large area of the field which it embraces as art, it is either one with the art of architecture, or is guided by collateral principles. As an actual thing modelled in the round (actual save as to the colour), instead of being a representation depicted on a surface—the work of sculpture ranks with that of architecture, and is subject to the same laws of proportion and symmetry. Even the structural element of architecture has its correlative in the sculptor's group; the requisites of apparent stability have to be expressed in both. Whilst as to the result derived from a certain attention to pyramidal outline above, and spreading base and growth from below, the more important works of sculpture have, as we shall shortly show, requirements for effect the same as the works of architecture.

Indeed, the exact requirements of sculpture which are just now wanting in the "public statues," are veritably those which are present to the sculptor's mind in his use of the word "group,"—of which term, the qualities as embodied in it, seem to be forgotten when the statue becomes, by allocation, a public monument. Perhaps, in some degree, the condition of the art which we have been adverting to, is due to the manner of giving commissions in cases such as those of the recent works,—the practice being to require a *statue* rather than to leave the artist unfettered as to the appropriate form of monument. Sameness, therefore, becomes the characteristic of the works produced; poetry of conception and inventive skill which need not be eschewed at any time, have no opportunity for expression; and all the acknowledged difficulties of modern costume stand unmitigated, save by the artifice of the cloak. No doubt, the lack of funds, the desire of representing the man in his habit as he lived, and the art and lasting beauty of the work, are difficult to be reconciled with one another; more, however, might be done, as we are prepared to argue, by means which might generally be found available.

We should, however, observe, that whilst our public monuments should exhibit design, beyond that of the mere statue, more frequently than they do, it is not desirable that the cumbrous allegory of the monuments of Westminster Abbey should be revived. It is to be regretted that in those cases, sculptors so readily fell into a manner which is rather wanting in art than characterised by it,—however excellent, particular figures may be in the modelling. The practice, exemplified in such cases, required to be referred to here, only that the remark may be now made, that from time to time a work appears in which there is a tendency to return to it. The works of Flaxman, and many recent productions, show that there is no reason for an alternative between invention and thought not readily intelligible, and poverty of conception as the accompaniment of simplicity of outline.

Whatever be the character of the statue, or group, it must be recollected that by the circumstance of its position as a public monument, it becomes amenable to the principles, and requires consideration of the essentials which we have ventured to speak of as those of our own art—architecture. Something more than the statue is in short required, and will make the "group,"—the pedestal, the site, the very posts and rails and pavement, will all go to help or to injure the effect of the whole; and are matters which should be included in the design of the artist, whether called architect or sculptor. And here, referring to the importance of that branch of sculpture which we have classed with architecture, can we avoid saying, that if little considered now, it has once or twice in the history of art, formed almost the sole, and yet the grandest, field of



the sculptor's labours and achievements? The finest Greek sculpture was designed and executed to serve the purpose of what we may call *architectural decoration*; whilst in the mediæval works, so intimate is the connection between the two arts, that it is impossible to point to that which is merely architectural, or that which is merely sculptural. In the Gothic sculpture of the best class, as the single figures, perhaps the variety of the treatment is not great in proportion to the number of works; but the sentiment conveyed was beautiful; and it seems to have been admitted by Flaxman, as again more recently, that the chief works possessed characteristics of the highest art. As sculpture, they gained by being designed in subordination somewhat to general principle, and to leading forms in the architecture.

Opposed to this is the modern system. A statue is ordered, and is cast in bronze,—in regard to which particular vehicle some distinct points will have to be mentioned. The site, the pedestal, the accessories,—in fact, what will make or mar the group, seems to occupy no part of the sculptor's attention. The site is generally the patch of ground that can be got in a crowded thoroughfare, where, devoid of everything that would contribute to the effect, the figure is set down, much as an Italian image man would rest his plaster-cast upon a stump at a street-corner. At Cockspur-street, the pedestal stands in the hollow with an extensive platform of mud in the field of view. Generally there is an iron railing—of a common sort—hiding the base on which much of the effect of any work depends; and there are four common street-lamps to group with the figure. Of pedestals, mention has been often made—as yet, with little result. There is one good one, to the statue of Charles I. and one in Russell-square, to the statue of the Duke of Bedford, and there is something which is, at least, sufficient and appropriate in effect, to the sedent statue of Fox, in Bloomsbury-square; but, generally in recent works, a few mouldings, as cornice and base, or mere blocks of granite with diminished sides, form the exemplification of the art in that part of the composition. The Wellington statue in the City has one advantage,—that resulting from its position in the platform of pavement before the Exchange,—the value of which last feature to the building named, it is well to notice as illustrative of the present subject. To the Wellington monument at Hyde-park Corner, it is hardly possible to avoid making a reference. Let it be observed, then, that whilst this is designed as a colossal monument, it is hoisted in the air, where its dimensions are wholly inoperative in any effect, unless by reducing the apparent size of the structure on which it is placed. The question as to the position across the direction of the roadway need not be revived,—except in the way of remarking that the principle of the design, or building, of the arch, being mainly that of adaptation of the character of an ancient structure, it may be considered that on that account, consistency should have been adhered to. But the lesson of this unfortunate case is from the fact that the whole difficulty came about by the want of proper regard on the part of the sculptor, for essentials of effect in his work.

Now, what should be done towards ensuring a better result in our public statues need hardly be described. It happens that at Charing-cross, in the statue of Charles I., the requirements of the case can be very readily made to appear exemplified. If the iron railing were removed, the group there would show to the eye, as to principle of design, nearly all that we have contended for. Had we a public statue to erect, we think we should go about it in this wise:—first, we would select a sufficient area, slightly elevated above the surrounding street; we would have the area accurately levelled and evenly paved, with dwarf posts at the angles and at intervals; in the centre of this, if the area would suffice, we would place a much smaller platform, on a few steps, with pedestals at the angles having ornamental accessories in union with the object of commemoration. On a larger scale, the Nelson Monument, in Trafalgar-square, with its angles intended to receive lions couchant, carries out a modification of the

principle. In the centre of the platform, we would place the pedestal for the statue, with its *basso relievo*. But we would take care that every public monument erected should have a distinctive character, and freshness of design, by numerous variations of any simple plan, such as that here sketched out. Some of the public monuments should be of such importance that accessory groups of a superior class should be provided,—like the seated figures around the pedestal of the Nelson Monument at Liverpool; or as in the monument of Frederic the Great, which may be well quoted as a rich example of that which we would seek to provide for in effect, in all cases—though often, as could be done by the most simple means.

With regard to the removal of iron railings,—the omission of such things is, we believe, quite essential to the effect of any pedestal or building,—unless in cases where there is a balustrade, as at the Clubs in Pall-mall—first designed for the particular situation. It forms the pith of our argument that the effect of every group—public monument, or statue, or building,—depends largely upon its spreading base and foreground,—its union with the site, its stability of appearance, and the culminating of its effect. Mr. Edward Hall, who in the course of writings of his in the *Companion to the Almanac*, the *Art-Journal*, and other publications, has used part of the arguments which we may have given in this place, has observed somewhere that the building, like a great tree, should, for the effect of it, seem to grasp the earth with its roots,—and this pretty well conveys the sort of effect which should be sought for in every work of architecture and every monument, but which has seldom been provided in England, except in recently erected churches,—where the dwarf walls, and low railing, let it be observed, instead of concealing that part of the structure which is of most importance to its dignity and grouping, greatly aid the pleasing result by spreading out the area of design in the eye, and so giving the effect which has been noticed as essential. Something of the same object also was, we believe, present to the mind of a writer in our pages, at the time of the discussion as to the site for the Wellington statue, when he advocated a low pedestal, and referred to the profile of the *scotia* moulding, as what he conceived should be the approximate outline of the base of the group.

The points which we have been referring to—trifling as they may seem to be in themselves—are really not so in their result, and will not be deemed unimportant by those who will pursue the consideration of the effect realised by buildings and other public monuments. There is, however, another reason why most of the recently erected statues are failures. That reason is in the treatment of form in the material in which they are cast.

There are good arguments in favour of a difference of treatment in bronze statues from what would be proper for those in marble. One reason is, that with the colour of the material as exhibited in our streets, heavy masses of drapery cannot be satisfactory. Another point for recollection is that in works of art, of the best class, the properties of material are to be always taken advantage of,—and just as you will see a different proportion and treatment between the *candelabrum* of stone and that of iron, or the tracery in stone, and that in brass-work, so we apprehend you will discover between the marbles and bronzes of the antique sculpture similar distinctive characteristics. We are sure at least that the observance of them would be found consistent with the best principles of art. What, however, can have less of any distinctive character than the statues which have been lately set up? Heavy folds of drapery, with little undercutting, are reproduced from a model—which may have been fitted for marble: not a particle of the ornament which relieves the sombre tint of the mediæval bronzes can be allowed to show on modern dress; and the whole work is black and bulky, and deadening in its effect, as it appears to be—more than it really is, perhaps—in its art. We apprehend that a different character of drapery might be tried in bronze with advantage; that the colossal should be altogether avoided; and that the ingredients of the composition of the material,

at present in general use should be reconsidered. It is worthy of note, that one of the best bronze statues—that of Charles I.—in addition to its general merits, has many accessories of dress, which greatly help to prevent the monotony of the impression derived; and we believe that the real reason of the objections which are heard as to the statue of George III., would be found, on careful analysis, to have more to do with the mud of the site, and the railing and lamp-posts, than with the obnoxious pig-tail,—however indisposed we may be as artists to the revival of that appendage in future costume. If we are right, it follows as a matter of course that the equestrian statues, as having more detail in them, as well as more matter of interest, will be more satisfactory than the others of recent production. Foley's Lord Hardinge, however, is an admirable specimen. Beyond much of what lately has been done, we see no reason why the sculptors of the present day should not greatly advance; and to them, as our brethren, of one calling—requiring the like perceptions, and animated by the like enthusiasm—we venture to dedicate these not hastily formed, though inadequately expressed opinions, as to the value of *grouping*, and of attention to the properties of materials, as part of the subject which they have to consider towards reaching the purpose of their art.

#### CHIMNEY-SHAFT, MANCHESTER.

AFTER reading Mr. Rawlinson's suggestive paper on "Chimney Construction" in our journal of the 28th of February, Mr. Thomas Worthington sent us the annexed illustrations of a chimney-shaft recently erected in Manchester, under his direction, for the Manchester and Salford Baths and Laundries Company. It serves the double purpose of a smoke-due and a vapour-shaft, the smoke being discharged at the top, and the vapour through the openings at the sides. The smoke from the boilers and drying-furnaces passes into a chamber at the bottom, whence it is carried up a circular flue of boiler-plate, fixed in the centre of a brick shaft five feet square, which latter carries off the vapour from the several parts of the building. The boiler-plate becoming heated, rarifies the surrounding air, and extracts the vapour very effectually.

Our readers acquainted with Italy will perhaps recognise in the design somewhat of the character of the celebrated tower at Sienna, which is sketched by every travelling architect.

The builder was Mr. Neill. The height of shaft is 90 feet. The outside measurement at base is 8 feet square, with a slight batten up to the projecting top, where the vapour is discharged. The materials used are the ordinary seconds red stocks of the district, set and pointed in black mortar, with dressings of coarse grit, from Yorkshire, roughly hewn and boasted on the face.

The boiler-plate central smoke-flue is, in five lengths, rivetted together like an ordinary boiler, the plates being at the bottom 3-8ths thick, and diminishing to 5-16ths at the top. This flue is supported on a cast-iron base-plate, built in on corbels, as indicated on section, the base-plate being 14-inch thick, with sixteen radiating ribs to strengthen it.

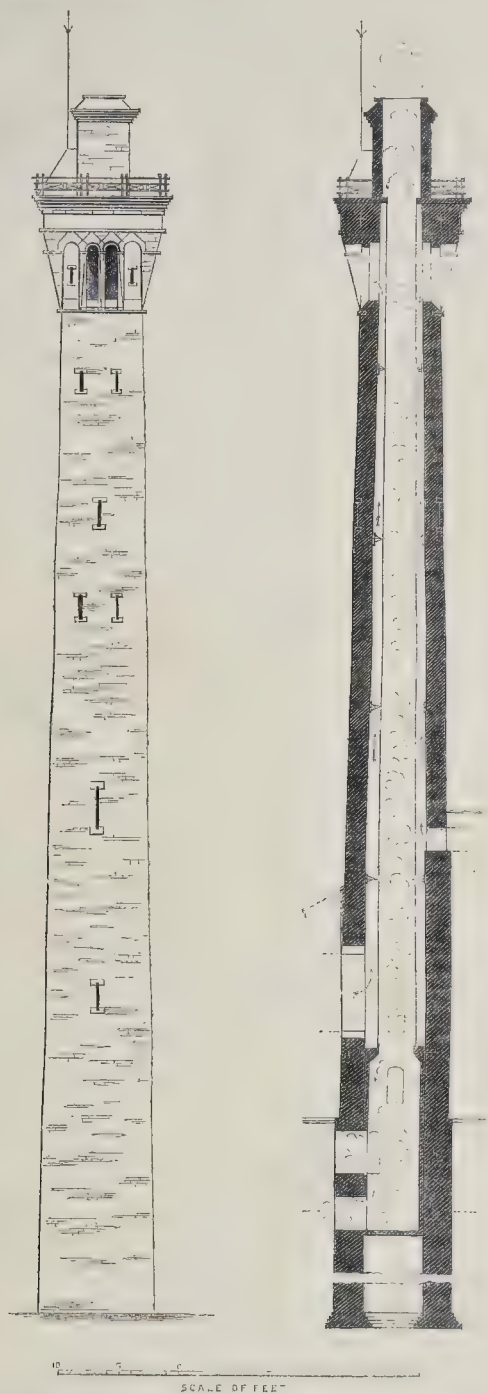
#### ROME.\*

THAT further we prosecute the study of Roman topography, the more are we convinced of the fallacies of many of the opinions which once passed current with the world, the more do we perceive upon what insecure foundations we have based the fabric of our belief. The vagueness of the descriptions of the Romans themselves, so loosely put together in the full security of their own intimate knowledge of the scenes they were describing, has been the cause of endless discussion upon topographical points, and scholar after scholar has deduced fresh results from every new light thrown upon them, until actual excavation has demonstrated the worthlessness of such theories, and shown that upon it alone must we look for the solution of these questions so long at issue.

We before enumerated a few of the ancient historians upon whose works the early history of Rome has been founded, and drew attention to some of the sources whence still earlier writers, now lost, drew their knowledge; and we will now in like manner call attention to the sources of our knowledge of Roman topography.

\* See p. 182, ante.





FURNACE CHIMNEY, MANCHESTER.—MR. WORTHINGTON, ARCHTCT.

The descriptions of the ancient writers that are extant form our second means of topographical information; the first being of course the existing remains of the monuments of antiquity themselves. Third in order, and forming a very valuable source of information, are inscriptions,

and amongst them the fragments of *fasti*, or *kalendaria*, have been of service in marking the sites of temples where certain sacrifices were performed. These *fasti* were of two kinds, *sacri* or *kalendaria*, and *annales* or *historici*. The first of these was a kind of almanac, for some cen-

turies kept by the priests alone, enumerating the months and days of the year, *nonas*, *ides*, &c.; together with festivals, astronomical observations, and public events. The latter were chronicles, such as the *annales maximi*; and from a similar arrangement of dates and events to that of the calendars the term *fasti* became equally applied to them, and indeed by a poetic licence to all historical records.

Poggini, in his work upon the Prænentine Calendar, enumerates eleven of these fragments, named after the places where found, or the families who possessed them; and from which fragments he manages to extract the complete *fasti* of the whole Roman year. Of inscriptions, the most important specimen is the Marmor Ancyranum, or copy of the record of his acts, prepared by Augustus for his mausoleum, and inscribed upon the walls of the marble temple dedicated to him at Ancyra.

An inscription of less importance, but still of considerable value, is the Basis Capitolina, containing the names of the *Vici* of five regions, whose *Curatores* and *Vicomagistri* erected a monument to Hadrian. Another singular relic of antiquity, and whose mutilated condition must ever be lamented, is that known as the Capitoline plan. It is a plan of Rome to a large scale, incised upon white marble, but in so imperfect a state that but little help can be derived from it. Canina has ascertained its scale, and Becker its bearings; but the topographical connection of the buildings described is very difficult to be traced.

The literary records of the Middle Ages that remain occupy the next place in the study of Roman topography, and constitute a feature in its new school, although reliance upon Medieval authorities is by no means satisfactory, unless supported by collateral proofs, the corrupt state of the text of early writers being proverbial. Amongst works of a prior date, the "*Notitia Dignitatum Utriusque Imperii*," a statistical view of the Roman empire, with a description of the city itself added to it, ranks first. This MS. as Mr. Dyer observes, cannot be later than the reign of Constantine, since no Christian church is mentioned in it, nor, indeed, any building later than that emperor. Of the catalogues of Victor and Rufus, once forming the basis of Italian topography, but now considered spurious, we shall speak anon.

Of Medieval authorities, the collection of inscriptions and routes to the chief Roman churches, by an unknown author, known from the monastery where the manuscript was found as the "*Anonymous of Einsiedlen*," is the most valuable. This work appears to belong to the age of Charlemagne, and was, at all events, written before the Città Leonina was enclosed by walls.

Inferior to this is the *Ordo Romanus*, a ritual of religious processions of the twelfth century, in which ancient buildings are incidentally mentioned, but under strangely disguised names. Niebuhr, with much ingenuity, explains these disguises. Thus, for instance, was the temple of Julius Cæsar called the *Asylum*,—that of Venus and Rome of *Romulus*,—and the Forum of Nerva that of *Trajan*; and in the manuscript of the twelfth century, preserved in the Vatican, called *Mirabilia Roma*, many more such perversions are found.

"In the last days of Pope Eugenius IV.," says Gibbon, "two of his servants, the learned Poggini and a friend, ascended the Capitoline hill, reposed themselves among the ruins of columns and temples, and viewed from that commanding spot the wide and various prospect of desolation. The place and the object gave ample scope for moralising on the vicissitudes of fortune, which spares neither man nor the proudest of his works, which buries empires and cities in a common grave; and it was agreed, that in proportion to her former greatness, the fall of Rome was the more awful and deplorable." The sketch of Poggio, who flourished in the fifteenth century, made above 900 years after the fall of the Western Empire, though not in itself critical or investigatory, is interesting, as one of the earliest works of the revival, and as written by one of the first who raised his eyes from the monuments of legendary to those of classic superstition. "Besides a bridge, an arch, a sepulchre, and the Pyramid of Cestius, he could discern, of the age of the republic, a



double row of vaults in the salt office of the capitol, which were inscribed with the name and munificence of Catullus. Eleven temples were visible in some degree,—from the perfect form of the Pantheon to the three arches and a marble column of the Temple of Peace, which Vespasian erected after the civil wars and the Jewish triumph. Of the number which he rashly defines of seven therma, or public baths, none were sufficiently entire to represent the use and distribution of the several parts: but those of Diocletian and Antoninus Caracalla still retained the titles of the founders, and astonished the curious spectator, who, in observing their solidity and extent, the variety of marbles, the size and multitude of the columns, compared the labour and expense with the use and importance. Of the baths of Constantine, of Alexander, of Domitian, or rather of Titus, some vestige might yet be found. The triumphal arches of Titus, Severus, and Constantine were entire, both the structure and the inscriptions; a falling fragment was honoured with the name of Trajan; and two arches still extant in the Flaminian Way have been ascribed to the baser memory of Faustina and Gallienus. After the wonder of the Coliseum, Poggius might have overlooked a small amphitheatre of brick, most probably for the use of the Pretorian camp. The theatres of Marcellus and Pompey were occupied in a great measure by public and private buildings; and in the Circus Agonalis and Maximus, little more than the situation and the form could be investigated. The columns of Trajan and Antonine were still erect; but the Egyptian obelisks were broken or buried. A people of gods and heroes,—the workmanship of art was reduced to one equestrian figure of gilt brass and to five marble statues, of which the most conspicuous were the two horses of Phidias and Praxiteles. The two mausoleums, or sepulchres, of Augustus and Hadrian could not totally be lost; but the former was only visible as a mound of earth; and the latter, the Castle of St. Angelo, had acquired the name and appearance of a modern fortress. With the addition of some separate and nameless columns, such were the remains of the ancient city: for the marks of a more recent structure might be detected in the walls, which formed a circumference of ten miles, including 379 turrets, and opened into the country by thirteen gates."

The work of Biondo Flavio, entitled "Roma Instaurata," published in 1513, may be considered the first regular treatise on Roman topography, and served as a foundation for the subsequent works of Andrea Fulvio, Fauno, and Marliano, the condensed and accurate description of the last of whom may be considered a complete type of the first period of Roman topography, and Bunsen observes that in some parts it has never been surpassed.

Of the numerous writers who flourished from the middle of the sixteenth to the middle of the seventeenth century, may be cited Panciroli, who published, in 1553, his "Commentarium Republice Romanæ;" and under whom, and Marliano, the study of Roman topography became as important a branch of literature as under San Gallo, Labacco, Scillo, Palladio, Scamozzi, Santo Bartoli, Desgodetz, Piranesi, and Canina, it became at once a science and a fine art.

The next work of pretension was the "Roma Vetus et Recens," of Danti, published at Rome in 1638, but which was soon eclipsed by the more celebrated "Roma Antica" of Nardini, in 1666, and which continued the standard authority to the beginning of the present century. The fourth edition of his work, edited by Nibbi, Leipzig, late as 1818. Nardini seems to have traced the creed of Roman topography, but his merits were greatly overrated by his disciples. Mabillon and Montfaucon, learned French Benedictines, towards the end of the seventeenth century, rendered much service to the cause by their publications. Borrichius, in 1687, published a topographical sketch of Rome according to the regions. The more pretentious work of Antonius, a scholar from Nardini, appeared in 1704, and was generally regarded as the parent of most modern guide-books; and, lastly, Nibbi, in his "Foro Romano," "Via Sacra," "Mura di Roma,"

and "Roma Antica," completes the list of the leading authors of the Italian school.

Of English authors, the works of Lumisden, Hobhouse, Burton, and Burgess (the latter, especially, evincing the highest scholarship), are of a date antecedent to modern discoveries; but the excellent papers of Mr. Bunbury, and the late elaborate essay of Mr. Dyer, are most welcome additions to our Roman topographical literature. Of the sparkling and invaluable observations of that eminent scholar, Forsyth, we can never weary, but they are too short and discursive to be of much aid in modern times.

It was in 1829 that a new era commenced in Roman topography by the publication of the views of Niebuhr, Bunsen, Platner, and Gerhard, in the first volume of the "Beschreibung," which event produced as great a revolution in that science as that made by Nardini, a century and a half before. Their work was immediately received as the standard authority in Germany, but it made but little impression upon the Italians, so long accustomed to the undisputed domain of the subject; and, so late as 1838, Nibbi, in his "Roma Antica," retains the old creed, and speaks with reverence of Nardini and his fallacious guides.—Victor and Rufus. The "Indicazione Topografica" of Canina, displays more originality and independence, but is still deficient in critical investigation; but his researches have thrown much light upon many points of obscurity, and especially in the localities round the Forum. The result of the publication of the "Beschreibung" has been the formation of two distinct schools of opinion,—Italian and German, "the former attaching themselves more particularly to the investigation of the existing monuments, and making use of the authority of the ancient writers rather as a subsidiary resource, than as the first and primary source of information; the latter adopting more exclusively the historical mode of inquiry, and appealing only for occasional assistance to the relics of ancient buildings: the Italian still looking up to Nardini as their great leader, and following with implicit faith the guidance of the so-called *Registriarii*, Victor and Rufus; while the Germans repel with uncompromising boldness the authority both of the one and the other."

Such is the exposition of Mr. Bunbury, as contained in an excellent paper in the Classical Museum, wherein the writer clearly explains the leading points of difference between the adherents of the two schools of opinion.

These schools, a few years back, received a fresh involvement or subdivision in the person of M. Becker, already known to the world of letters by his "Gallus" and "Charicles," who, in a little treatise, "De Romæ veteris Muris atque Portis," and afterwards, more elaborately, in his "Handbuch," declared war against both schools at once. Speaking in terms of the greatest disparagement of the Italian topographers, he hauls the German ones but little less severely. Still he belongs more to the German than the Italian side of the question, agreeing with the former, not only in his reliance upon the classic writers more than upon existing monuments, but in most of those leading points which form the line of separation between the two sects. Still more markedly does he adopt their views with regard to the *Registriarii*, and in rejecting altogether the views of Nardini, whom he terms "*Romæ notas ad confundenda parturbandaque omnia*!" The great advantage of his work over the *Beschreibung* consists in its condensation, and notes which at once furnish the reader with the sources of his own conclusions, and a check upon them.

A review of his work by M. Preller, though written in moderation, produced a furious reply from M. Becker in a pamphlet, entitled "Die Römische Topographie in Rom, eine Warnung," wherein he treats the paper of Preller as a manifesto of the Italian side. M. Ulrichs, in his "Römische Topographie in Leipzig," sifts the arguments of Becker with equal severity, and the controversy is brought to a close by a reply and a rejoinder written with corresponding bitterness.

Thus is the matter left much as it was, except that the arguments upon both sides being now

before the world, the scholar has the advantage of forming his own judgment upon them.

Mr. Dyer is of opinion that many of Becker's views upon important points of Roman topography are entirely erroneous, but acknowledges his obligations to him in the production of his own elaborate article.

Before the German writers had expounded their views, symptoms of an inclination to throw off the yoke of Nardini had previously appeared, and already had Piale restored to the Forum of Augustus and Temple of Mars Ultor their true names, and had the still greater boldness to return to the view of the early topographers concerning the position of the Roman Forum, subsequently established without doubt. But before deposing Nardini, the two pseudo-registriarii, Victor and Rufus, whose catalogues of the buildings of ancient Rome according to the order of the *regiones* of Augustus formed the basis of his work, had to be removed from their pedestals. It was long known that their lists were opposed to known passages in the classic writers, and great obscurity pervaded their names and the period of their lives. Bunsen had concluded they should be discarded as spurious, when Sarti proved to him that the catalogues were palpably not the work of any ancient authors, even of the fourth or fifth centuries, but, in their present state at least, a mere compilation since the revival of letters, and probably not older than the fifteenth century, the foundation of both being a third catalogue appended to the *Notitia Imperii*, and commonly cited under that name; but from its insufficiency little regarded by topographers.

In spite, however, of Sarti's irresistible evidence of the worthlessness of these documents, the Italians show a marked disinclination to discard their long-valued friends, and Canina gave to the world, in 1841, a third edition of his "Indicazione Topografica," in which the catalogues are given in full at the beginning of each region.

Such are the authorities upon which the world now leans its belief,—such the divisions in which these authorities are classed. A new source of inquiry has of late years become fashionable—excavation; and the success that has attended it at Pompeii and Nineveh will doubtless follow it to Rome. "Slowly as these excavations have been conducted," says Mr. Bunbury, "they have already been productive of incalculable benefit; and it is impossible to look at the present state of our knowledge in regard to the Roman forum and surrounding localities as compared with that possessed by the antiquaries of the last century, without feeling that the shovel of the excavator has done more than all the labours of the learned." He then points out the advantage derived from any one point established, and cites the instance of the eight columns still standing on the slope beneath the Capitol, which were always thought to be the remains of the Temple of Concord, until the excavations beneath the Palazzo del Senato brought to light the real temple, as proved by the existing inscription upon it.

From this other inferences were derived. Thus, for instance, knowing that the Temple of Juno Moneta was built immediately above that of Concord, and that the former was situated in the Arx, we obtain a point towards settling the disputed sites of the Arx and the Capitolium. But a discovery of still greater moment was made in 1835, in the steps of the Basilica Julia, which fixed not only the site of that edifice, but also the western limit of the Forum itself.

The topographical history of Rome is divided into three periods, namely, the original city of the Palatine, the city of the seven hills of Servius Tullius, and the imperial city of Aurelian. The points of greatest interest to the general observer are the walls and gates, the Capitol and the Forum. The better understanding that we now have of these two remarkable sites, is one of the greatest triumphs of Roman topography, but much obscurity in the latter still remains to be cleared up, and the former remains an open question, though the arguments upon it seem to us to preponderate so much upon one side as to point to but one conclusion. Nevertheless, the unfortunate ambiguity of the ancient writers in their use of the



terms *Arx* and *Capitolium*, may possibly prevent the question at issue being ever satisfactorily settled.

This question, as our readers know, is simply upon which of the two summits of the Capitoline hill was the *Arx*, and upon which the *Capitolium*. The leaders of the German school, Niebuhr, Bunsen, Becker, and Preller, hold that the Temple of Jupiter Capitolinus was situated on the south-west summit of the hill; the Italians, led by Nardini, maintain the precisely opposite opinion, and to which latter opinion Götting and Braun subscribe. A third class of writers, but numerically few, hold that both the Capitol and the *Arx* occupied the same, that is, the south-west summit; but this opinion we shall not entertain. The north-east summit, slightly the most elevated, is crowned by the church of *Ara Celi*; the south-west is partly occupied by the Palazzo Caffarelli and its gardens, partly by streets; all, however, of a comparatively modern date. To the time of Donato the Italians held the opinion now adopted by Bunsen and Becker; while all the modern Italians have followed Nardini in the contrary opinion. Biondo and Mariano held the German opinion, founding their conclusions apparently upon the name of the church of *Sta. Salvatore in Maximis*, the latter addition indicating the immediate presence of the Temple of Jupiter, Optimus, Maximus. The name of Monte Tarpeo is still preserved, both in the names of existing streets, and of churches founded early in the Middle Ages, as connected with the south-west end of the hill, and as it is well known that the Mons Tarpeius was the Capitol, and the name seems to have been confined to that portion of the hill as distinguished from the *Arx*, one argument towards the location of the Capitol is obtained.

Mr. Bunbury and Mr. Dyer embrace opposite views in this question; therefore, whilst giving a condensation of the whole argument as explained by the former, we would recommend the perusal of arguments of the latter, in order to form a judgment upon the whole.

The account by Dionysius of the landing of Mercurius on that part of the bank of the Tiber nearest the Capitol, whence, entering by the Carmentale gate, he took first the Capitol and then the *Arx*—thus showing that the Forum was nearer the river than the latter—is another argument in the same direction. The bridge thrown by Caligula from the Palatine to the Capitoline, in order to reach the Temple of Jupiter, &c.; the narrative of Tacitus of the attack of the Vitellians on the Capitol; and lastly, and perhaps the most conclusive, the story of Livy, that a mass of rock fell down from the Capitol into the Vicus Jugarius, which ran under the south summit—and thus proving that the Capitol was upon it—form the chief arguments in favour of the German side. To the above a collateral proof in favour of the *Arx* being situated on the other summit is the statement of Ovid, that the Temple of Concord (of which there is no doubt) was at the foot of the steps leading up to that of Juno Moneta, the latter being placed by numerous concurrent testimonies in *Arce*.

The remarks of Mr. Dyer upon all these points, and the arguments on the opposite side, will well repay the perusal, and doubtless give another colouring to the matter. The leading points of the other party are briefly as follows:—1. The position of the *Ara Celi* is more imposing, therefore more adapted for the site of the Temple of Jupiter Capitolinus; 2. The *Arx*, being for defence, would be situated on the most important part for such purpose, and therefore clearly on that point of the hill nearest the river; 3. That the hill of *Ara Celi* answers the description of Dionysius of that of the Capitol, better than the opposite one; 4. That we are expressly told by Dionysius that the Temple of Jupiter fronted the south, whilst we learn from the other accounts that it looked on the Forum; 5. That Vitruvius directs that the temples of Jupiter, Juno, and Minerva, should be placed “in excelissimo loco.”

SURVEYOR TO LANELLY BOARD OF HEALTH.—Mr. Thomas Hand has been appointed surveyor to the Local Board of Health at Lanelly.

#### THE APPREHENDED MURRAIN, AND IMPROVED FARMSTEADS.

CONSIDERABLE alarm is manifested on the subject of the probable appearance amongst our herds of a murrain said to be prevalent abroad, and it is desirable that the right steps to prevent the evil should be taken. We find Government prohibiting the importation of cattle from the Continent for fear of bringing in disease which has never been absent, but which land-draining, improved agriculture, and better cattle-sheds have reduced, and which only prevails now on wet, undrained land, and in filthy overcrowded cattle-sheds and pens.

Dr. Greenhow, in a preliminary communication to the Board of Health on the subject, just now published, says the disease recently prevailing in Holstein and the adjoining countries is the “pulmonary murrain,” and is identical with the “lung disease” that has proved so destructive among the herds and dairies of Great Britain and Ireland during the last fifteen or sixteen years.

“Although possessed of infectious properties in a moderate degree, the ‘lung disease’ is known to arise spontaneously under certain ill-understood conditions of food and season, and is not usually believed to have been imported either from abroad. It is almost universally diffused throughout this country, having from time to time broken out in an epidemic form in particular localities, and again disappeared, without any very obvious cause. Being already quite as prevalent here as on the continent, no danger exists to our cattle from the importation of foreign cattle suffering from the disease.”

All that has been written and paid for by Government on Quarantine is made of no avail. Even the experience of the last war goes for nothing, when every quarantine regulation in every port of the East was set at defiance, and without one single case of injury, but incalculable benefit. Our vessels sailed in and out of Constantinople, Smyrna, and other plague ports, during a cholera period, without either taking or leaving cholera; and now the ports of Great Britain are to be shut in the face of the world against cattle, hides, and hoofs. If this regulation were not something worse, it would be supremely ridiculous. As a nation, we show the world that we have no faith in quarantine where human life is concerned, and then would establish a rigid quarantine for cattle. Thin the overcrowded cattle-sheds of this metropolis and other places, cause these places to be ventilated and cleansed at short intervals, and cattle diseases will be reduced. Next, prevent diseased home-bred and home-fed cattle being slaughtered and sold for human food, and the Custom-house officers may with a good grace prevent diseased cattle from being imported. The mortality in metropolitan milk cow-sheds is frightful; but as one of the owners remarked, “the cows don’t die, we kill them.” That is, all diseased cows are killed, as Paddy would say, “to save their lives.”

A damp subsoil and low temperature aggravate the epidemic diseases to which cattle are liable. Drainage affects both of these, raising the temperature of the air from 6 to 8 per cent. In a report to the Board of Health on the parish of Penrith, Cumberland, made in 1851, the reporter, Mr. R. Rawlinson, points this out strongly, and says truly,—

“It will be a curious and highly interesting problem and one in which the human race is deeply concerned, to trace out the origin and spread of those malignant and fatal diseases which affect plants, animals, and man; and probably act, and react, directly and indirectly, one upon the other. Many such wide-spread diseases are recorded in history. In 1515 and 1578 nearly all the sheep in France perished by a disease resembling the small-pox; and in 1599, the Venetian Government, to stop a fatal disease among the people, prohibited the sale of meat, butter, or cheese, on pain of death. The murrain of cattle has a bulbo-like the plague, and from 1705 to 1711 it spread among cattle, sheep, and horses, all over Europe, 5,857 dying in Middlesex, Essex, and Surrey; and Europe lost one million and a half. It affected men who ate the flesh, according to Sauvages, destroying at Nîmes the tongue in twenty-four hours; and Paris was similarly afflicted in 1576. From 1740 to 1750, the cattle were attacked by disease like the small-pox in all parts of Europe, and it was considered as a cause of spreading that disease among the estates. In 1764, horses, cattle, sheep, dogs, and poultry, died in thousands all over Europe. In Holland alone, 208,354 died. At this time, 1850-1851, cholera is raging to a frightful extent in the West India Islands; and in the Polish Provinces, ‘the pest’ is amongst cattle, and it is said that more than 200,000 head of oxen have been destroyed by it. There is also the recent disease in potatoes, which produced famine and fever in Ireland to no fearful extent, the effects of which have been severely felt over wide areas of England, especially in the towns and villages on the western side of the island, and throughout the manufacturing districts generally.”

Wide-spread disease in cattle, on undrained land, and in crowded, ill-ventilated cattle-sheds, follows a wet season. We have here, therefore, at once, points to which attention should be directed to ward off the dreaded murrain.

LIVERPOOL FREE PUBLIC LIBRARY.—The first stone of the proposed new building was laid by Mr. W. Brown, M.P. the munificent donor, on Tuesday morning last.

#### LONDON STATUES.

MUTILATION OF THE EFFIGY OF QUEEN ANNE, IN ST. PAUL'S CHURCHYARD.

ALL must have heard with regret of the damage done by some mischievous person to the statue of Queen Anne, which stands within the railings at the west end of St. Paul's Cathedral.

In consequence of the occurrence, Dr. Milman, the dean, has ordered the gates which have afforded the public access to this enclosure to be closed.

Although this statue is scarcely worthy of consideration as a work of art, it is, notwithstanding, an historical record of considerable interest, and it is surprising that any one could be found to mutilate such a harmless monument, and in such a position. The Portland Vase, in the British Museum, when it was broken, was kept in an out-of-the-way room to which the visitors did not usually go in sufficient numbers to prevent mischief. It has been shown by many examples that the public is a good guardian of its own art-treasures.

It seems wonderful that the mutilation of Queen Anne's statue could have been effected in such an open place, for it must have required considerable force to do the damage which has been effected. It surely could not have been done in the day-time, and it seems curious how in the night the matter could have escaped the notice of the police. The neighbourhood of the figure is, however, dimly lighted, and this circumstance no doubt tempted some foolish or evil-disposed person to commit one of those now rare outrages which unfortunately afford to authorities who are not anxious to give the masses of the people increased facilities for visiting our galleries and museums a pretext for shutting them out.

The statue in front of St. Paul's was damaged most likely by a single individual, and, in consequence, the gates of the area are closed altogether to the public. We hope that no exertions will be spared to bring the perpetrator of this act to justice.

It is to be hoped too, that the gates will be allowed to remain open during the daylight, for the ways across are very convenient, and in fine weather groups of women and children, from the narrow back streets about, may be seen enjoying this the only accessible open piece of ground in the neighbourhood. East, there is nothing of the kind until we reach Tower-hill; west, the Temple-garden, and this is threatened; in another direction, but at some distance, is Smithfield: all between are close rows of bustling streets, lanes, and narrow courts and alleys.

The suggestion that the damage complained of must have been effected at night, brings to recollection the dim lighting of many of the monuments in our squares: some of them nearly vanish with the light of day, although the stream of passengers moves along for hours without ceasing. With a little tasteful management, and at a very small cost, the street statues might be made visible and interesting objects when the sun has gone: the light would also be a means of protection from damage.

#### NOVA SCOTIA.

SINCE my acquaintance with the *Builder*, I have frequently seen notices of improvement and progress in the arts of architecture and building in Canada, Australia, and other colonies, but have never yet seen these subjects mentioned in connection with the colony of Nova Scotia. As the *Builder* has numerous readers in this province, and great activity and improvement have prevailed here in these departments for the last two or three years, I had hoped that some more practised pen than mine would, ere this, have given you some account of our progress; but as none has hitherto appeared, I will, if you approve of the proposal, send you, on some future occasion, a few brief notices of our chief architectural works now in progress or in contemplation.

I observe in the late English papers that great numbers of building operatives are out of employment, and much distress has been occasioned this last winter thereby; and as we in this country are very much in want of labour, many works almost stopped, or progressing slowly, while many more would be entered into if there was not so much difficulty in procuring skilled labour; my principal object in writing to you at the present time is to call your attention, and that of your workmen readers, to the advantage of this province as a field for emigration.

1. Its proximity to England: we are now not more than twelve or fourteen days from there, and this spring there are two lines of steamers leaving Liverpool (England) regularly for Halifax, one line affording facilities for moving not hitherto given, by fitting stateroom passengers at low rates.

2. The climate, &c. very similar to that of the old country.

3. In the constitution of the Government, and the social habits of the people, an Englishman would find himself at home.



And last, but not least, the certainty at the present time of constant employment, at what may be called high rates of wages, as living is cheap, carpenters, &c. getting 6s. to 7s. 6d. per day of ten hours; masons, bricklayers, &c. 10s. to 12s. 6d.; and other trades in proportion.

I trust that you will give publicity in some shape to the sentiments contained in this hasty note, and that it may result in good to both employers and employed on each side of the Atlantic.

A NOVA SCOTIAN.

#### ELECTRO-TELEGRAPHIC PROGRESS.

A NEW stride in the progress of Electro-Telegraphic communication appears to be about to be made, by the formation of a new company working the patents of Mr. Allan for light-weighted timed-iron-wire lines of telegraph. The *Times* gives a full account of this new system, from which we condense the following particulars.

Mr. Allan has devoted himself to the improvement of the electric telegraph, and has applied practically some of the more important recent discoveries of Professor Faraday and others of our chief electricians. He has invented a cable about one inch in diameter, the centre of which is formed by nineteen wires, of tinned-iron wire, twisted into one strand, an inch in circumference. This is encased in a case of indiarubber, coated over with a mixture of tar and sand. The cost of the whole is only 70¢ per mile, instead of 3000¢ to 5000¢, and its weight only 8 cwt. in place of 6 or 8 tons. The core of this cable is thus made both its strength and its conductor. The conducting power of iron as compared with copper is as 24 to 120, but the increased sectional area afforded by the large iron strand more than compensates for the relative difference. The preposterous weight of previous submarine cables, such as those for the Mediterranean, was the fatal error which interfered with their success; but experience has shown that within certain limits, as to durability, the cable cannot be too light.

It is proposed, by the new company availing itself of these patents, to establish, in the first instance, a system of telegraphic communication throughout the United Kingdom almost as complete and extensive as our present postal arrangements, and at a uniform rate for messages of a penny a word, or a shilling a message, whatever the distance within the limits of the kingdom. The chief manufacturing towns are to form sub-centres with the smaller towns and even villages around them. The wires will be thinly coated in gutta-percha, and laid in numbers branching off to the different towns *en route*. The cost of each of these wire cables will not exceed 10¢ per mile. It is estimated that if twelve of the largest towns in England send on an average fifty messages per day to each other, the gross receipts, without including intervening stations, would be 120,450¢, while 24 towns sending 100 messages per day would yield nearly 500,000¢ per annum. For carrying out this system Mr. Allan has devised an improved recording telegraph.

The ocean lines are at the outset to be confined to laying a cable from the Land's-end to Flores in the Azores, and thence to Halifax, making the deep sea stretch, it is alleged, about 400 miles shorter than the route between Newfoundland and Ireland, and avoiding the land lines, which are expensive to maintain, and increase the cost of messages. Should the American cable do, it is intended then to extend the system to the Channel Islands, Gibraltar, Malta, and even India.

#### FALL OF WALL NEAR COVENT-GARDEN.

At the back of Bow-street, Covent-garden, was a court known as Russell-place, with one opening to it nearly facing the police-court, and another in Russell-street, nearly opposite to the pit entrance to Drury-lane Theatre. The houses in this place were occupied by very abandoned characters; and, other remedies failing, the agents of the Duke of Bedford resolved to pull it down. This had been nearly completed, leaving the back wall, which also served as a back wall for some stables in King's-Head-yard, standing; when, on Good-Friday morning, the wall fell to the ground bodily, spreading flat over the whole site of the court, and buried in the ruins four out of five men engaged, the fifth having left the spot a few seconds. Two, Maurice Fitzgibbon and John Shean, were killed, and the others dangerously injured. The wall was 70 feet long and 25 feet high. The party-walls of the stables in King's-Head-yard were not bonded into, but simply built against, the back wall, so that when the party-walls of the houses in Russell-place were taken away, there was nothing to steady it, although to the casual observer it might have seemed tied to the stables standing.

At the inquest held on the 13th,—

Mr. Charles Parker, the Duke of Bedford's surveyor, gave evidence as to ordering the houses to be pulled

down. I went (he said) to the premises from time to time, and was there as late as Monday last, when I went round the place and found the range of buildings pulling down to the third floor. On the following day I met with an accident myself, an arch on which I was standing having fallen under me, and covered me with the ruins. I examined the wall in question on Monday last, and thought it was sound. I can form no opinion of the cause of the accident. The pulling down the houses of course weakened the wall. It never occurred to me that the wall would fall if the houses were taken down. There were buildings on the other side which I thought would have supported it.

Mr. Edward Hakewill, district surveyor of St. Paul's, Covent-garden, said,—The premises in question were not under my authority. Buildings can be taken down without my sanction. I inspected the premises, but not officially. I inspected them, supposing that new buildings would be erected. The houses in the court were not in a dangerous or dilapidated condition, but were pulled down in order to prevent the place being occupied by improper persons. The wall appeared to me to be perfectly safe. I inspected the walls at all premises on the 27th March last, and looked with the view of seeing whether there was any appearance of danger. I saw one wall which struck me as being dangerous, and I reported it to the police. It was immediately shored up. I have inspected the wall since the accident, and it is very difficult to form an opinion as to the cause of it. The material of the wall was good for the age, but the wall was a very old one. The materials were not sufficient to last to the pulling down the wall. The removal of the party-walls which radiated from it at right angles would deprive it of much of its support. In my opinion, supports should have been put against the wall to make up for the party-wall removed by the demolition of the houses. I think the necessity of such supports would have been palpable to any practical man. The removal of the party-wall was undoubtedly the cause of the fall of the wall, though a well-grounded opinion might have been formed that the wall would have stood, as it was perfectly upright. It has been stated in the newspapers that I pronounced the wall as perfectly safe, but I never gave any such opinion, and none was asked of me.

Mr. William Howse examined—I am a bricklayer and builder. I was employed to take down the houses in Russell-court, to sell the site and erect a new building on the wall. I sent to Mr. Hakewill, the district surveyor, and he came, but not officially, as he said he had nothing to do with the taking down. Mr. Parker gave me my instructions, and the job was not done by contract. We found that the wall was 3 or 4 feet higher than the stables at the other side, and then we found that if we lowered it any further we would lay open the stables. The wall appeared to me to be perfectly upright, and therefore I considered it safe. I thought it was sufficiently upright to stand without any support. I went to the stables behind about twelve months ago, and ascertained that the roof did not rest upon the premises, but was supported three times on the morning of Good Friday, and no one made any complaint to me about the wall. I thought it sufficiently strong to stand without any support, and I had thought otherwise, I would have supplied temporary shoring. We removed 3 feet of the wall, because it lightened it, but we had no misgiving as to its height. It was a 9-inch wall all the way down. It was 70 feet long and 25 feet high. I have had considerable experience in pulling down old buildings. I think it must have been owing to the badness of the lower part of the wall under the mangers in the stables at the other side.

It was ultimately arranged that the inquiry should be adjourned until Friday next, and that in the mean time the surveyor of the Duke of Bedford should take the necessary steps to have the ruins examined.

#### CHURCH-BUILDING NEWS.

**St. Mary's, West Brompton.**—The tower and spire of this church, at Bolton's, in West Brompton, left undone in the first instance, have been completed, under the direction of Mr. Godwin, by Mr. Myers. Mr. Milman was clerk of the works. A view of the building will be found in a former volume. It is a cross church; an octagon lantern, with four windows in it, surmounts the tower, and is itself crowned with a lofty stone spire, the angles of which are ornamented with ball-flowers. On the parapet, at the foot of the spire, are eight kneeling figures of angels, executed with much feeling and skill by Mr. Ruddock. The lantern is open to the church. This was objected to in the first case, in the fear that it would interfere with the transmission of the preacher's voice. Fortunately, however, it does not do so in the slightest degree.

**Norwich.**—The last of the four sides of the tower of Norwich Cathedral is now being restored. The first side was restored about twelve years since, and the repairs have altogether cost about 2,000¢. The expense of the works has been defrayed by the dean and chapter. Mr. J. Brown is the architect employed.

**Yarmouth.**—At a recent meeting of the general committee of the proposed church on the beach for seamen, the several tenders for the work were opened. The proposals were as follow: Mr. Cossey, of London, for bricklayers' and stone-masons' work, 823¢, for stone-masonry alone, 408¢; Messrs. Curtis and Balls, Norwich, for the whole work, 1,437¢; Mr. Key, Yarmouth, ditto, 1,394¢; Mr. Rolfe, Pratt, ditto, 1,271¢; Mr. Wright, ditto, 1,699¢ 16s.; Mr. R. Steward, ditto, 1,246¢; Mr. H. J. Norfar, carpenter alone, 398¢. The tender of Mr. R. Steward, being the lowest for the whole of the work, 1,246¢, was accepted. The work will be commenced almost immediately.

**Brockley.**—An improvement has recently been made in the parish church of Brockley, Somerset. The north transept has been enlarged, for the purpose of receiving the organ, which has now been placed there; the west window and the carved oak screen of the gallery are now exposed to view.

**Pill.**—A church and parsonage are about to be erected at Pill, near the mouth of the river Avon. The late Mr. J. A. Gordon gave a site for the church, and the late Mr. Thomas Kingdon contributed 1,000¢ towards its endowment.

**Peterhead.**—The United Presbyterian congregation at Peterhead have just contracted for the erection of a new place of worship. The contractors are—Messrs. Reid and Cheyne, masons; Messrs. A. and J. Lockie, &c. joiners; Mr. Wm. Stewart, plasterer; Messrs. Kirton and Merson, slaters. The exact amount of the estimates is 1,166¢ 10s. The building is to be commenced immediately.

**Kilburn.**—The foundation-stone of St. Mary's Church, Kilburn, was laid by the Hon. General Upton, on the 31st of May, 1856; and on Tuesday, the 7th of April, the portion of it that has been built was opened for divine service. The nave and aisles have been finished, and the transepts covered with a temporary roofing, leaving for future erection the tower, chancel, and chancel aisles. The style is the Decorated English Gothic, and the church will seat upwards of 800 persons on the ground-floor. The cost of the works at present undertaken amounts to 4,300¢, leaving about 3,600¢ to complete the structure. 60¢ were collected at the offertory, after a sermon by the Rev. T. Ainger, vicar of Hampstead. The architects were Messrs. Francis, the builder, Mr. W. Higgs.

#### PUBLIC EXAMINATIONS IN DRAWING.

DURING the last month public examinations, conducted by the Department of Art, in elementary drawing, practical geometry, perspective, and model drawing, of two grades of proficiency, have taken place in the several district Schools of Art in the metropolis. Not only the students of the schools, but all who presented themselves, were eligible for examination, and to take the rewards. At Rotherhithe district School of Art 41 exercises were worked, and 6 rewards given; at Lambeth 92 exercises, and 24 rewards; at Spitalfields 168 exercises, and 47 rewards; at St. Martin's-in-the-Fields 381 exercises, and 77 rewards; at Kensington 548 exercises, and 184 rewards; at St. Thomas's, Charterhouse, 598 exercises, and 212 rewards; and at Finsbury 686 exercises, and 259 rewards. The proportions of rewards to exercises were as follows:—in freehand drawing, 4; in practical geometry, 24; in perspective, 52; in mechanical drawing, 33; in drawing from solid models, 8; and in drawing from memory, 42. The rewards consisted of drawing-boards and rulers, cases of mathematical instruments, colour-boxes, and similar objects useful in drawing. These were the first public examinations in drawing which have taken place in the metropolis, and which it is intended shall be held annually.

#### SOVEREIGN LIFE OFFICE, ST. JAMES'S STREET, PICCADILLY.

THE building now in the course of completion at the corner of St. James's-street, Piccadilly, for the Sovereign Life Assurance Office, is interesting, as showing the tendency at the present moment to the use of a much larger amount of carving for external decoration than has heretofore been employed. Few houses, indeed, are at this time built in the streets of London without some attempt at decoration. The building in question, of which we now give a view, was built from the designs of Mr. Horace Jones, architect. The works were commenced at the beginning of October last, and will be completed, it is expected, by the end of this month. The fronts of the ground and mezzanine floors, and the cornices and dressings to the upper part, are executed in Caen stone: the facing of the upper part is of Bath stone.

The lower portion of this building is devoted to the uses of the Sovereign Office. The ground-floor contains the public office, secretary's and strong-room, the mezzanine floor the board-room and lobby, directors' waiting-room, &c. and the medical officers' room; the basement contains washing-rooms for clerks, a second strong-room, housekeeper's apartments, and cellars. The three upper floors are three, separate sets of chambers, with three rooms, and requisite convenience to each set.

The contract was a little under 4,500¢; and when completed the total cost, it is stated, will not exceed this contemplated amount.

Messrs. Pritchard and Co. of Warwick-lane, Newgate-street, are the contractors. Mr. Wm. Farmer, of Lambeth, has executed the carving. Mr. Woodfall is the clerk of the works.





THE SOVEREIGN LIFE OFFICE, ST. JAMES'S-STREET, PICCADILLY.—MR. HORACE JONES, ARCHITECT.



## ON HOUSES AS THEY WERE, AS THEY ARE, AND AS THEY OUGHT TO BE.\*

A SOCIETY that for a hundred years has applied itself to the encouragement of the judicious application of capital in arts, manufactures, and commerce, needs no apology for considering a few of the results of the employment of capital on some buildings and in some building operations; that is to say, for considering the durability, convenience, and beauty,—the cost, profit, and value,—which some of our buildings, especially dwellings, at present afford under competition and insufficient education. Any one of these subjects offers materials for an evening's discussion, and, therefore, short explanations and descriptions only can be given: facts and figures must be taken as proved; and there will only be three definitions which must be borne in mind, viz. of the building owner, the architect, and the builder.

A building owner is a private person who invests his money in a building as a speculation, and who generally knows nothing of the construction and cost of the building. A person who invests his money in a matter of which he knows nothing, without any guarantee as to the stability of the undertaking, and no information as to the character of the man with whom he is to entrust that money, is one of the most lamentably ill-educated people that the inquiries of this Society can discover; yet such is the case with a large proportion of those who either rent, buy, or pay for building any edifice of any sort.

An architect is a person whose business it is to know in his mind the building thoroughly which he has to design before it exists; to proportion the number and sizes of the rooms and their parts to their uses; to arrange them in a convenient manner; to give beauty to those parts and their details; and to place these graceful portions in good relative positions as to the inside and outside of the building; to foresee all the essentials required by custom, health, law, locality, materials, site, &c. especially by the intention and prescribed expense of the building; to choose amongst the various methods of sound construction; and to be so reputable that his decision in dispute as to the meaning of contracts and the quality of the materials and labour employed in that construction shall be binding upon the building owner and the builder.

A builder is a person whose business it is to provide, in the cheapest market, good labour and good materials, and to supply them and their results to the building owner at a reasonable profit, according to the directions in the drawings and specifications by which the architect expresses his decisions; and this, and only this, is the legitimate province of the builder; who is, or professes to be, bricklayer, mason, carpenter, smith, plumber, joiner, plasterer, painter, &c. all in one. Our epoch of the *division of labour* has seen all the trades connected, however remotely, with building combined in single hands, to the loss of all concerned, except the capitalist: the good work of the present day is the bad work of fifty years ago.

The merchant knows what to expect, who orders an agent to make up an examined cargo of goods suitable to a particular market, which goods are to be furnished by a warehouse that does not keep many of them in stock, and has to manufacture, or get manufactured all the rest to order. This is the relation of the building owner, the architect, and the builder.

The merchant does not know what to expect, who orders that a cargo of goods suitable for a particular market should be shipped without examination from such and such a warehouse; the goods may be very good, but prohibited in the port they are sent to, or they may be legal, and of such a quality as not to pay for freight. This is the relation of the building owner and the builder, without the intervention of the architect.

The preparation of this paper has been caused by the fact that in my professional education and practice, during both which you have several times honoured me by your favourable attention, it has been my habit to examine, value, and repair buildings at their birth, prime, and decay: thus I have seen that old houses survive generations of new ones; that new houses are generally ugly; and when pretty are frequently not worth in the market what they cost.

The *Times* has called upon its readers to compare old London-bridge, faulty enough in design, but living for 600 years with Westminster-bridge, 1750, and Blackfriars-bridge, 1760, both now supported on crutches. The first of them is waiting to be swept away as a nuisance some day; the other may remain an invalid until the crutches rot and the fabric falls under the weight of a man, a horse, and an empty cart. This weight is fixed as the fatal one, because it has once been enough to break down a railway bridge. There was no dead-end, I believe, on the human body, but the cost of the

other animal and the cart must have been paid by somebody.

The same comparison may be made with regard to houses. A work by the late Mr. Hudson Turner, which is still new, and called "Some Account of Domestic Architecture," is filled with descriptions of houses built at the same time as Old London Bridge, or earlier, and of houses built from that time to the year 1500, which are still standing. We need not recapitulate his list, but, acknowledging the beauty of nearly all his examples, we will take up the subject at the beginning of the sixteenth century, when brick was a fashionable material.

We shall find that a large number of the timber and of the brick houses that were built between 1500 and 1649, still remain, and command what may be termed a fancy price. There is actually no saying when they will perish; some in ruins like Tattershall are as good as many a new house of the present day. If we visit London just on the skirts of the Great Fire, we see houses that need not be pulled down, which is more than can be said of the London that has been built since 1800. To say nothing of almshouses dating between 1550-1650, we shall find that houses built before 1800 in the Strand, Little Moorfields, Cross-street (Islington), Holywell-street, Gray's-inn-lane, Bishopsgate-street, were, till lately, or are now, existing. These are certainly not in very good condition, but we shall find houses 1620-30 in Lincoln's-inn-fields and Great Queen-street, 1637 in Chandos-street, Covent Garden, 1640-62 in Clare-market; 1657 in Middle Temple-lane, and 1660 in Hatton-garden.

Keeping generally westward with fashion we find, 1678, King's Bench-walk, Essex-court, and Farrar's-buildings in the Temple, Arundel-street, Exeter-street, and Sackville-street; 1680, the Old Jewry, King-street, St. James's, Crown-street, Wardour-street, and Soho-square; Paper-buildings in the Temple, which Bagford says were so called from the slightness of their construction, 1685, were not rebuilt till 1848. So that actually houses built in what were then considered a slight manner, have lasted 160 years; indeed, it was lately stated at an inquest that a house was only 200 years old, and therefore could not have been supposed to be in danger; in fact, ought not to have fallen. This is a remarkable proof of the extreme difference between the old and the new houses; if we reflect that a glance through the journals of the last fifteen years will show the fall of about as many houses before they were finished, as of the old houses. Yet Nave, in 1708, says, "the greatest objection against London houses (being for the most part brick) is their slightness, occasioned by the fines (or ground-rents) exacted by the landlords, so that few houses, at the common rate of building, last longer than the ground lease, i.e. about fifty or sixty years; and this way of building is very beneficial to trades relating to it, for they never want work in so great a city, where houses are always repairing or building." And probably much of his observations applied only to houses on the outskirts of the then city, for we find that about that time good houses were built, as 1700, Red Lion-square, Bolton-street, Devonshire-street, Queen-square, and Great Smith-street; 1707-8, King-street, Golden-square, Queen-square, Westminster, and Great Ormond-street; 1716, New Bond-street, Conduit-street, and Hanover-square; 1718, Rathbone-place; 1720, Bedford-row; before 1725, King-street, Covent-garden; 1727, May Fair; 1730, Oxford-market, Half Moon-street, and South Audley-street; and 1737, Crown Office-row, in the Temple.

The age of these houses is clearly marked by the fact, that after 1708 the window-sashes in London and Westminster were placed in reveals by order of a Building Act; fifty years afterwards a new Building Act was necessary from the great increase of buildings, and the order for reveals extended to some outlying parishes; in 1766, Parliament again met the great increase of buildings by a new Act; and in 1774 came the stringent Act called the Black Act.

About 1765, Berners-street and Grosvenor-place; 1770, Great Russell-street and Salisbury-street; 1775, Mansfield-street and Stratford-place; 1778, Portman-square, Portland-place, and the Adelphi were built. Many of these streets, built 1760-1780, under vigorous legislation, and leaves for ninety years, have houses that although old-fashioned, are handsome, convenient, and far too good to be pulled down. The very foundations of this society's house are shown to foreigners, though perhaps few of my audience know that such a sight exists; except to those engaged in building, it is an unpleasant and useless visit.

But with the year 1790 we have Lisle-street; 1795, the New-road; 1800, Alfred-place, Gower-street, and Baker-street; 1805, Great Surrey-street, Wale-street, and Russell-square; 1810, Bryanstone-square; 1815, Park-crescent, 1820, Regent's-park, Burton-crescent, and Regent-street; or their neighbourhoods. Regent-street rubbish was a term well understood by the

workmen employed on it, and Regent-street rubbish, for a great wonder, it remains. I counted upwards of thirty cracks in one wall of a house there. But bad as that is, it is not nearly so bad as much that has been since built,—it stands.

The public would seem to have a belief that a low rent and a good house, in a good situation, are likely to be put before it under the present system of competition. When the landlord was the builder, and covered four or five acres with houses, it was his interest to build all equally well—he could get his rent; but when he let that ground to four or more builders, they cut down the cost of construction, in order to compete with each other for profit out of the rents, which their own competition made lower than their landlord would have asked, and this system of competition is part of the secret of our present bad houses. The other part of the secret is the folly of a person in renting or buying anything in the shape of a house, without knowing, or endeavouring to know, anything about it; yet the public will not hire or buy a piano in the same way.

The usual way of starting a street is to let the land to that anomalous being, a speculative builder. He need not be a builder, or a tradesman in any branch of building; indeed, the persons whom I have known succeed best, were a sailor, who had succeeded to some property, and built two houses for £7,000, which he sold immediately, in the most careless, open-handed way, for as much cash; a chandler's shop-keeper, who built a row of forty houses for £300 each, and sold nearly all of them, but none for less than £600; and a footman, who built a street in such a style that at last the tradesmen actually refused to work any longer for him, but who he complicitly said, in the court of law to which he summoned them, tenants would occupy anything he put up.

Between 1760 and 1810 many streets were built on a system which no longer prevails; it was called blood for blood; because if a plumber took a piece of ground, he arranged with a bricklayer, carpenter, joiner, and painter to put their work over the ground, each taking one or more houses finished with his plumbing in payment. Of course his lead was thin; the brickwork was poor; the rafters and joists were weak; and the glass and painting discreditable.

From 1800 to 1825 there was a different system: builders who gave themselves up to the business of building streets on speculation, borrowed of their friends and tradesmen, and paid their debts according to the sale of their houses; this system dropped when the lenders found unfinished houses left on their hands. Since 1815 the timber merchants, &c. have lent money to the speculative builders, and of course the quality of the materials they supplied could not be disputed; but these persons, especially the timber merchants, have apparently had reason to suspect collusion between speculative builders and ground landlords, and are now more wary. Indeed, the real speculator is often the landlord who lets ground and advances money, in the hope that the speculative builders would put a good deal more money of their own or other people's in the shape of encumbrances on his ground, and by failing would allow him as mortgagee to foreclose and get, at a cheap rate, carcasses to be finished scampishly and sold cheaply.

We see houses built before 1700, at an apparently reasonable price, actually still too good to be pulled down when 170 years old, and most of them are considered good for another forty years at least; we see many houses only intended to last for 100 years, new fronted, and these also are considered good for at least another forty years; and we see many houses that were built before 1800, that are now being tinkered in order to last that time. But we also see whole quarters of London consisting of houses built since 1790, which the tenants quit from absolute fear; rows exist where the representatives of the builders would be too happy to get rid of their prospective burdens, and sell their interest or rather burdens in their leases for a mere song.

Why our dwelling-houses in London are built after one plan, viz. an entrance passage, a front room, a smaller back room, and a staircase by its side, is a mystery to many besides myself. The plan is no doubt a very good and healthy one, where it provides a thorough draft every time the back or front door is opened, but it has a great tendency to make the chimney smoke, and to keep the house very cool in winter. Why, also, the kitchens should be placed in the basement is not clear; the open doors in summer carry all sorts of scents up the stairs. Indeed, in this respect the very small houses, like those in Camden town, which have no basements, but have kitchens in the yard, might be usefully followed in larger houses, and the servants' rooms might be above each other at the back of the house, and all the way up. Some good third-rate houses have the staircase in front, and gain a handsome back room, at little expense to that in front, but this plan is rarely followed. It is also curious that speculative builders

\* Read by Mr. John W. Papworth, architect, at the Society of Arts, Wednesday, April 15th, Mr. E. Chadwick in the chair.



never will put a ventilator to the top of the staircase, and so the whole heated and damaged atmosphere of the house is poured into the top rooms, which also happen to be the apartments for the invalid and the nursery.

There is hardly a house fit for an invalid in London, yet almost every second house in a street contains, on an average, one invalid in a year, and all the year round. Perhaps this is one reason why so many invalids live abroad, where all their home is on one floor, and where there is only one staircase, and that a very easy one to descend, in order to get into the garden or the street. Back houses, too, are quite gone out of fashion, as if our families had nothing to do but to sit at the front windows to see the passing vehicles. I was much struck, in several of the Belgian and French towns, with the system—of which traces may still be seen in the city, viz.—of having a carriage entrance, in which a porter lives that stops all newcomers to know their business. He and his wife act as servants, on occasion, to the inmates of the front and back houses. Through the carriage entrance I passed into a pretty, though small, garden (I should say that no carriage except for an invalid entered), which separated the front and back dwellings. In compliance with continental customs most of these were large enough to have a family or two on each floor, but I visited where only one family occupied the pretty little house. There the porter is answerable for your house; you put the key on your hook in his lodge, and the whole family can leave for the best part of a summer's day, week, or month, with safety. The convenience of this system to men living in chambers in London is so obvious, that it is surprising that families have not adopted it. The cost of one servant is at least saved, and nearly one half of another is quite saved. The dust and noise of the streets does not affect the back house, and by letting the front one for business, the rental of the ground is much increased. There ought to be a stop put to the barbarous system of using basement floors as sleeping rooms, and for ovens. There is no occasion for the great part of our bread to be prepared in underground holes, where the baker's men can see nothing except by candlelight, and which are subject to all the dirt and effluvia—but I need say no more on that point. In the best houses in certain parts of London, the female servants are made to sleep in the basement. It was my business to survey a house near Russell-square the other day, and I found under the entrance passage, with a window looking (it would not open) into the enclosed shed under the steps, and a chimney-place blocked up, a closet in which two servants were said to sleep. The fetid odour was such as the mistress of the house apparently thought accidental, and she was good enough to explain to me that it arose, she thought, from the fact that her neighbour's cistern always kept overflowing and made one side of this little bed-room rather damp, so damp, indeed, that the plastering could not be said to stand upon the wall. To find sink-stones with the holes coked up is nothing new at home. Perhaps one of the greatest improvements in London houses of all sizes, would be to have the drains laid so near the surface, and so covered by boards in their line, that they could be examined or cleaned without trouble; at present there is nothing which embarrasses us so much on surveying a house. If the floors are taken up and the drains are clear, there is great wrath at the trouble and expense; if reliance is placed on the assertion that the drains are clean, it by no means follows that they are either clear or sound, and many a drain has been allowed to leak its contents away into the kitchen floor and the foundations, from which cause alone there are many damp walls in London.

I shall say nothing about a backwardness in adopting patent sash-fastenings, calculated to render the labour of cleaning the windows less dangerous; or sensible designs for stove-grates; or speaking-tubes; or ventilating-glass in the windows; or self-fitting clock-handles; or small rooms fitted up for a bath or bathy, where children might upset the bath without injury to the house, as is frequently provided abroad, especially in the north of Europe; or the possibility of making a house so nearly fireproof, even if it be an old one, that lives should not be lost in case of fire; nor of better shutters than the ugly contrivances now in use; nor of lifts; nor of several other things equally useful and valuable: yet these are all matters which are neglected in our houses, of the common as well as of our better sort; and I am inclined to think that it is because an architect is not employed. Perhaps we might go further, and say that if an architect is said to be of no use except to increase the cost of a house by the amount of his commission, at all events an amateur, or a speculative builder, would certainly be sure to do better. You know that the new streets of London are filled with houses that have little or no real convenience in them, and that the speculative builder does not seem to care a jot for the sanitary and social improvements of the day; but you probably

do not know the sort of faults committed by those men who, loftily saying, "we can do without an architect," think themselves clever enough to direct their tradesmen. Houses without staircases, as in Harcourt-street, Dublin; without a front door, as at a house in Liverpool; without a door to the drawing-room, on which occasion my father was called in by a client who became my godfather; without light to the stairs, which is common; or virtually cut in half, as by a military engineer; are absurdities seldom believed, but oftener perpetrated.

As to competition, the matter is still worse. The public decides that it wants a cottage, a shop, a house, a school, a parsonage, or other buildings, of which it fixes the price. On what grounds it fixes the price nobody can say; yet the public, knowing nothing of the price of a building, appoints a committee to spend this sum in a satisfactory building: whether the committee, or a private person, wants the house, &c. the following steps are the same. A child who has to choose between a large plain cake and a small pretty cake, would ask if they were equally good; but the public expects to have its cake the biggest and prettiest at the same time, without security as to whether it is good at all. So it advertises a competition.

Where a lawyer, a medical man, or a broker, is wanted, the public can be tolerably safe in seeing if the name is on the rolls or lists of the respective bodies corporate; but when the public requires the services of an architect, it accepts as one any person who chooses to take the title. Of course, in these days of competition and free trade, an architect on the rolls has no right to complain, either that he is not employed, or that a person not on the rolls is employed; but the vexatious part of the business is, that if the public employs what the profession calls a quack, and is deceived, robbed, and ridiculed, it unjustly says, "What is the use of an architect?"

Knowing the desire of the public to have its cake large and pretty, men calling themselves architects engage in competitions, and send the biggest and prettiest designs that occur. He who sends the biggest and prettiest is generally successful. Does the public believe that the apprentices and clerks of architects are capable of answering the purpose? if so, it is as much in the wrong as if it asked a chemist's apprentice to take of a limb or tie an artery. Yet one-half of the competitors are pupils, clerks, or young men without experience; now, the public has no right to depreciate a whole procession because the apprentices are incapable. A large number of the competitors are civil engineers and builders, men estimable, no doubt, in their own lines, but no more fitted for such competitions than they would think an architect fitted to direct the water-supply of a town, or to take a contract for the bricklayer's work of a public building. Does the public believe that the biggest and prettiest cake offered to its acceptance at the price named, is likely to be good in its constitution? A single judge might be so uneducated, but half a dozen or a dozen can hardly be so far wrong. This is the dilemma, either ignorance or injustice chooses a cake made so pretty and so big that it cannot be good.

To avoid this dilemma for public buildings, the employment of an architect as judge is the only course to adopt, and has been adopted in some cases; but the judge may well say that his is a thankless office, when as has been the case, he has conscientiously to report that not one of the designs sent in by the men who call themselves architects, can be done for the money; or give the accommodation required. Then the committee generally throws aside the award, and makes a choice of its own.

It may be said that this is all very true of a committee, but that an individual is always equally unfortunate. This, however, can be justly and emphatically denied. If a private person employs no architect, his building may be whatever it will; if he employs the first parking-cake maker, gardener, painter, undertaker, auctioneer, who calls himself an architect, let his building take the consequences. Ellesmere-house, Holford-house, of the present day; Burlington-house, Marlborough-house, of the past, are equally fine buildings, built by selected architects. The club-houses are generally built by competition, but amongst selected men only, as was the Royal Exchange; and at Liverpool the most sensible of the speculators offered handsome prizes to competitive designs for his new street houses. I shall say no more of architectural competition than that the principal leading architects do not enter unlimited competitions, unless justified by the importance of the occasion. Thus, in the approaching competition for the Government offices, the public will not have the advantage of the skill of half a dozen of our best men; and thus, also, but a few established names of repute are attached to the forty-six sets of drawings now exhibiting at King's College for the Constantinople Church.\*

\* To be continued.

#### PROPOSED ILLUSTRATIONS OF WREN'S FIRST DESIGN FOR ST. PAUL'S.

I rejoice in learning from Mr. Rogers, that the drawings for the work I suggested are already prepared; and it is, therefore, the more to be expected, that the profession will bestir itself in bringing about the desired issue. All-sufficient as the present cathedral is for the justification of Wren's high fame, it is yet, without a knowledge of circumstances, an imperfect witness; being, after all, no more than a compromise between his genius and the compulsory meddling of those who enforced him to preserve the old cathedral plan, in the hopes of restored Catholicism.

It may be observed, that the hypercritical objections taken to the building as erected, will not be found applicable to his "favourite model," which, for originality of conception, no less than for artistic judgment, is, perhaps, without an equal in modern design.

The proposed work, in these days of lithography, need not be very expensive. A clever artist would be required for the anticipated effect of the views; but the elevations and sections might be in outline; and there would be no occasion for minute detail. If Mr. Rogers could but obtain the estimated cost of such a publication, the *Builder* would soon show, by the response to an appeal for subscribers, whether the publication might be safely ventured on; and, hoping the "great ones" of the profession will lead the thousand little ones to follow in their wake towards a consummation so devoutly to be wished, I wait to forward my real name, as one of the least lovers, though not the least loving of the great and good Sir Christopher.

EX-ARCHITECT.

#### PUBLIC OFFICES COMPETITION.

If there was ever a competition in which justice should prevail over all other considerations it is the present. Marvellous reports are abroad as to the money expended by competitors, but what is that compared with the thought—the labour of minds that have worked on the architectural problems of the year?

Sir B. Hall has no simple duty before him, and one of no slight importance: for the result, architects will watch with fear and hope. Observe on what a thread that result hangs: as it is not possible to estimate exactly any man's favour or prejudice against a particular style, so will it be difficult, or not possible to nominate judges who shall be absolutely impartial and disinterested in their verdict: a slight excess of the Gothic element among them, and a majority of the designs selected as the best are Gothic, and the same with regard to the Classic.

Names of men known and honoured appeared as judges in the late Constantinople Church competition, but bearing in mind the "instructions," can it be said that the result has been wholly satisfactory? The selection of the judges is a case of extreme difficulty: is there not yet time, and is it not an occasion worthy to have the suggestions and opinions, on the point, of those whose interests are deeply involved—the profession?

Despite the opinion of those who insist that perspective drawings are absolutely indispensable for the proper understanding of an architectural design, it seems to be little more, little less, than a money question. There are artists who can make a plain stone wall look like anything but a plain stone wall; and the competitor, be he professional or amateur (in the present case there are more than one of the latter), who can secure the said artist to tint his drawings, does so because he knows he then has a better chance of gaining a prize than he who could not afford an unlimited sum to purchase an effect, and to have the plain stone wall look like anything but a plain stone wall.

Besides, who is to say how far a perspective is "cooked"—to look as it should, not as it will? Such things are done. And there are few even professional architects who can wholly resist the favourable impression produced by views tinted as we have lately seen them; for example, the Liverpool Library and Constantinople Church.

Why allow him who merely spends more money in the cause this fatal advantage over those who have worked day and night, night and day, with love, not willing to buy the honour and fame they seek?

What honourable objection can there be to withdrawing the perspectives until after the award, which then with justice on the part of the judges must be fair, and whom such a course would most effectually preserve from committing even unconsciously a great wrong. Keep back the views for the present. Attach the names of the competitors, and let that be done be open to the world. Does not the motto principle itself assume the influence of name, an influence that it has no power to render nugatory, for who cannot at a glance discover the designs of "Eminent Architects," to say nothing of private views and dinners before



the designs were sent in? Away with the motto motto!

On dit, that all designs prepared in defiance of the instructions will be at once repacked and returned to their owners—would it not be well to have them exhibited, of course, as evidence from the competition? If all that is told is to be believed, and the Chief Commissioner does not utterly ignore the instructions and plan of the site issued by himself, many of the designs received will go to the "excluded from the competition" screen. The site is somewhat irregular, but presented little difficulty to those who at once made it rectangular, not forgetting to take their dimensions on the longer sides. Some have projected the official residence into the park far beyond the line; others, competing for one office only, leave no space on which the other could by any possibility be erected. It will be too late to point out these things after the decision.

When the day comes where will these designs be? Where should they be but on the "excluded from the competition" screens?

But is the *on dit* a pleasant dream—a myth? for it is also said, that all the drawings sent will be received, and, that deviations from the instructions will not exclude from the competition. If so, alas! for outline and

LIGHT BROWN INDIAN INK.

#### IMPROVEMENT OF PAINT IN THE METROPOLIS.

The other day the City authorities discovered a pipe from the gas-works near Vauxhall-bridge discharging their foul refuse into the middle of the Thames—thus giving forth, in that neighbourhood, a volume of sulphuretted hydrogen, enough to account for the blackness of all the painted fronts from Vauxhall-bridge towards Belgarah which has this winter shown itself so filthy.

The use of sulphuric acid, both in the reduction of the blue into white lead, and the universal use of it in clearing lined oil, will account for the readiness with which this destructive element combines with the paint. May I, therefore, beg the favour of your urging the manufacturer to use a purer acetic acid, and which may now be had free from either sulphuric or nitric acid, as also to use Mr. Binks's process to purify the oil. This plan was fully described last autumn at the Society of Arts; because lead properly prepared, and mixed with pure linseed oil, will resist even this scourge.

DAVID G. LAING.

#### THE MIDDLE TEMPLE FOUNTAIN.

WHETHER the new library in the Middle Temple should be built on the site of the fountain or not, may be fitly discussed in the *Builder*: it is however a subject for the exercise of a mature, refined, and unprejudiced judgment, and should not be approached with a temper in which personal detraction and vituperation are prominent, and art is made the vehicle for disparagement and abuse. Not one of your readers, the architect, engineer, operative, or artist, will read without pain the unqualified terms of disrespect used by Mr. Paterson against a body of men, eminent for respectability and learning, who are now engaged in the noble work of promoting and enshrining knowledge; and that gentleman who has made so unfavourable a *début* in a journal devoted to the promotion of art and science, should be cautioned that he outrages among a class who will not receive invective in the garb of art, and who eschew at once the bitter garnish of calumny, however adroitly it may be contrived and concealed in the mess which he proffers to them.

PATER ABRAHAM.

#### STREET RAILWAYS.

Mr. T. W. RAMMELL, C.E. in a pamphlet just published by Stanford, of Charing-cross, suggests "A new plan for Street Railways."

He proposes that the railways shall run through the streets on a level with the first floors of the houses, and simply consist of girder-rails and an atmospheric tube between them, the three constituents of the line being firmly framed together and supported at a height of 14 feet (or more if the gradients require it) above the street surface by a single row of cast-iron columns, placed generally along the line of the kerb-stone of the foot-pavements, the columns to be secured to cylinders of cast iron sunk deep into the ground and solidly imbedded in concrete. The gauge he would have to be only of a standard width of 3 feet 9, and the carriages (for passengers only) of the lightest possible description, much nearer to the level of the rails than at present, and constructed with special reference to the avoidance of noise: each carriage to hold from 30 to 60 persons. The lines would be accessible at frequent stations either built expressly or formed out of houses already existing, with staircases leading to waiting-rooms on the first floor, level with and open to the platform.

The advantages of his scheme Mr. Rammell thus sums up: it is simple and compact, yet strong; will occupy little lateral space and not interrupt the street traffic nor the communication between street and pavement, the intercommunications being wide and each column of small diameter; neither light nor air would be obstructed: the appearance would not be inelegant; the whole might be so readily erected or taken down as to be practically moveable, and hence easily alterable according to circumstances, neither erection nor alteration interfering with the street traffic; lastly, its cost would not be excessive.

The projector also proposes certain modifications or adaptations of the atmospheric principle of propulsion, to insure certainty and economy of working, into which we have not room to enter.

#### THE DWELLINGS OF THE LONDON POOR.

SIR,—The recent report made by Dr. Letheby to the City Commissioners of Sewers, was much called for, and will do good. It presents a frightful picture, and will, doubtless, startle many who have not already given attention to the subject. It has been referred to very extensively by the daily press, at which, of course, as one wishing the evils set forth should be remedied, I rejoice greatly; nevertheless, it does so extravagantly, and in most directions many of the press have taken up this report as if neither you nor any other person had written on the subject before. They speak as if these filthy and frightful facts were now made known for the first time: they ignore the circumstance that four or five years ago you dragged into the light of day the very places, Plumtree-court, Rose-alley, &c. &c. which Dr. Letheby now very properly again brings forward, and described minutely the miserable condition of their occupants, and the unavoidable consequences of forcing men and women to live in such dens. Now that public attention is again awakened to the magnitude of the evil, and the vital necessity for change, it is to be hoped that something will be done. Do not relax in your endeavours.

AN ENGINEER.

#### INSTITUTION OF CIVIL ENGINEERS.

On the 7th inst. Mr. G. P. Bidder, Vice-President, in the chair, the paper read was "On the Laying of the Permanent Way of the Bordeaux and Bayonne Railway," by Mr. F. R. Conder. A detailed description was given of the construction of the permanent way, as well as of the series of operations that was necessary for its completion. It appeared that although called "Voie Brunel," the principle adopted was in no way identical with that of the Great Western and other London-gauge English railways; the only resemblance being the use of a bridge rail, and the longitudinal position of the short pieces of timber that supported the rails, which were little more than half the dimensions of those used on English railways.

On the Great Western lines the stability of the way was effected by the housing of the transoms into the longitudinal, and by tie bolts which were passed through the latter, and were firmly secured to the former; and the continuity of the longitudinal timbers was secured by a sort of dovetail called a "joint-plate," which had been found in practice to unite the ends of the timbers with a degree of solidity that could hardly have been expected, but which was an essential condition in the system. On this Bordeaux and Bayonne line, unfortunately, all these precautions, which a long experience in England had proved to be necessary, were omitted. The short longitudinal timbers were merely laid end to end on the transoms, the rails were laid on and rivetted to the joint-plates, and the only tie between the outer and the inner rail was effected by the bolts, which passed vertically through the rail, the longitudinal timber, and the transom.

#### ST. MARTIN'S DISTRICT SCHOOL OF ART.

A SOIRÉE, arranged entirely among the students of this school, was held on the 3rd instant, the Rev. W. G. Humphrey, of St. Martin's, in the chair. A collection of paintings, drawings, &c. contributed by Messrs. Ruskin, Burchett, Collier, Casey, and by some of the students themselves, covered the walls. The meeting was addressed by Mr. C. G. Shank, who deeply regretted that he had not had such opportunities of early art study as could be now obtained. Mr. Ruskin next delivered a lengthened address, in which he mainly dwelt upon that power of eye and mind which the practice of drawing gave; and then on the chemistry of painting; in the course of his remarks on which he touched on doctrines, rather more poetical than orthodox, in which phosphorus, sulphur, and carbon, and even the gas we burn, were regarded as metals, which some of them, after all, may eventually turn out to be. In respect to the air, however, of which

he also spoke, his doctrine was both poetical and true. The air he regarded as the soul of everything, which required to be "burnt" into them; the metals or other combustibles could in general be made of much use in art. Man himself lived more on this soul of the earth than on its body. The air of which he spoke, of course, was oxygen—the vital air and the supporter of all "burning." It was by this air, he observed, that many art materials, such as colours, were prepared from the metals and other combustible bodies. Perhaps Mr. Ruskin himself may not be aware that some of the ancient chymists were not only well acquainted with oxygen (notwithstanding assertions to the contrary), but called it the soul of the world, and hydrogen the spirit. The meeting was subsequently addressed by Mr. Burchett, the head-master of the Normal School. The soirée was enlivened by music as well as eloquence, and passed off with spirit and élan.

#### SOUND THROUGH WALLS AND FLOORS.\*

Will you kindly allow me space for one or two observations on that part of the leading article in your last number which has reference to the transmission of sound through floors.

Floors formed with iron joists and concrete, like those formed with brick arches, transmit sound by contact, under certain circumstances; but the circumstances under which they do so form quite the exception to the general application of this principle of construction in dwelling-houses: when a finished surface of cement, or other solid material, is laid down upon the concrete, and the structure cooled underneath, so that the whole forms a solid, homogeneous mass, sound is undoubtedly freely transmitted; but, instead of this being the general custom, in forty-five cases out of every fifty, the floors of rooms constructed on this principle are finished with a boarded surface, leaving a hollow space between the flooring-board and the top of the concrete; and, besides this, in the majority of cases of superior rooms, a second hollow space is obtained by attaching a counter ceiling below, for which the structure affords ready facilities; the further advantage of this latter mode of construction being that there is no contact between the iron and the plaster, and consequently no risk of the ceiling being discoloured.

The floors of the new house at Balmoral are formed in this manner, and for all practical purposes the construction is sound-proof. It is, in fact, like a brick wall battened on both sides.

As illustrative of the difficulty of preventing the transmission of sound through a solid body, however thick, I may mention the fact that in some of the old prisons in France, where the walls were nearly 15 feet thick, the prisoners found means of communicating with one another through them.

JAMES BARRETT.

#### SCENERY, MUSIC, &c.

*Italian Opera-house, Legnano.*—Short as the time has been since the Lyceum was closed on its dramatic manager, Mr. Gye has contrived to re-decorate the whole of the interior in a quiet, tasteful manner, and to introduce various improvements before the curtain, tending to the comfort of the audience—a point very much neglected, by the way, in most of our theatres. *I Puritani* was the opera with which the season was commenced; and never did Grisi sing and act, even in her palmiest days, with more admirable effect. Mr. Beverley has painted a scene of beehives and flowers, for a new divertissement, *Les Abeilles*, which is pretty and quaint.

*Haymarket Theatre.*—The only extravaganza brought by Easter will be found at this house, under the care of Mr. Buckstone. It is written by Mr. Talford—called "Atlanta"; or, The Three Golden Apples, and gives occasion, as all our readers will see at once, for some Greekish scenery, in the preparation of which "The Winter's Tale" at the Princess's has not been overlooked. In the Royal Drawing-room, for the sake of lightness, probably, the type is departed from, and slight coupled Alabaster columns, with an Order of Caryatides above, are substituted. In the last scene, Doric temples, in fairy colours, wonderful palm-trees, and living statues, form what Mr. Talford might perhaps have the boldness to call a palm-and-stoutian coalition, while they delight the house, and do honour to Mr. Calkett.

—There is some truthful scenery in Mr. Bayle Bernard's exciting drama, "A Life's Trial," which precedes the extravaganza, such as the "Beach at Tenby," the "George Inn Yard, Southwark," and a view in the Borough. A villa on Richmond-hill, with the Thames below, is charmingly toned, but is marred by the erroneous perspective in the picturesque

\* Three several correspondents inform us that they have succeeded in producing a material whereby all sound will be deadened. When we know something more about the inventions we may speak of them.



part of the building—the porch, the lines of which contradict all the rest of the structure. We mention this the more particularly, as it is a mistake often made on the stage. The piece itself is very interesting, and is contradicting the critics of the first night, who pronounced it a failure.

**Barford's Panorama.**—Assisted by Mr. Selous, Mr. Barford has painted a very excellent picture of Moscow, with its Kremlin, 500 churches, gardens, and rivers. The foreground towards the north is occupied by the procession accompanying the Emperor into the fortress-palace. On the plateau formed by the highest ground, are seen the three Cathedrals of the Assumption, the Annunciation, and St. Michael, two of the vast imperial palaces, and the singular tower of St. John, with the far-famed great bell of Moscow at its base; also the treasury, arsenal, two large monasteries, and several of the other churches of the Kremlin; together with a long line of the walls, two of the principal gates, and many of the towers and spires by which they are adorned. It is admirably painted, and gives a striking notion of the amount of wealth which has been lavished by a despotic sovereign, on this, the heart of all Russia. Many of the buildings are characterised by vast size, a profusion of domes, and a barbaric profusion of ornament.

### Miscellaneous.

**MR. THACKERAY AND SCOTTISH ART.**—At the dinner given to this gentleman in Edinburgh the other day, Mr. Thackeray proposed "The Fine Arts and the Royal Scottish Academy." In the course of his speech he said, "I assure you that I have been a constant visitor at the building with the Doric pillars not far off, for I have spent no less than 1s. 6d. for various catalogues, and I have come away with the strong idea that the battle between the lion and unicorn is not altogether decided, and that I do not know what colours ought to have precedence on the pallet, and whether it should be those of England or of Scotland. I am perfectly certain of this, however, that the President of our Academy could not paint, and would own himself that he could not paint, so good a portrait as the President of yours. I am perfectly certain that there is a certain Francis Grant in London who could paint a picture as well as any Scotchman out of London, or any man in almost any other country. I know that one of our chief painters one of our naturalistic school—comes to draw his inspiration from Scotland, and that he finds his most noble rocks, his most beautiful lakes, his most splendid deer, and his most wonderful heather here. I know that a week ago I shook hands with a young painter, a leader of the Young England school in Perth, and that he last year found his autumn leaves, and his beautiful grass, and his glorious sunset, worthy of Giorgione himself, by the banks of the Tay. I know the young Queen of the French naturalistic school came into your country, and has fallen in love with it, and has taken away from it a little ark of her own, carrying with her many of your animals. I cannot say what particular power it may be in your country which creates this immense attachment, but I begin, I assure you, to feel it myself. What vitality is it in the air which causes all you Scotchmen to have such an intense nationality? Not that your artists cannot go to other places than to Scotland. Yesterday, in the course of one of those visits of which I spoke to the Royal Academy's Exhibition, I was taken by Lander into the sacred garden of Olivet. I wandered also with Harvey back into old times, and saw dear old John Bunyan standing at the gate of Bedford Gao. I passed a little door, and there I was away from John Bunyan, but Harvey was carrying me out still, and I stood on the deck of Columbus's caravel, and we looked out and saw land across the Atlantic. Then I went with Noel Paton, who led me on to the moorland regions of fairland, and looked at the beautiful crowds of creatures that danced, and frisked, and gambolled around Oberon and the beautiful Titania. Then he brought me away from that fairy place into a place still more pleasant—from fairy land into love land—and I beheld a young couple sitting in uncommonly close conversation under the gleams of Hesperus, that bright star, who I am sure would wink at what that couple were going to do next."

**ARCHITECTURAL INSTITUTE OF SCOTLAND.**—At the last meeting of the Architectural Institute of Scotland, held in their hall in George-street, Edinburgh, Mr. Smith, architect, in the chair, Mr. D. Cousin read the second part of a paper on "Jeffrey's Theory of the Beautiful." Beauty he considered under three heads—moral, intellectual, and material. Moral beauty consisted in truth and goodness, and our sense of it arose from the relations springing out of those elements. Intellectual and material beauty arose from the elements of adaptation and order, including proportion, number, symmetry, &c. and our sense of it from the relation of these qualities.

### SANITARY CONDITION OF ST. LUKE'S, CHELSEA.

—A "general report upon the sanitary condition of the parish of St. Luke, Chelsea, during the year 1856, by A. W. Barclay, M.D. Medical Officer of Health for Chelsea," has been printed by order of the Vestry. The results are, on the whole, favourable, notwithstanding the bad state in which some of the more crowded districts of this suburban parish still subsist. The rate of mortality for all Chelsea appears to be that of all London nearly as under 23 is to over 24. Nearly 4,000 houses were inspected, 3,600 by regular visitation by the inspector of nuisances: 1,191 sanitary improvements have been reported on as finished, and others as in progress. The small streets and courts bordering on Leader-street, and extending down to Bond-street and College-place, west of the Marlborough-road, have an unenviable pre-eminence in the midst of many bad districts, and give the largest ratio of mortality from epidemic causes. The worst places in this district itself, are Little College-street, Oakham-street, and Wickham-place. In the last, each house consists of four small rooms, with an average of eleven inhabitants each, or more than three families. In Little College-street, one house of twelve rooms, contains forty inhabitants. A new landlord, however, has done much for this street. Overcrowding seems to be one of the greatest evils in Chelsea, this part of the metropolis containing an immense number of small houses subdivided amongst poor people.

**GNOLL COLLEGE, VALE OF NEATH.**—A scheme for the establishment of a scientific college for 200 students, from sixteen to eighteen years of age, at Gnoll Castle, in South Wales, is in progress. The course of instruction is to extend over three years, and to include mathematics, mechanics, physics, chemistry, natural and human history, and design; the final courses comprising trigonometrical surveying, mechanical art, steam-power, and projectiles, traction, &c.; sanitary science, mining and metallic manufactures, commerce, letters, &c.; and construction and decoration. Every student is to pass through the introductory courses, while the intermediate and final courses will be selected for the students according to their special pursuits. The fees for each student, board and residence inclusive, will be two hundred guineas a year. The situation for such a college is advantageous, both from its seclusion and its healthfulness, as well as from its locality, surrounded by various industrial works, particularly in metals and minerals, quarries, limestones, &c., and connected, at the same time, with the manufacturing districts, and with the metropolis, by railway, a station of the South Wales line adjoining the park of Gnoll Castle. Much, however, will depend on the way in which the scheme is carried out, as respects professors, and so forth. From the prospectus it does not appear that the teachers have yet been selected or appointed; nor are the president, wardens, and secretary, who are to control the establishment, named in it. From what we know, however, of those who are concerned in the proposition, we augur well.

**COMPLETION OF COVENTRY SEWFRAGE: TREAT TO WORKMEN.**—Nearly 100 workmen of Messrs. Tomlinson, Harpur, and Harpur (Derby), with some friends, members of the Town Council, and officers of the Local Board of Health, lately celebrated the completion of the contract for the sewerage of Coventry at a dinner in St. Mary's Hall, Coventry. Mr. S. Harpur presided. During the execution of the contract, the contractors have laid in branch drains for about 1,000 houses at the private expense of nearly 400 owners. These, together with the contract, embrace a total length of 26,000 yards, or about 15 miles, of sewers and drains, consisting of pipes of 3, 4, 6, and 9 inches in diameter, and brick sewers varying from 12 inches in diameter to 3 feet 6 inches high and 2 feet 6 inches wide, and are placed in the ground at depths varying between 3 and 21 feet. In the line of the sewers nearly 200 chambers have been built to facilitate inspection, flushing, and cleansing when necessary, and numerous street gullies have also been constructed. The cost of the works was determined by a schedule of prices ranging from 4s. to 25s. per yard.

**THE IRON TRADE.**—At the quarterly meetings at Walsall, Wolverhampton, Birmingham, and Dudley, the quotations of last quarter have been upheld, and the accounts were much more promptly met than was expected, from the great difficulty of obtaining advances except at ruinous rates of interest. It was stated that some makers had reduced bars 10s. per ton, but the prices of last quarter were confirmed. The demand for pig-iron is said to be considerable, prices averaging from 47. to 47. 10s.; for superior qualities, 57. Notwithstanding the great number of furnaces and other works in operation, many more are springing up, the most important of which are those now in course of erection by Lord Ward in the neighbourhood of Dudley. These are capable of employing an immense number of hands.

**THE RIVER THAMES.**—A blue-book has appeared, containing the copy of a report made to the First Commissioner of Works by Commander Burstal, R.N. on the state of the river Thames between Putney and Rotherhithe, dated the 27th January, 1857. The Commander gives a scientific detail of the changes which have taken place, including the great alteration in the low-water surface of the Thames above London-bridge, doubtless consequent on the removal of the old bridge in 1832. From this report it appears that the bed of the river has deepened considerably since 1823, the average deepening at each station between Putney and London-bridge varying from 2 feet to 9 feet 6 inches. The greatest change noticeable in the river bed among the bridges is at Blackfriars and Westminster, and a strong disposition to the same is evidenced at Southwark. From two cross sections made on the site of the old London-bridge, it appears that the whole of its piers and foundations have been removed to a level of 29½ feet below Trinity datum, in a line with the centre arch, which corresponds with the depths of the present bridge, and as far as All-hallows'-wharf above it, and 2 feet higher than the general depths in the Pool, 600 feet below it. From these facts, and from the solid nature of the material of which the old foundations are composed, it appears evident that the natural scour of the river has been arrested at and near this point, and, consequently, the safety of the present structure preserved. Yet the ebb stream is so strong in the Pool as to cause a small and sufficient scour. The bulk of the volume is filled with a series of transverse sections.

**SEWERAGE OF PARIS.**—The Prefect of the Seine has just presented a report to the municipal council of Paris on the subject of a large tunnel sewer, to be formed in such a manner as to carry off the water which in rainy seasons inundates some quarters of Paris, particularly the Faubourg Montmartre, Rue de Provence, Chaussée d'Antin, and neighbourhood. The document states that the surveys made establish that the very slight fall of the river at Paris, where in fact the bed of the Seine is nearly on a level, renders it impossible to prevent the waters, when high, from flowing up into the sewers. The prefect conceived the idea of turning to account the bend in the river, which, about Asnières, approached near enough to Paris to serve as an outlet for the sewers of the quarters on the right bank about two metres lower than the grand sewer which runs into the Seine at Choillot. The report then goes on to describe how this new sewer is to be formed. The expense is estimated at 3,480,000*fr.* Within Paris it would form a tunnel, and beyond the fortifications a covered cutting. The sewer is to be 6 metres wide, and high enough for boats to pass. One of the causeways at the side will have rails laid down for waggons, by which hereafter a general system of carrying off the soil from the water-closets in Paris may be established. Three years will be required for the execution of the work, and the prefect concludes his report by proposing a credit of 1,200,000*fr.* for the first year's operations.

**SALOPIAN SOCIETY FOR IMPROVING CONDITION OF INDUSTRIAL CLASSES.**—The principal objects which the promoters of this society intend to accomplish are habits of cleanliness, by the erection of public baths and washhouses on improved plans, and the construction of model cottages for families. It is intended to establish branch societies in Staffordshire and the adjoining counties, and prospectuses have been issued by the directors. The liability of the shareholders is limited by royal charter.

**THE GIBSON CARVINGS ON THE ALTAR-SCREEN OF ST. JAMES'S CHURCH, PICCADILLY.**—Learning that Mr. Lock, of Leamington, had written to you, stating himself to have been the executant of the restoration of these beautiful carvings—a work that had been wrongly attributed, in the paper on St. James's Church supplied by me and printed in your number of the 14th of February, to two foreigners, I repaired to the gentleman on whose information I had recorded the incident. This gentleman was at the period referred to connected with the management of the church; and he states, that during the progress of the general works of repair then going on in the church (under the direction of Mr. Mayhew), he, day after day, saw the men engaged on the carvings, and he "took them, from their appearance, to be foreigners." However, having casually heard that on some part of the screen there was an inscription—invisible to general observation—recording the circumstance, I, with the assistance of one of the beadles, made a search, and, at length, discovered it, written on the inside of the pelican's nest, and it runs thus:—"This carving was restored with 850 pieces, by G. Lock and G. Kent, 1846." It will be as well to notice this fact, when you can spare a corner so to do, and thus give Mr. Lock the credit due to him, of having executed, in the instance referred to, a very meritorious work.—FREDERICK CRANE, Churchwarden of the Parish of St. James, Westminster.







# The Builder.

VOL. XV.—No. 742.

**F**TTER we had laid bare, systematically and constantly, for a year or more, the frightful condition of various parts of this proud, populous, wealthy, overgrown London, the home of nearly three millions of people, the resort of the intellect of the world,—after we had shown during many months the depths of the shadows lying here, there, and everywhere at the back of the bright thoroughfares where fashion disports itself, the festers and malignant sores with which the body of society is spotted, though they are carefully hidden away,—we were told that enough had been said, that it was unnecessary to make the evil further known, and that improvement would surely follow. Improvement is not so easily obtained, good reader, when the evil is of monster size: it takes a long time to make the public appreciate it, and they must be told a thing many times before they will even hear, still oftener before they will move. Something has been done, and results are not wanting. For example, the Registrar-General's return of the deaths and births in London, during the year 1856, shows that in 1847 the births in the metropolis were 8,331, the deaths 60,442—leaving a balance of only 7,889 to be added to the population. But in the year which has closed the births have been 86,833, the deaths only 56,786—leaving a balance of 30,047 to be added to the population! The life of man has already been lengthened.

Nevertheless, the causes of premature and unnecessary deaths are still at work,—the hotbeds growing a criminal population are still allowed to remain. The City officer of health, who lately re-describes the unhealthy dens crowded with degraded life, pointed out by us years ago, told all London is perfectly astonished, its daily sense in particular, that such a state of things could possibly exist. Eloquent leaders are written on all sides, some speeches, perhaps, made, and then all the facts are utterly forgotten, and the evil goes quietly on, doing its deadly work, and will be re-discovered by and by, again to be consigned to a convenient oblivion. Something has been done, it is true, but to so small an extent, that the body of the evil remains untouched: in parts, indeed, it is increased—the overcrowding is greater than ever. New streets are made without the slightest provision for the poor people who are turned out; and they are forced, as we have again and again shown, to quarter themselves where there is no room for healthful existence. The question where they go to never troubles the improver. In the words of Mr. Planché's far-seeing extravaganzas, "The Birds of Aristophanes," the king of the birds says to one of the characters, who has induced him to build a city in the air for the birds,—

**King.** Where's Jackanoxides? I come to tell,  
The city's built—  
**Jack.** 'Tis well!  
**King.** I would 'twere well—  
**Jack.** Is't not well built?  
**King.** Yes.  
**Jack.** Well, then, what's the matter?  
**King.** The rooks are making a confounded clatter;  
They want a rookery—  
**Jack.** In my new town!  
By Jove, if they build one, I'll pull it down.  
**King.** They can't afford to live in Peacock-square;  
Where can they go to?  
**Jack.** Go to?—any where!"

And so our new street-makers, when they are asked where the displaced occupants of the

garrets and cellars are to go, shout, without thought,—

"Go to?—any where!"

Let them be wise in time, or it may lead to mischief greater than is dreamt of. Some time ago we ventured to assert that Paris was in greater danger of a revolution, through the destruction of the dwellings of the poor without the provision of other places of reception, than it had been for some time; and, quite recently, the Comte de Tournonnet, in the "*Revue Contemporaine*," echoes the alarm, and warns proprietors to hear the voice of reason in time, and lower their present demands; since, however strong a Government may be, it might yet be taken by surprise in the case of a sudden and universal outburst, and might be unable, at least for a time, to avert the vengeance of an infuriated multitude, of which the landlords would be the first victims.

The Metropolitan Board of Works are about to form some new streets, in the construction of which thousands of poor people will be turned out of their lodgings, and will be forced, unless proper provision be made, to flood the neighbouring localities. We would exhort the authorities to give this point consideration.

There is a great want of dwellings so arranged that the families of the better description of mechanics in the metropolis may live in becoming privacy, and be accommodated with proper conveniences and means for cooking, at a rental of from 5s. 6d. to 7s. per week. This amount several thousands of persons willingly pay for very inconvenient apartments. Should not capitalists endeavour to meet the requirement? or, recollecting the passing of the Act of Parliament limiting liability, could not the London artisans do something for themselves? Large sums have been collected amongst them for the purchase of freeholds in out-of-the-way places. Would it not be possible for them to organise societies for the erection of houses which might be well drained and ventilated, and divided into flats? What can be done by means of association amongst the wealthy, is shown by the palace club-houses, where, for a payment which would seem inadequate for the enjoyment of so much luxury and comfort, the members who choose to avail themselves of it, have a splendid home. The problem how capitalists are to provide the required accommodation with a pecuniary return is not solved yet; but we must not touch that point just now.

Our immediate purpose is to add one more special instance, to the host already given in our pages, of neighbourhoods that need reform. We refer to a large tract of land known as Nova Scotia-gardens, situated near Shoreditch Church.

In passing along Old-street-road from the City-road in search of this place, the subject of our engravings, the architectural features of the neighbourhood will be noted as peculiar. Many of the houses have been, originally small buildings by the road side, and the various alterations which have been made from time to time, to transform them into more fashionable taste, are curious. These attempts, however, have not been altogether successful; and the street, and indeed the whole of this neighbourhood, presents a more picturesque appearance than usual. The shops are for the most part small, and many of them are occupied by dealers in old and new furniture and shop fixtures, including a collection of Highlanders for snuff-shop doors, Chinamen, and other devices, amongst them the effigy of a game cock, which cannot be less than 12 feet high. The number of barbers' poles in the Old-street-road suggests the largeness of the population, which renders necessary so many shops of the description implied; and from the numerous flights of pigeons which are to be seen in all

directions, and the appearance of certain parties who throng out of some of the narrow passages, one gets an impression that many of the inhabitants of these back slums could scarcely be placed amongst the useful and industrious classes of the metropolis.

Here are several almshouses, which were erected originally amid the green fields. On one is the inscription:—

"Erected A.D. 1624, by the Worshipful Company of Weavers, London, for the Widows of Twelve Poor Freemen."

Rebuilt A.D. 1824, at the sole charge of Charles James Coverly, Esq., a benevolent Member of the Court of Assistants."

The motto below the coat-of-arms is "*Weave truth with trust*." There are also Potter's almshouses for eight aged women, and Judge Fuller's almshouses, dated 1591, and rebuilt by voluntary subscription in 1771. When the London almshouses need rebuilding, it will be better to dispose of the sites, and purchase a situation away from the town, and more in accordance with the original intentions of the benevolent founders. In some instances so great has been the increase in the value of the land that pecuniary benefits might be gained by such exchanges.

A curious book might be written upon the bookshops of London, and the indications which their contents give of the nature of the surrounding population. In this district the serial publications are not of the highest order, and little dream-books, the art of fortune-telling, and Raphael's Almanac seem to be in request. We pass on, however, to Shoreditch Church, a short distance along the Kingsland-road, to Union-street, on the right hand side. This leads to Crab-tree-row and Nova Scotia-gardens, which, notwithstanding its fine name, presents the appearance shown in the engraving, and points to a condition of things not to be thought of without astonishment and fear.

An artistic traveller this way, looking at the huge mountain of refuse which has here been collected, may fancy that Arthur's Seat at Edinburgh, or some other monster picturesque crag, has suddenly come into view, and the dense smell which hangs over the "gardens" will aid in bringing "auld reekie" strongly to the memory.

At the time of our visit, the summit of the mount was thronged with various figures, which were seen in strong relief against the sky; and boys and girls were amusing themselves by running down and toiling up the least precipitous side of it. Near the base a number of women were arranged in a row, sifting and sorting the various materials placed before them, and many passing by would hope that, by means of a force of so much strength, this great accumulation would be speedily got into a marketable condition, and be removed from the closely packed and very poor population surrounding it. While, however, thinking of these things, and looking with pity at the pale-faced children who were amusing themselves on some of the smaller dunghills, and wondering how this accumulation could have been allowed by those who had charge of the public health of the district, we saw five carts loaded with the same material of which the mountain is composed go towards the sorters engaged upon the gigantic nuisance, and return empty. This is doing and undoing with a vengeance,—

"As Sisyphus against the infernal steep  
Heaves the huge rock, whose motions ne'er may  
sleep."

It appears that the magistrates, in consequence of remonstrances from those concerned, have ordered the removal of this dust-heap; but, kindly considering the interests of the owners, allowed a fair time to get rid of the accumulation. Whether this kindly feeling has been treated in the right spirit, we can scarcely say. It must be borne in mind that, in consulting the





*Nova Scotia Gardens, and what grows there.*



profits of individuals in such a case, we may be causing sickness and death to many who reside in the neighbourhood. The district surgeon, who chanced to come in the way of one of our assistants, said that in the summer he is constantly called to attend cases of typhus fever on all sides of this refuse. To add to the mischief, there is nothing but surface drainage and cess-pools. A woman, who lives in one of the little white cottages shown in the upper view, said that the smell, which was certainly bad enough at the time, was as nothing then in comparison with what it was in the summer-time, when stale fish, and all other kinds of refuse, were left to putrify. The white cottages are built back to back; one side of the row has no water-supply, and they are obliged to throw all the waste water in front of the houses, as the small drain is constantly choked, and the closets are often overflowing.

On one side of the "Gardens" are streets thronged with people and children; and the row of houses in our sketch is worthy of notice: one of them is perhaps the smallest in London. A tall man's head reaches to the top of the arch of the door. The little shed adjoining does not

belong to the habitation, but is used for the lodging of a donkey or pigs.

The new church and schools contrast curiously with what surrounds them, and serve as an indication of coming improvement.

A benevolent individual is disposed to use the site to better purpose, and to aid in the moral and physical elevation of the neighbourhood. Whether or not he will be enabled to carry out his views, however, remains to be seen. Certain it is, that the first step towards effectually raising the condition of the very poor is to give them wholesome dwellings. Until they are taken out of the dirt that brings death, there is no chance of diffusing that intelligence—

"Which binds us to the skies,—  
A bridge of rainbows thrown across  
The gulf of tears and sighs."

ABRIDGMENTS OF PATENT SPECIFICATIONS.—The publication of a series of Abridgments of the Specifications of Patents, in classes according to subject, has been commenced in the Patent Office. Each class, in a small volume, brings the patents down to 1855. The classes already published are "Drain Tiles and Pipes," "Sewing and Embroidering," and "Manure." The next issued is to be "Iron Manufacture."

## ARCHITECTURE OF GREAT BRITAIN.

WHATEVER may be the condition of Architecture in Great Britain at present, as signifying what is worthily monumental of our nation and the time, there is unquestionably a vast amount of architectural display; but the latter may differ as much from the truthful result of sound principles, operating on past experience and existing necessity, as the general forms of our present costume from the varied fashions adopted at a fancy-ball; and, indeed, during the last twenty years, the genius of edificial design seems to have stood aloof, as if waiting for capricious experiment to resolve itself into some fixed and definite issue, either as to the most fitting style for common adoption, or as to certain differing modes most suiting particular but differing cases. Although no one especial manner may have catholic application to every class of building, we might reasonably expect, from our now acquired knowledge of ancient, mediæval, and more modern art (aided by the adaptive invention which has been at work during the period to which we have alluded), such universally admitted deductions as would confirm our architects in the selection of a style exclusively the most suited to each occasion.

They still, however, continue in servile obedience to the mere whims of their employers, or in blind cultivation of their own prejudices; mistaking, for matured judgment, the impressions first made, when it was their interest to please in any way, and to get "the job" on any terms; and thus some of them have become mere bigotted adherents to a peculiar phase of their art, incapable for ever after of its full consideration. This has more particularly shown itself in the Gothic monomania, doubtless to the advantage of that variety of design, in respect at least to the knowledge of its detail and the precedential characteristics of its successive periods.

But even the Church has not wholly resumed its Anglo-Gothic form; for, though the pure Greek or Roman styles, and their modifications under Palladio and Wren, are almost entirely abandoned in ecclesiastical design, we observe that our old church models are frequently put aside for the mere transitional varieties of Byzantium and Lombardy, or other fanciful continental revivals. As to our other recent buildings, public and private, they simply prove the national feeling to be that of Shakspeare's *Jaques*, who, enamoured of the "mangled forms," in which *Touchstone* vents his wit, attaches his sympathies to the jester's party-coloured dress, and exclaims, "Motley's the only wear." While all men of the same country, rank, or position, conform to a uniformity of *habits* in every sense, the houses in which they live, the churches in which they pray, and the halls of assenblage in which they meet, are as varied in fashion ("ay, 'fashion,' ye may call it"), as if our particular land were peopled with occupants, not only of all nations, but of all times; as if the men of this day were no more than supplementary to our undying earliest ancestors and their intermediate successors, British and foreign.

Until the beginning of the present century, our architecture,—ecclesiastical, civil, and domestic,—was a plain record of distinct feelings, progressing in marked gradational sequence; and the history of British taste is successively written in chapters, respectively headed, the Norman, the Early Pointed, the Later Pointed, the Flamboyant, Perpendicular and Tudor Gothics, the Elizabethan, Jacobian, Palladian, Greek, and revived Anglo-Classic. But how will posterity rate the architectural denotements of 1830 to 1860? If a conspicuous tablet-stone remain not over every porch-door to signify the date of erection, verily the antiquarians of succeeding ages will be as mystified as an Abenakee Indian in rambling uninformed through the miscellaneous courts of the Sydenham Palace! Architecture has been, heretofore, the history of the great religions, superstitions, or imperial achievements of the world. The genius and power of Egypt, Assyria, Greece and Rome, of the Chinese, Hindus, and Mexicans, of the earlier and Mediæval Christians and Mahomedans, as well as of the more modern revivalists, have been emphatically exemplified with separately distinct



precision; but, in its present progress, architecture is little more than a "sign of the times" which the times alone can comprehend, indicating a conflict of tastes devoid of vital principles; unless, indeed, it be said to exhibit the necessary confusion of that transitional condition which (agreeably to the temporal nature and "eternal fitness of things") is to precede the final accomplishment of a universal harmony.

Be this as it may, it will be conceded that before any mode of design can be established, definitely expressing the genius and judgment of our age, and forming a precedent for the respect and cultivation of posterity, our architects must agree among themselves to make the general public agree with them. The present anarchy of feeling has occasioned a confusion of tongues, as hostile to the formation of a National Architecture as that which arrested the building of the Tower of Babel, and left it an unmeaning conglomerate of brick. Before we can have English art, art must speak English; however the language may be replete with derivatives from the Greek, the Latin, or other tongues, grafted into the Saxon and Mediæval British stock. Let our architecture be, indeed, what our language is,—a compound of many others; but let the former, with the latter, speak the peculiar truths of our common faith, our feelings, our manners, and climate. Our religious, moral, and social impressions are not less nationally marked than the atmospheric laws which affect them; but it is certain they have at present no architectural expression, save such as denotes them to be inexpressible. That the speaking power of architecture can be but vague, and that its meanings must be to a considerable extent conventional, are admitted facts; but these only emphasize the necessity of such concurrent exertion on the part of its artists as may ensure a generally accepted signification in its forms and details. Wherever architecture has become great in any age, this conventional catholicity has been a despotic principle. In submissive obedience to this, rose the world-worshipped wonders of Egypt, the simple majesty of the Greek temple, the complex pile of the Christian Gothic cathedral, and the elaborate splendours of the Mahomedan mosque; and it must be admitted (though we have alluded to much exceptional disturbance) that the tendency of the present time in Great Britain is strongly in favour of the adoption of the Pointed Gothic for our churches and ecclesiastical edifices. But the adoption of an old style, and its adaptation to new forms suiting present purposes, are two considerations which have not yet been regarded with sufficient distinction. We are not only zealous and prodigal in the repair and restoration of our ancient Catholic churches (as in the case of St. Mary Redcliff, at Bristol), but we continue to erect "modern antiques," obstinately unmindful of their unsuitability to the especial requirements of Protestant worship; and remarkable is the amusing inconsistency of many, who, affecting an orthodox adherence to the old model as unimprovable, still complain of the practical obstruction it occasions. They persist in the retention of nave and aisles, while they denounce the pillared arcades, which form them, as intercepting their sight and hearing of the preacher; and often has the architect been driven to something beyond his wit's end by a cool inquiry, on the part of his employers, as to whether he cannot do away with the very, and only means, by which his admired general result is obtained! All this, and much more that might be adduced, is no condemnation of the Pointed Gothic as the style best suited to our churches. We believe, as the result of much consideration, the reasonings of which were detailed by the writer of this article in a paper issued by the "Architectural Publication Society," some years ago, that it is by far the most eligible for this particular purpose; but we are at the same time free to state that these reasonings have not been afforded by the Oxford lecturers, or by those of the profession attached to the high church party. Indeed, the writer could instance a Dissenting church in the neighbourhood of London, as more happily exemplifying the *adaptive* capability of the Gothic model, than any specimen we can now call to mind drawn among the new churches of the Establishment. We recur, then, to our former observa-

tion, that not only is there required a conventional catholicity as to style, but also a due distinction between the adoption of its details and the adaptation of its general forms to that purpose, which we trust is daily strengthening in our land, and the unqualified expression of which must be determined by the will of our people before we can have a national church architecture that may rival the past and inform the future.

In admitting the Gothic style as best adapted to the service of our Church, we would extend that admission to all structures immediately allied to it. Still may our church colleges, the bishop's palace (if the Italian villa of Henry of Exeter, at Bishopstowe, rise not against us), the parsonage-house, the cottages of the clerk and sexton, and the church school,—still may they continue to show their ecclesiastical relationship; and glory in their high-pointed gables, their turrets, pinnacles, buttresses, ornate chimneys, traceried windows, and corbelled oriels. There will be ever enough of them to give full play to the fanciful as well as to the sublimer efforts of the Gothic designer; and these will be the more honoured by a character of art exclusively their own. Black-letter inscription and rubrical adornment will be their privileged pride and emphatic distinction, till common acceptance endorse the conventional law which will preserve them in our hallowed respect for ever.

But, with a conviction, equal in strength to that which would assign to the church and its dependencies the full right of Gothic adaptation, the writer would maintain the triumph which other styles have asserted, on the façades and within the halls and chambers of all our mere secular buildings, public and private. Admired and respected be every veritable old structure of architectural pretension, whether it be a perfect thing of one style, or a mongrel of many; and "ruin seize the ruthless" hand which would unnecessarily pull down even the most monstrous combination erected in the time of Elizabeth! The ugly picturesque thing that stands forth in the High-street of her own especial Exeter ("*semper fidelis*") shall still remain as the time-stained page of a rare historical volume, telling of the mortal conflict of the Tudoric and Italian; when the combatants, like Duncan's horses, "ate up each other," saving only the small residue left by the Kilkenny cats—their tails—or tales,—let the reader take it as he will—for "thereby hangs" one, in either sense. The final remnant of the Italian party had, however, life in it; and, under the nursing care of Inigo Jones, transferring it to Wren and his followers, it became a thing again of eminent beauty and vitality. Respect, then, we say, the transitional links of our art's history; but repeat not their forms, with inconsiderate reverence, in the improving chain of progress; unless, in emulation of *Hamel's* paradoxical hypothesis addressed to *Polonius*, we would make the modern say to the ancient, "For yourself, sir, shall be as old as I am, if, like a crab, you could go backward." We mean to be serious in this fooling; applying to what we conceive to be frivolous the language of frivolity. In soberest truth we would repeat it,—let *veritable* antiques be revered at least, if not admired. Hesitate to restore, but be tenderly conservative. Renewal may be as false as an artificial skin or complexional deception. Let the doctor do his best to perpetuate health and venerable existence, but abjure the principle of making the old look young or the young old. A gifted modern may be born at Exeter or Edinburgh, with natural parts, personal and mental, resembling identical with those of another who appeared 300 or 2,000 years ago at Windsor or at Athens; but he is the heir to experiences and knowledge far more varied, and to feelings and habits widely different; and the same spirit and person will present themselves with an expression and habitment more or less distinct from what they would have been in the days of Elizabeth or Pericles, as the differing circumstances of time and place may occasion. So architecture, in its utilitarian sense as a thing of protective convenience, or in its expressive sense as a fine art, will resemble, or differ, in different countries and periods, as the case may require; the uncompromising canon of its law being, that it shall, in all places, and at all times, tell the *truth*.

The architectural truth of a building consists in the most suitable application of decorative taste to its form, and to the mode of its construction; and we must, in the first instance, suppose the amplest consideration awarded to these, without any regard whatever to the style of ornamentation which may hereafter be employed. Every structure, from the cathedral to the cottage, is a box, with certain divisions for rooms, holes for doors and windows, and other indispensable requirements. The material to be used will greatly affect the construction of the carcass, and a variety of prominent features will be thereby developed, giving character to the edifice, irrespective of what the artist will hereafter afford. In perfecting this mere machine, the substance of resultant grace will be insured, as, in the human frame, the absolute completeness in its arrangement of bones, muscles, and functional parts, constitutes it instantly capable of the superficial adornments that ultimately leave it a thing of unsurpassable beauty. Superinduced, then, as the skin and its complexional charms, the hair and its glossy pendant gracefulness, and the filling-up of the features into expressive indication, should be the facial beauties which overspread a building, and convert an honest piece of utilitarianism into a truthful piece of art. By such a process of ratiocination have we come to the conclusion in favour of the Gothic style for our churches, &c.; and by the same reasoning process have we arrived at the conviction that it is *not* so suitable to other buildings as a modification of the so-called Classic varieties.

The new House of Parliament stands forth incontestably as the most magnificent modern Gothic structure in the world; and it would be absurd to bring into comparison with it any genuine old building of the Tudor period, having secular application. Indeed, even the gorgeous chapel of Henry VII. and those of St. George, Windsor, and King's College, Cambridge, as entire examples, do not display the same amount of pervading completeness without and within. And yet, however architectural criticism may succumb in deference to its general merits as a thing of its kind, the practical utilitarian has grave charges to bring against it, as failing in the most important point of its purpose! The Lords hear but imperfectly; and the Commons have been obliged to curtail the lofty proportion of their chamber by concealing the original costly ceiling behind a lower one of differing form. Thus we have a botch in the very presence-hall of popular representation; while neither House is by any means of the form best adapted for sight and hearing. We at once acquit the architect of all blame in a defect which has been wholly occasioned by the unsuitableness of the true Gothic character to a debating theatre.

The Senate-houses of Paris, Madrid, and the United States are of the semicircular or theatric model, obviously the most accordant with acoustical and optical principles; and we have no doubt, had the advertisement to architects simply required that the designs for the New Westminster Palace should be wholly subject to the best possible form for its two principal chambers for the Lords and Commons,—without any prescribed style of architecture, and without reference to a particular site, seeming to require such prescription,—the distinguished architect who has been (happily for the country) appointed to this great work would have exhibited his bold conceptive genius in the production of a *Greco-Roman* design, as the natural resultant of his fully considering all the purposes required. But the matter began with a blunder, born of the then newly-arisen mania for Gothic revival; and the sage committee of management, in thoughtless idea of a style of art indigenous to the nation and representing its proudest historical period, demanded that the architects should confine themselves to the Gothic or *Elizabethan* mode! This last they may have since learned to regard as the most vicious that ever prevailed, "lumpish, heavy, melancholy," and only interesting as the chrysalis in its transitional nature between two differing developments. We are not aware that any architect attended to this evident mistake. At all events, Sir Charles Barry took upon himself to understand it as meaning the most finished



period of the Earlier Tudor; and, since there was to be a modern edition of this, modified by the inventive taste of the Victorian day, he has secured to us the best example that might be afforded. What faults it has are those which, perhaps, inferior men might now avoid; and, with more assurance, such as he himself would most successfully improve upon; but, taking it as now existing, it may triumphantly challenge all other European structures of its kind, old or modern.

It is, however, amusing to observe how some of the leading intentions, in the selection of the style and site, have been self-stultified. Respect for the old Hall and Abbey demanded the Gothic character to be observed in the new adjoining or proximate buildings; but the result has been mutually deteriorating. The vast size and majestic simplicity of the Hall render it, in comparison with the chambers of the new palace, as a giant among men of ordinary stature; while the magnificent Victoria Tower utterly disconcerts the previous grandeur of the Abbey. This tower was necessary, not to any purpose of absolute utility, but to the artistic correction of the low length and infinite horizontal lines of the main structure. The architect, we presume, felt that one of the greatest characteristics of Gothic design was wanting, viz. that of *vertical*, as well as longitudinal, expression; and upward sprang the great tower, to draw with it the otherwise earth-bound imagination of the spectator. The partial elevation of other portions, with the clock tower, ventilating lantern, and attached buttresses, were insufficient in a building of such vast extent; and the fenestration, with all the rich surface-work between the windows, left the entire face unrelieved by any efficiently perpendicular effect. The plain piers between the windows of the Italian façade, and the emphatic vertical expression afforded by the columns, and intermediate shadows of the Greek portico, were not to be obtained; nor could the grand Gothic portal of Peterborough Cathedral be called in aid, because it is not of the Tudor period. Under such operating causes therefore rose the Victoria Tower, as unequalled in beauty as in bulk; but this does not reconcile us to the loss of the structure we should have had, if Sir Charles Barry had been left to himself in the choice of style and site. The two senate chambers would have been, as we opine, a couple of Greek theatres: the sovereign, the lords, and the commons, would have had each their grand entrance portico. The trigonate character of our constitution would have been symbolised; and the crowning amplitude of a great central dome, over the common hall leading to the monarch's robing-room and to the two debating-rooms, would have represented the "majesty of the people." Perhaps, indeed, a third spacious hall, to which the sovereign, the lords, and commons had equal right, would have been the grand theatre of their combined meeting on the august occasions of opening and proroguing Parliament. We have been speaking, it is true, without Sir Charles Barry's sanction; but we are not without hope that our readers will cry "hear! hear!" to our suggestions.

The course of our argument has now fairly brought us to the consideration of the Classic style as the most applicable to all non-ecclesiastical purposes. The facts of antique or mediæval precedent, and the homage conventionally awarded to it, weigh with us not one jot. The Egyptian and Mahomedan, the Greek and Gothic, the Roman and Byzantine remains have each their full share of our admiration and respect, as such; but they are as mere material in the quarry, or as specimens in the Museum of Design, to be used or not, as they may or may not suit the simple *Box-model* to which allusion has been made. This having been formed, as aforesaid, we find it, in almost every building, except the church, to be a thing of floors above floors, either wholly or in parts, involving a large employment of horizontal carpentry, and, either actually or typically, requiring extensive application of the post and beam construction, in union with the pier and arch. In the windows we often seek a maximum of light with a minimum opening, and with facilities for glazing, which wooden sashes or casements can alone afford. A compact economy of space

is desired, inducing very generally rectilinear and right-angled formations, and not unfrequently the employment of the circle or half-circle on the plan, which may render necessary the cupola or hemispherical concave and the domical roof above. Now, without saying all this may not be met by the ingenuity of the Gothic architect to an extent that may satisfy his employers, we would aver that the united architecture of Greece and Rome, as modified by the Palladian artist, not only suits it better than any other extant style of design, but with an immediate precision that appears to us unimprovable. Our posts, beams, piers, and semi-circular arches might, indeed, be differently ornamented; but we can see no more reason for giving up their decorative presentment in the columns, entablatures, and secondary fashions of the revival Classic, than for seeking new or additional details for modern Gothic design.\*

GEORGE WIGHTWICK.

#### PROPORTION: ITS PRACTICAL APPLICATION TO ARCHITECTURE AND THE FINE ARTS.†

For the creation of architectural forms, and those employed in the fine arts, no correct standard is acknowledged, no compass is used to guide the student in his studies or researches for the active cause of proportion and of beauty. There are numerous methods to enable him to copy existing remains, but none to invent. Not that there is no compass, for at the present day we have not only the knowledge of our ancestors, but many improvements which never occurred to them.

In elementary works upon architecture, the effects or results are always given, and not the creative or developing causes: for instance, we are invariably told that there are three orders of Grecian architecture, and five orders of Roman architecture, and that an order consists of a column and entablature; and that a column consists of a base, shaft, and capital, and an entablature has an architrave, frieze, and cornice. This is very instructive and proper for the description of an order of architecture, but if we desire to design or to create a style of architecture for the present century, we must not limit our exertions to the mere description of the works of former ages. The primary or developing causes ought rather to be sought than the results produced by the architects and artists of former times.

No new style can be created by worshipping or idolizing only the works of antiquity: we must study and understand the laws relating to *form*, as well as those of colour, before any new features can be realised.

In publications connected with science, medicine, natural philosophy, natural history, &c. a regular systematic treatment is adopted, and the first causes and their consequences are usually set forth in a clear and intelligent manner.

It appears to me that there exists in art as in nature (upon which the former is founded) certain simple and universal laws, to which we are indebted for all beautiful objects, and that these laws are in a degree more or less present in the best works of all ages and countries; and that by comprehending these laws, and applying them as dictated by nature in her works, utility and beauty will be the consequence, and a certainty of success will uniformly attend our endeavours.

I will now proceed to consider the several systems which have been urged and used in proportioning architectural and fine art productions: these may be thus divided. 1. Of artificial systems; 2. Of fanciful and popular conjectures without scientific investigation. 3. Of technical descriptions; and, 4. Of natural systems. Commencing with artificial systems, Mr. Gwilt, in his "Encyclopædia of Architecture," offers the following remarks on the mode of measuring the orders of architecture:—"Several methods have been used for forming the scale of equal parts, by which the orders are measured; but they are all founded on the diameter of the column at the bottom of the shaft; for those that use the module, or semi-diameter, as the measuring unit (which all have done in the Doric order), must still recur to the diameter itself. The authors have usually divided it into thirty parts, but all concur in measuring it by an unit founded on the diameter."

This system of dividing the lower diameter of the shaft of a column into minute parts for copying the ancient architectural remains of Greece and Rome, has been adopted by architects from Vitruvius (circa B.C. 25) to the present period. As a method

\* To be continued.

† The following is an abstract of part of a paper by Mr. W. Pettit Griffith, F.R.S., read at the Liverpool Architectural Society on the 15th instant.

for producing ancient architecture, it is entirely useless, for the several parts of Grecian architecture cannot be reduced or sub-divided by this system; neither does it apply to the architecture of Rome; there being but few, if any, buildings to which this method of division can be brought to apply. The architects of antiquity, fortunately for the progress of design, never employed so mechanical a process: if they had, the great variety of examples of the several orders could not have been produced.

I shall concisely show that the classic architects did not have recourse to the monotonous division of modules, minutes, seconds, &c.; and that the said method does not accord with the remains of either Grecian or Roman architecture, and that it is equally useless for the purposes of invention, and, consequently, for the future progress of architecture.

With regard to Grecian architecture, Mr. Wilkins observes, in his "Magna Græciæ," that "among the early Greeks, it does not appear that there existed any rule for determining the height of columns from the diameter." Stuart, in the "Antiquities of Athens," speaks of "the diameter of the column, as that necessary measure by which the modular proportions of buildings are adjusted;" but he not being (strictly speaking) an architect, only alludes to that measure through its being in vogue in his time; he does not measure the Athenian buildings by a scale of parts dependent upon the diameter of the columns, because it would have been impracticable to have done so. Stuart therefore says, "We have contented ourselves with setting down the measures of all these buildings in English feet and inches, and decimal parts of an inch, purposely forbearing to mention modules, as they necessarily imply a system, and perhaps too frequently incline an author to adopt one. Any artist may, however, from our measures, form whatever kind of module or modular division he best fancies."

Taylor and Cressy, in their "Antiquities of Rome," also figured their delineations of buildings in feet, inches, and decimal parts: in the letterpress, however, they have devoted much attention in testing Vitruvius's modular system, with regard to its application to the Roman temples and other architectural remains; and a few extracts will prove that no such division of parts was sanctioned by Roman architects:—

*Temple of Jupiter Stator, at Rome.*—"On comparing the capital," say Taylor and Cressy, "with the precepts of Vitruvius, we find its height exceed the lower diameter. The abacus is nearly one-seventh part of the height, and the second range of leaves does not occupy so much space as he allots. The architrave is less than prescribed by Vitruvius. The upper member appears diminutive, but is a seventh of the whole epistylum, as prescribed by Vitruvius, not including the bead at the foot of it: the other members do not accord with his instructions. The dimensions and arrangement of the cornice do not accord with the rules of Vitruvius."

*Temple of Vesta, at Rome.*—"The columns do not accord in height with the interior diameter of the cell, as prescribed by Vitruvius, but exceed that dimension considerably."

*Pantheon, at Rome.*—"The entablature is nearly a quarter of the height of the column, including its capital and base: the members of the cornice and architrave, and proportion of the frieze, do not accord with Vitruvius." "The mouldings of the bases to the columns and pilasters do not accord with Vitruvius in their mouldings."

The "Antiquities of Rome" would have been more valuable if the delineations had been limited simply to those buildings, and parts of buildings, which Taylor and Cressy saw and actually measured: as it is evident by the foregoing quotations that Vitruvius cannot be relied upon for accuracy, and therefore the "restorations (in the above work) according to the principles laid down by Vitruvius" must be calculated to mislead rather than to instruct the architectural student.

The most eminent modern architects assign proportions to the orders regulated by the modular system which vary considerably: take, for instance, the height of the entablature of the Corinthian order. Palladio gives 3 modules, 23 parts; Scamozzi, 4 modules, 1 part; Serlio, 3 modules, 16 parts; Alberti, 3 modules, 10 parts; and Vignola, 5 modules.

There not being any existing remains of the Tuscan order, no great difference ought to have existed as to the height of its column; but even in this, the above writers vary by 3 modules. One says 13 modules, and another 15 modules. Although Vitruvius prescribes modules, minutes, &c. yet he alludes to a geometric system on more than one occasion; and there is no doubt that he introduced the unscientific and unsuccessful method of dividing architecture into parts, already alluded to. In book x. chap. 16, Vitruvius says, "But that those who are not masters



of geometry and arithmetic may be prepared against delay on the occasions of war, I shall here state the results of my own experience, as well as what I have learnt from masters, and shall explain them by reducing the Greek measures to their correspondent terms in our own." If, therefore, Vitruvius changed the measures in the instance above quoted, for the enlightenment of those who may have been unacquainted with geometry, it is equally as probable that he did so in propounding the proportions of the temples.

That which Vitruvius did for Classic architecture, Batty Langley applied to Gothic; and the attempt was equally fallacious.

Placing no confidence, then, in the module as a measure of proportion, I will proceed to consider the "fanciful and popular conjectures, without scientific investigation," which have been offered on beauty in architecture.

If a reference be made to the writers upon beauty in architecture and the fine arts (among whom may be named, Bacon, A.D. 1605; Stukeley, 1743; Hume, 1752; Kant, 1756; Burke, 1756; Priece, 1758; Warburton, 1760; Alison, 1790; Stewart, 1792; Hall, 1800; Brown, 1809; Dickens, 1801; Knight, 1806, and others, it will be found that the majority of them comprise gentlemen of education, who were capable of producing elegant compositions, but possessed little, if any, practical knowledge of art, being incapable of drawing or producing either a plan, section, or an elevation,—a pencil sketch in perspective being the utmost a select few of this class were enabled to accomplish; and yet these writers undertook to propound beauty in architecture and in the fine arts, and have submitted to the public from time to time their conjectures, based upon fancy, without any scientific investigation. The greatest evil which has arisen from these writers' endeavours is that many intelligent members of the architectural profession have been influenced by them, and to so great an extent that it is with difficulty they can be induced to believe that beauty of proportion is capable of being practically demonstrated. Aristotle asserts that "the greatest species of the beautiful are order, symmetry, and the definite, which the mathematical sciences especially evince." Sir Christopher Wren says, that "the true test is natural or geometrical beauty," and that "architecture is founded upon the skill of the greatest geometicians." Inigo Jones maintains that "architecture depends upon demonstration not fancy;" and yet we meet, in our inquiries into the cause of beauty, with the following perverse information:—"Beauty is no idea belonging to measurement; nor has it anything to do with calculations and geometry."—Burke. Dr. T. D. Whitaker observes that Warton "treated of Norman and Gothic architecture, not indeed with professional exactness, but with that felicity of real genius which illustrates and adorns every subject that it touches." Knight urges that religion and philosophy—being matter of belief, reason, and opinion,—but taste being a matter of feeling, &c.—"an artist must work by a kind of felicity, and not by rule." Other writers maintain that buildings should be designed in a picturesque style; and one of these writers (Knight), thus defines its meaning:—"Picturesque, that is, the beauty of various tints and forms happily blended, without rule or symmetry;" and he then gives the following illustration:—"In the pictures of Claude and Gaspar, we perpetually see a mixture of Grecian and Gothic architecture employed with the happiest effect in the same building."

In a standard and popular Cyclopædia we are instructed that a certain degree of cultivation is necessary to the perception of beauty. This is a partial admission in the right direction, and as regards architecture, especially, there is no doubt of a practical education being essential to a correct appreciation of its beauty.

Among other arguments against the use of geometry in producing beautiful forms, it has been maintained that "it was to be remembered that the danger of a rigid geometrical basis in art was, that its presence issued imperative laws prevented the student from exercising himself in those minute refinements of form which lend their winning charms to the highest order of grace." And another writer enforces that "the sense of harmony and proportion in a building arises dependent upon its harmonising or sympathising with our own system generally, and particularly with the organ by which it was viewed—namely, the eye." And we are told by another that "the attempt to subject to rules the finer feelings of the mind could only end in failure,—as much in architecture as it had in music and in poetry."

It is to be hoped that these sceptics will have recourse to experimental philosophy, which will, I think, convince them that the cause of beauty in architecture is the result of the most simple geometrical principles possible, and that its truth can be ascertained by actual measurement. So far from the

harmony and beauty of Greek and Gothic architecture being of a subtle nature, I have undeniably proved, in my published works, that our finest buildings can be subjected to the rigid tests of fact and experiment.

#### THE NEW READING-ROOM OF THE BRITISH MUSEUM.

THE very fine Reading-room which has been constructed in the quadrangle of the British Museum, under the direction of Mr. Sydney Smirke, A.R.A. by Messrs. Baker and Fielder, is now nearly completed, and will be open to public inspection for a week, commencing on the 5th of May, after which readers will be admitted under the usual regulations. It will be inaugurated, we believe, by Prince Albert and the Trustees, on the 2nd. A plan of the building, and view of the interior as it was designed to be, will be found, with some particulars, in Volume XIII. of the *Builder* (1855), pp. 133-138. The statues at the springing of the dome, and the artistical decorations in the panels, shown in our view, have been omitted. The *Times* of April 21st, in an excellent descriptive article, wherein reference is made to our early account of the intended structure, says,—

"The dome is 140 feet in diameter, its height being 106 feet. In this dimension of diameter it is only inferior to the Pantheon of Rome by 2 feet; St. Peter's being only 139 feet; St. Maria, in Florence, 133 feet; the tomb of Mahomet, Bessapore, 135 feet; St. Paul's, 112 feet; St. Sophia's, Constantinople, 107 feet; and the church at Dusseldorf, 105 feet. In some particulars our new dome is far superior. The new Reading-room contains 1,260,000 cubic feet of space; its 'suburbs,' or surrounding libraries, 750,000 cubic feet. The building is constructed principally of iron, with brick arches between the main ribs, supported by twenty iron piers, having a sectional area of 10 superficial feet to each, including the brick casing, or 200 feet in all. This saving of space by the use of iron is remarkable, the piers of support on which our dome rests only thus occupying 200 feet, whereas the piers of the Pantheon of Rome fill 7,477 feet of area, and those of the Tomb of Mahomet 5,593 feet. Upwards of 2,000 tons of iron have been used in the construction. The weight of the materials used in the dome is about 4,200 tons—viz. upwards of 200 tons on each pier. The first standard was only fixed in January, 1855. The framework and scaffolding upon which the dome rested were removed on the 2nd of the following June. No subsidence or 'set' of material was observable on the wedges being removed. The entire dome was roofed in and copper covering laid in September, 1855. The roof is formed into two separate spherical and concentric chambers, extending over the whole surface, one between the external covering and brick vaulting, the object being the equalization of temperature during extremes of heat and cold out of doors; the other chamber, between the brick vaulting and the internal visible surface, being intended to carry off the vitiated air from the Reading-room. This ventilation is effected through apertures in the soffits of the windows, and partly by others at the top of the dome; the bad air passing through outlets provided around the lantern. In order to obviate the effects of condensation, all the skylights, lanterns, and windows throughout the building are double. The quantity of glass used amounts to about 60,000 superficial feet."

In this new room, probably for some centuries, numbers of studious men and women will have an opportunity of searching amongst the enormous mass of printed matter which is accumulated within the walls of the national museum, and condensing from it what may be useful in various ways.

A great change has been made in the distribution of knowledge amongst the multitude since the time a collection of specimens of natural history and other matters were bequeathed by a private individual under certain conditions, for the use of the nation. Then came various additions, the Grenville and other libraries, manuscripts, and the splendid library collected by George III. called "The King's Library," which were placed in Montague House. Since the time these contributions have been arranged the press not only of this country but also of foreign countries has been most prolific, and wagon-loads of books have month after month been brought to the building in Russell-street, many of them consisting chiefly of chaff and stubble, in which, however, by careful search, a grain or two of corn may be found.

Men who have written a few books are apt to look upon them as of some consequence: a visit, however, to this library, must make writers modest when they see the miles of shelves loaded with literature of various descriptions, and see how few amongst the number of volumes have stood the test of time.

Thousands of persons visit the British Museum, who, while wandering through the great space occupied in the exhibition of objects of natural history and art, are little aware that hidden from the view of the general public there are rooms almost as extensive as those above referred to, which are crowded from floor to ceiling with manuscripts and printed books, and that even this large amount of space has been found insufficient. Mr. Panizzi devised various ingenious plans to increase the available space for books. He had iron staircases and galleries erected, and lines of shelves of various sizes constructed: notwithstanding

all these efforts, it was evident that the library would be long unable to receive the annual supply of books, and ultimately the erection of a circular building in the large quadrangle was, as our readers know, determined on, to serve both for a new reading-room, and also for the reception of many thousand volumes of books.

The old reading-rooms will, for long, be well remembered by many who have for years availed themselves of their useful aid. They had become too small for their purpose, and the ventilation was very imperfect: the lighting of the place was also not good, and it will be a pleasant change to remove to the new and splendid apartment which has been provided.

It is not easy, in words, to convey an idea of the fine effect of the circular building: the vast space cannot fail to create feelings of both pleasure and surprise. Up to the spring of the dome are countless volumes in variously coloured bindings, which are reached by ornamented and gilt galleries. The panels within the dome are coloured a light blue: the remainder is of white and gold; the side-windows and the large top light are filled with thick dull glass. At first sight many will be disappointed at the apparent size, judging from the extent outside. This defect results from the want of a greater diffusion of colour and of smaller ornamentation. The windows, both at top and on the sides, instead of blending into a whole, break the space into patches, which distract the eye. The large blue panels, contrasting strongly with the other parts, also destroy the idea of size. How splendid an apartment this might have been made, if the rich colours of the books had been extended in coloured ornamental forms to the windows and dome. Art should have been called in to decorate. The omission, however, is not the fault of the designer so much as the consideration of £. s. d.; and the length of time which it would have taken to complete the work.

The seats and tables in the new reading-room radiate from the centre round which are the catalogues and the superintendent's department.

The space for each reader is fitted with moveable book-rests, inkstand, and other conveniences: a division in the centre of each table will prevent the mixing of books and papers, which was sometimes complained of in the old place. For those who require more space, there are a number of larger tables without divisions. The floor has been covered with kamplulcon, which deadens the sound of footsteps; and every provision seems to have been made to warm and ventilate the room.

Round the circular reading-room, there is another circle, from which radiate various puzzling galleries, all ready for the reception of books. In order that every portion of space may be made available, the bookshelves are constructed double, with a passage for air between. By this contrivance double the number of books can be placed. The effect of the various branches, with railway accommodation for the conveyance of books, the shelves divided and subdivided, like the cells in a beehive, is very curious. A stranger might easily lose himself in this literary maze. Such of our readers as can make it convenient will, doubtless, visit the new room, and, perhaps, it may be interesting to some at a distance, to give a few particulars of the arrangement and regulations of this useful place of study.

The written recommendation of a clergyman, or well-known member of the medical profession, or any one of note in art or literature, is sufficient to obtain the use of this great library for six months, and at the end of that time the admission can be renewed on presenting the original ticket.

On entering the reading-room, the visitors at first are at some loss to find out the books which they require, the various catalogues themselves forming a large library. In these are embraced the various works under the name of their authors; and if a publication by Smith is wanted, it will be the labour of nearly an hour to get over the list. There are the catalogues of the manuscripts, newspapers, music, one expressly for the use of the reading-room, &c. Having found the books needed, it is necessary to copy the name of the author, and description of the work, and also the press mark, on a printed form supplied. The ticket or tickets are then delivered to an attendant placed for the purpose, who passes it to another, who proceeds to the part of the library in which is the press which corresponds with the number wanted. In due course the books are laid on the table before those who require them: the tickets are kept until the books are returned. In the reading-room, however, there are about 20,000 volumes, which can be taken from the shelves without any ticket. Here are ranged together the best editions of the standard poets, dramatists, and novelists: the chief magazines, various editions of the Bible, dictionaries, both English and foreign, fill many shelves. There are all the best encyclopædies, biographical dictionaries, voyages, and travels. There are also the



best of the serial publications: our own volumes begin to present considerable bulk. There are also in their proper places the standard books on anatomy, chemistry, botany. Indeed, the reading-room, independent of the mass of material behind, is so well arranged and so useful, that we hope before long some means will be found of making its contents available to a large class who could use it only in the evenings.

We must congratulate Mr. Smirke on the satisfactory completion of this important and remarkable piece of construction.

#### "BUILT UP" IN ISLINGTON.

I AM, Sir, an old inhabitant of "Merrie Islington," and can remember in this neighbourhood many a shady spot which afforded a pleasant shelter in the hot weather. I also remember rows of hawthorn hedges which, in the season, were snowy white with "May," and many little country-houses imbedded in trees, and so retired, that it was not uncommon for them to have loud-toned bells like those used in factories for the purpose of giving alarm in case of robbery or fire.

When I hear the cries of the costermongers, and see the great thronging of both human beings and the brute creation in the Caleonian-road and the streets which branch off from it in all directions, it puzzles me to fix the site of well-remembered scenes. Can it be possible that in this spot, now blazing with gas-lights, the shop-windows decked with gay advertisements of teas and coffees, not much more than a score of years ago young artists would sit, day after day, sketching the picturesque foliage and branches? At times I almost doubt, although I have seen it with my own eyes, and assisted in the operation, that splendid crops of hay have been so recently made on what is now Copenhagen-street, William-street, and those near.

Sometimes, Sir, I meet with one of the few remaining old inhabitants whose memory goes back as far as mine, and we feel a pleasure in taking short journeys along the rows of new streets, for the purpose of comparing our recollections. The square in which the New River reservoir is now placed, being a high point of land, is a favourite spot for observation. You would scarcely think that opposite to what is now the Belvidere Tavern, there was a place called "Brown's Pond," which was a spot on which all the refuse from far and near was collected. Then towards London were a few suburban taverns,—"Merlin's Cave" one of them,—and the New River Waterworks, with railing (not a wall) round it, so that you might see the pleasant-looking water. By the way, there was, and still is, a very old house, with high-pitched pent roof, of about James I.'s time, in the now enclosed area. Sadler's-wells was close by, and over meadows in which cows were grazing and children and others at play, was a fine view of St. Paul's and what was then the outskirts of the great city.

My ancient friends and I remember,—(taking a position as far as possible from Brown's Pond, and still allowing a sufficient elevation,—that there were the Bagnigge-wells Tea-gardens, a country-place of famous resort, where there were grottoes of shell-work and little pools of water, and other bits of ornamental work, which were greatly thought of at that day. There were also the Pindar of Wakefield, and a few more scattered houses, but no Clerkenwell prison, no New St. Pancras Church, Tavistock or Seymour squares. At the time when I have caught sticklebacks not far from what is now the Great Northern station, we had not dreamt of railways, and such like inventions, nor of omnibuses or cabs. Montague House and gardens, and Queen-square and the places adjoining, were visible from this spot; but towards Mary-lebone fields and Paddington there were only a few straggling houses, and a distant view of the country lost this prospect.

Towards the east was the picturesque Angel Inn, with its galleried yard; the pointed gables of the village of Islington; and, beyond, a clear green space towards Essex. On the north were the old Conduit play-fields, and places of refreshment and recreation adjoining. During these walks we talk of the dangers of the roads in old times of coaches, stage-wagons, and other matters, which you have lately referred to, so that repetition is unnecessary: indeed, pleasant as this old-time gossip is to us ancients, I find some of the present generation to be rather impatient listeners. I will, therefore, proceed to mention the circumstances which have led me to pen this communication.

It is a number of years now since I established myself in a little house on a spot which I thought to be at such a distance from modern buildings as to be out of the reach of improvements. This little dwelling had a nice slope in front towards the canal, and was pleasant with trees and flowers. I could hear the bells of St. Mary's, and so still was the place that the booming of the great bell of St. Paul's, and those of many other churches, were sounds com-

monly to be noted: the traffic on the water seen through gaps among the willows served to enliven the scene. Gradually, Sir, the brickmakers approached, and the air became less pleasant in consequence of the earthy-smelling smoke which came when the wind was in certain quarters. Soon it mattered not from which "air" the wind blew, for, on every side, I was beset by the brickmakers; and then roads were roughly laid out; and, like the skirmishing before an army, houses began to take possession of salient angles, and I wondered what madness could have induced persons to rear vast gin palaces so far removed from human habitations.

Soon, however, the foundations were dug up, where the soil was gravelly; and the main body of the army, in the shape of rows of houses, marched irresistibly along: amongst these were churches and other useful institutions. Along the banks of the canal, within my view, rose several large manufactories, with tall chimneys and other unsightly architectural features, and wharfs were, one after another, erected; and then a church, with turrets of Henry VIII.'s time, with slate roof, brick walls, and unpleasant-looking windows. My trees began to wither, and I began to have so little pleasure in my garden, that I consented to part with most of it. And then a sort of store arose, on which were planted various square erections of iron, so ugly that I regret that I cannot have for them but a peep at the church which before I had thought so little of. On the other side of me the builders are at work. The roads are impassable in wet weather; and look in what direction I will, I can see nothing agreeable to the eye. I must now, therefore, much as I like the spot and all its memories, beat a retreat, before a force which I cannot resist, and fly to some nook where I can quietly think over times past, and wonder at,—and feel a pride, notwithstanding my individual discomfort in,—the advancement of a district I have for so many years loved so well.

AN ANCIENT OF DAYS.

#### GOVERNMENT OFFICES COMPETITION.

A CORRESPONDENT, who ought to be well informed, states that it has been determined, room failing, to hang the ground-plans in an adjoining apartment! We are enabled to say, however, that this is not correct: and that all the drawings will be hung together, though some, probably, will be high. Nothing is yet known as to the appointment of the judges, or of the time for opening the exhibition.

"Light Brown Indian Ink" has favoured the readers of the *Builder* with an admirable piece of special pleading. Without laying so much stress on the importance of impartiality, why did he not unaffectedly say, "I have sent no perspective of my design for the Public Offices, so withdraw all the perspectives until after the award?"

He reminds me of nothing so much as the fox in the fable, who, having lost his tail in a trap, summoned a conclave of his brethren, and proposed that they should all cut off their tails. If my memory serves me, Mr. Tailless dwelt on the excessive inconvenience of a long bushy appendage, as proved in his own case. At least, he brought some specious, plausible reasons to bear on the subject. In reply, a Vulpine Pater Conscripuit made use of very convincing arguments on the other side, and the result of the discussion is shown in the fact (so gratifying to country squires) that foxes wear their tails to this day.

In choosing the judges, Sir B. Hall has, indeed, a difficult task. As to finding persons "absolutely impartial and disinterested," I fear that is impossible, unless we go to Lord R. Cecil's peasantry. Every man of education and cultivated taste (and such only should be judges) must have formed some opinion of architectural styles. Let the Goths and the Classicists have each their representatives, but let the right honourable chief commissioner steer clear of bigots.

We may carp at the instruction issued by her Majesty's Works, but they are the best yet given for any competition. Let us do them justice. Abjuring artistic trickery of colour in the views, requiring elevations in outline, laying down a uniformity of scale, fully describing the requirements for the plans, suggesting that "one view may accompany each design," and requiring no estimate; everything was done that could be done, to give everybody a fair chance.

When "L. B. I. I." says, "away with the motto mockery," he lays himself open to the suspicion of being an "eminent architect" for no other can afford to dispense with the *incognito*. If he have not attained eminence, he is proposing a suicidal course; unless, indeed, he has friends in high places,

who will advocate a design bearing his name? But I will not think this of him.

To exclude designs from competition because floors and corridors are made of yellow and blue, and because walls are tinted a shade or even four or five shades darker than light brown Indian ink, would be an act of narrow-mindedness unworthy of the members of a liberal profession, or of a fair stand-up English fight.

Let us be chivalrous to one another; let us scorn to out our fellow-competitors by insisting too much on these minor points. If any one has been mad enough to tint or shadow his elevations, let him be made a public example. Will there be one such? I doubt it.

RENARDUS P. C.

#### ARCHITECTURAL ASSOCIATION.

A PUBLIC meeting and conversation, in connection with this Association, was held at Lyon's Inn-hall, Newcastle-street, Strand, on Friday evening, the 17th instant. In the absence of the president, the chair was occupied by Mr. G. J. Wigley, who, in opening the proceedings, adverted to the many advantages arising to the Association from meetings such as that, not the least among which was that it brought amongst them many of the older members of their profession, whose avocations prevented their more frequent attendance at the ordinary meetings. He congratulated the members of the Association on the satisfactory progress of their affairs, in a financial as well as in other respects: they were making up for past deficiencies, and were gradually getting out of debt; and he took occasion to refer to the approaching anniversary festival of the Association, which would take place during the first week in May. He looked upon events of that nature as of peculiar interest in the artist's life, and he hoped to see a large gathering upon the occasion. The Rev. C. Boutell was to have read a paper, but was unexpectedly called out of town; and a member made some observations in lieu.

#### SUGGESTIONS FOR FURNACE CHIMNEYS.

IN adopting vertical lines in chimneys great care should be taken to graduate the strength of the walls as the shaft is carried up, so as to secure lightness with elevation. The upper portions of tall chimneys should ever be light, so as to reduce oscillation. Tall chimneys, having heavy cornice finishings, have fallen. A storm of wind sets them in motion, and over they go. There are the ruins of chimneys which were so weighted, and have fallen, near Stoke-upon-Trent, and in other places. The student must not be drawn into any mistake in this respect: A tall chimney must have a secure foundation, a well-arranged shaft, growing lighter in substance as it mounts upwards, and any ornamental finishing must be the lightest possible, to secure the required appearance with strength. Great attention must be paid to the mortar, so as to use the best in quality and quite fresh.

We have arranged and engraved some of the designs for shafts, made by Mr. R. Rawlinson, in illustration of his paper on "Chimney Construction," printed on p. 120, *ante*. Commencing on the right-hand side of the engraving, the first is a design for a tall chimney, to be constructed with brick of two colours. Stone may be used in the base, as shown. The plinth and shaft are square on section. The cornice may be terra-cotta and brick.

The second shaft is square on section: stone may be used in the plinth to form the set-offs. The main design is to be worked out in brickwork and terra-cotta. The attic roof is of iron. This design, although apparently elaborate, need not be very expensive, as the forms are repeated, and in their structure they should be simple.

In the third we have a detached shaft, square on section, formed of brick of two colours, with stone cornices in plinth, and iron roof to attic.

The fourth has an attached shaft, square on section. Brick of two colours is used, with iron roof to attic.

The fifth has an attached base. The shaft is octagonal. The cap, square, with octagonal lantern of iron. The base and shaft are of brick, of uniform tone and colour.

The sixth is a square shaft of brickwork, banded; formed of bricks of two colours. The cornice and attic are of brick and terra-cotta.

The seventh is a detached shaft, square on section, of brickwork, in two colours. The cornice is of brick and terra-cotta; the roof of attic to be iron.

Two cottage or house chimneys are shown, roofed over as in the East. Tile or terra-cotta may be used.





DESIGNS FOR FURNACE CHIMNEY-SHAFTS.—From Sketches by Mr. R. Rawlinson.



## ON HOUSES AS THEY WERE, AS THEY ARE, AND AS THEY OUGHT TO BE.\*

THE case of a private client with a selected architect is a very different one to that of a committee. Some persons complain that the client names beforehand the price which he will pay for the building that he wants, and thus confines the taste of his architect. On the contrary, the restrictions which the peculiar wants and wishes of the employer dictate should form the pressure to make the fountain of genius play high.

Few buildings, it may be presumed, are now built under such circumstances as the East-India House. It would appear that the chairman said to the architect of the Company, Mr. Jupp, "We want a house: tell us how much it will cost." Mr. Jupp made his design and estimate, which were approved by the Board, excepting as to the front. The Board offered that subject, not the whole work, to a limited competition, I believe, or, at all events, chose another architect to design it. Mr. Jupp executed the work for less than his estimate, and the Board paid the amount, with the addition of a gratuity to him of 1,000*l*. Such a gift was not singular in the last century, but now, we say, the more important the work the less we will pay for it in proportion.

In many cases the architect is not the offender who causes a house to be ugly—but the want of education in the client.

Frequently a good design is put down, to save some trifling expense, and after the contract is made with the builder, one alteration after another is made by the client, the contract is void, and the bills for extras when added to the amount of the amended tenders often greatly exceed the sum that would have completed the original satisfactory design for the house. It is easy for a client to say that he will make no alterations; but when a work is begun with the sole object of parsimony before the mind, one of two things happens. If there is an architect employed, beauty and utility are sacrificed to convenience and strength, the meagre starved design does not come up to the expectation of the proprietor and his critical friends, and before and after completion as much is spent in various attempts to improve the house as would have sufficed at first to make it right; but even then the building always betrays its sordid origin by its mean features, which can hardly be effaced: the unhappy architect loses his credit; and, as the house will, perhaps, not fetch half its cost, the disappointed proprietor loses his money, when even a speculative builder would have known better. If there be no architect, the usual result, indeed, is, that ornament, not beauty, is put on to the building at the expense of the materials and labour: the proprietor has saved the cost of an architect, and has sunk his money in a house that will frequently not sell, and will want repairs three or four times as often as a good ugly house, and these repairs will cost at least as much as the original price of the house, being immeasurably more than the value of the repairs to an ugly good house.

When we begin to consider the cost of a building, we find another difficulty in store for committees. The cake, reduced in size and shorn of its ornaments, is put out to tender, and the committee is puzzled by the result. The figures I produce are tenders actually made within the last two months:—

2,800	...	757	...	400	...	232
2,600	...	740	...	371	...	247
2,492	...	695	...	356	...	232
*2,234	...	*558	...	*319	...	*186
2,198	...	531	...	314	...	177
2,197	...	530	...	313	...	177
2,194	...	530	...	312	...	173
2,112	...	486	...	*301	...	162
2,005	...	470	...	286	...	157
9) 20,632	9) 5,287	9) 2,972	9) 1,743			
*Average 2,315	...	587	...	330	...	194

Fifty more examples of this sort of competition are at your service: there can be no hesitation in saying that the average of those would have amply remunerated any respectable tradesman. The highest amounts, perhaps, arose from too expensive modes of proceeding, from the expectation of large profits, and in some cases from mistakes: the lowest ones certainly arose from mistakes or intention.

If the committee prides itself on honesty, and paying no more than a thing is worth, but still wishes to pay the fair value of the building, what choice can it make in such tenders? There is an outcry if it does not take the lowest. If the difference arises from a mistake, the builder generally withdraws his tender on hearing of the large difference; but if he is in a hurry to begin, the committee may expect to have

either continual quarrels, or to hear of the builder's bankruptcy, with a demand from his assignees for the most extravagant value that can be put upon so much of the work as is done. A committee, by accepting of such low tenders, also gets into the difficulty of depending eventually much more money than it is intended. It chooses the biggest and prettiest cake, and it learns that it can have for its money, and finds afterwards that it is certainly a large and good-looking cake, but of flour and water only; that the other ingredients are wanting; that the building, when paid for according to contract, and perhaps not too well built for the money, will cost as much more to finish before it can be used; a result which several asylums and similar buildings have presented to their subscribers, owing entirely to the ignorance or injustice of their committees.

If an individual attempts to build without the assistance of an architect, he is liable to the same misfortune; and the quarrels which arise are amongst the nicest pickings for the barristers that can be given them, by judges who dread having to sit for several days over a case which consists of a builder's bill.

The usual way of settling a disputed account for building is to measure all the work and pay the current price for it. This would be the honestest way of dealing in all cases, if all work were equally good and were done under similar circumstances, and if the current price could ever be strictly ascertained. It is admitted, too, that this "measure and value" system, still retained by the Government, was open to gross frauds, and that it is in want of revision: many prices still asked are those for which the best work was formerly done. Amongst other duties, I have had to value bad work, and I can only liken the difficulty to the trouble of settling the precise value of adulterated food.

The great objection to building by unrestricted competition is, that it gives the best chance to the worst man,—to the man who intends to break his contract or to defraud his creditors.

But no human system can be entirely free from imperfections and disadvantages. Both committees and individuals are obliged to announce that they do not bind themselves to accept the lowest tender.

If called upon to name a better method, I should feel inclined to recommend the plan of taking the first, second, or third, as might be previously settled, below the average of tenders made, for we so often see our respectable builders clustered together in the middle of such a list of tenders, that it is evident their prices were tolerably near the truth. At all events, they are the builders to whom I should apply in a limited competition, and no doubt there are several gentlemen, themselves builders, in this Society, who will tell you that it is not worth while to compete, except under limitation, i. e. that you cannot expect to get good work by an unlimited competition.

In order to build cheaply, the speculative builder, or the bad builder, resorts or connives at a system of scamping, which, if the work be executed under an architect, keeps every one connected with the building in a fever of quarrel; and which, if it is not executed under an architect, may be a great deal worse than the following picture of things which you may see daily if you will stop and look at the new houses on the outskirts of London.

The soil is perhaps clay, at first with no great drain near it: as soon as a large sewer, or a very hot season comes, the foundations of the house sink a little, and the walls crack considerably. Or the soil is merely dry rubbish, and the house gradually sinks into it. This would be of less importance if the house could keep upright while sinking, or, if the soil be good, the foundations, that is to say, the bottom courses of the brickwork, are merely bits of stone and brick lying in a mass of mortar.

Lumps of old brickwork carelessly built into new walls, and old road pavement, erectly the worst materials now used for walls; indeed, in themselves they are jewels compared to the bricks, which, instead of ringing like a bell under the strike of a hammer, crumble under the pressure of a strong hand or the touch of a light hammer.

As for the mortar, it is not much better than the bricks: it ought to be made of newly-burnt lime and river sand; but the lime is allowed to spoil before it is used, and the sand is sea sand or pit sand, or road sand, road drift, or road stuff, or the actual earth from the site of the premises: all these have the slight defect of either introducing vegetable rot into the new house, or of preventing the mortar from becoming hard. If good lime and sand are used, instead of being made by hand manual labour into a mass, having each particle of sand covered with a coat of lime (as to keeping it mellow, that is now never thought of), they are mixed by boys, and drenched, often with foul water, for immediate use, and the mortar is supplied to bricklayers who are engaged either by the piece or by the day: in either case it is their business to get

as many bricks as they can to look laid. I have heard a man threatened with dismissal by a foreman for not laying half as many bricks again in a day as are allowed in the price of labour for fair work. Often when the bricks are good they are sometimes so dry that the water is absorbed out of even well-made mortar, which dries into a powder. But in general our bricks are porous enough, without this additional fault; and you may always suspect this is the case when there is a rush of air into the room at the skirting: this is healthy, and consequently ought not to be altogether stopped. You will observe that when new brickwork has bits of old brickwork in it, the new settles down a good deal in the first three months, but the old has no settlement to make, so there is a crack on each side of it for some distance. Even where I have been watchful, advantage has been taken of my absence to finish a good piece of foundation with rubbish and I have been personally threatened for persevering in having it taken up, or to put rubbishing concrete instead of stone paving: in the latter case the building owner desired me not to interfere, the foreman had told him it was safer, and cost more than the stone. Bricks are laid now-a-days with a bed of mortar, roughly smoothed out, when the bricklayer takes up a little on the trowel, wipes it off on the edge of a brick already laid, and puts the next brick in place with as little exertion as possible. When this little bit of mortar has perished, the air circulates in the wall in a manner that is advantageous to our health but decidedly inconvenient and annoying, and the house wants what is called pointing, of which you all understand the nature, expense, and trouble: in fact, the house requires painting and papering after it. But these are not actually germs of danger sufficient to cause the house to be pulled down: they may cause alarm to the inhabitants, but danger is real when the soil alters its condition, when the bottom parts of the wall turn up on to the kitchen floor, when the walls and piers bulge out in the middle of their height, when the walls begin to overhang, when the bricks in the arches of the windows begin to drop out like teeth: in any of these cases I would recommend you to apply to a real architect, and if he should say "Go out," I would take the advice if possible. Sometimes, indeed, we hear of a few wedges being lightly driven into cracks, with the advice that the tenants should "go" if the wedges fall by their own weight out of the cracks when the cracks get larger. Some persons are so strong-minded as to sleep without further precautions in such a house: others have some one to sit up all night and watch the wedges; but I recommend that little bells, or, better still, detonating balls, should be fixed to the wedges, because the old nurse or watchman might go to sleep as well as the rest of the family.

A building may be really dangerous, yet give no sign of the fact to most observers. A house may appear very dangerous without there being any real cause for its demolition. I suspect that we borrowed from France or Germany the system of tying one or more houses together with iron rods, which announce their existence by a sort of clock-plate fastened on the outside. This affords an object for decoration, which has not yet been treated successfully in London, but abroad these plates (which are technically called anchors) are full of significance and loveliness of form and grace of design, to which the beauty of colour might be added.

Among the little defects of the public, I am inclined to place the notion that an architect should be able to say whether a house is in danger or not by simply looking at it. Some architects certainly have an apparently instinctive appreciation of real danger, as some physicians can foresee apoplexy; but the medical man gets the aid of the tongue, the pulse, the stethoscope, and a statement of the internal feelings: the architect is generally allowed, like the Eastern physicians, to see the skin of his patient, but not to touch it. There is, perhaps, no outrage upon domestic comfort and private property more resented than the sensible attempt of a surveyor whom the public may employ to examine a house. Does he want to see if the roof and chimneys are sound; there is no way out to it except through a hole big enough for a child, but scarcely for a man; and if he puts his head through, he generally sees that, unless he means to risk his neck, he had better send for a long ladder and get up outside. The connection between long ladders and broken slates, and the consequences, are familiar, of course, to many present. If he wishes to see that the floors are sound, and wants to have a board in each floor removed, it would seem that he had done an injury to one of the family; or, if the house be empty, and he tries to see what sort of bricks are behind the stucco or plastered front of the walls, the landlord watches him as he would a thief; but the great explosion of wrath is caused by a hint as to the foundations and the drains: in fact, the surveyor who goes that length had better be a man able to control his temper. Yet all these are points on

\* Read by Mr. Pepworth, at the Society of Arts. See p. 220, ante.



which a prudent man ought to be satisfied before he takes a house for seven years, and much more before he buys a house property.

Fortunately, however, there are other indications of the state of the health of a house, and I will liberally put you in possession of some of the principal ones. If you walk over a house and find that the walls are cracked or damp, that the paperhangings are changed in colour, that the floors shake, that the stairs creak, that the doors and windows have not fitted, then you may be sure that you are among the elements of a haunted house, and that you had better not enter it again without professional advice. I run no risk in this liberality, for people are found to take houses with a clause that "no dancing is allowed on the premises." We all know cases where the supper has been demolished by the ceiling, and now we go to houses where the ground and first-floors are propped up on the occasion of an evening party, though no dancing is contemplated.

But neither the public nor professional men can tell without experience the signs of premature old age in a house. When it was young, the heedless, speculative builder had caused the walls to be run up, and a bricklayer knows full well the meaning of that word. He put their footings on the wet ground, with no lead, or slate, or asphaltic soles: he put no area round them, but wrapped them up with wet clay (or, perhaps, he put an area under the clay, as is sometimes rather uselessly managed). As to the chimney-stacks, they are, probably, as usual, only skins of brickwork, enclosing flues and those vast holes for the reception of red-hot soot which set so many houses on fire: the arches of the windows and door-openings are, probably, only shams; and, as to the exterior cornices, let the corner's inquests tell how they are made. Rotten paving-stones are laid, off their balance, on the wall, and are to be kept in their place by a load of parapet, until the day when some one steps off a ladder on to the cornice, either for repairs, or in case of fire, or until a new proprietor removes the parapet in the course of alterations and improvements. Then, perhaps, there is a large amount of what may be called hereditary disease in the house. For example, the carpenters employ sometimes decayed old stuff, and exhibit their forthright of using no more of it than can be helped, by putting that stuff at distances a quarter larger than is generally allowed for new and good materials. Of course builders who will do that will not hesitate to do without a girder or a main beam, if possible, or will put a couple of joists to represent it, and will put unseasoned breastsummers to carry the whole weight of a front upon story-ports that will bend, literally bend, under the weight of the breastsummer, before the brickwork goes upon it at all; or will carry a whole house upon little iron columns, which are so small that they act like bradwails, and cut at top and bottom into these walls, which, of course, leads to settlements: as to partitions, so slight that we must not lean against them until they are lathed and plastered, but so framed that if a tenant wants to cut a doorway in them he cuts the one piece of wood which holds the whole together, I am inclined to deem them less prejudicial than roofs heavily encumbered in appearance but of decayed or unseasoned wood. I must not, however, fail to give to our modern carpenters in London the credit of making two new joists, or two new boards, out of a single old one. At Brighton, however, they can, and do, get three floor-boards out of a single old one. It is, perhaps, rather unscientific to use the half-joists in the present way.

V: they would, undoubtedly, be stronger if laid A; but then there would be nothing to nail the boards upon. The joiners are certainly to be pitied who are sent into a house to put their slips of dry wood into the crevices between each pair of floor-boards that have shrunk, and to make the skirtings fit close to the floor; but it is generally considered best to remove the doors which not only have their panels split, but are so twisted that when they are shut at the top a rule may be passed near the bottom. A very useful cause of gradual and unseasoned decay in a house is the roof. The small-sized slates split and let the water in, and are laid so badly that the water gets in if they do not split. They are fastened with iron nails that decay and let the slates slip and cut the gutter, which is either of zinc or lead, and in both cases too thin, and so leak: the junction of the slates with the walls is putted up with cement, which cracks and lets the water in: the gutter is not deep enough, and overflows; and the rain-water pipes are so small that they easily get stopped.

The fall of ceilings is not always a mark of danger: the plasterers have covered the partition and ceiling timbers so liberally with laths, that there is no room for the plaster to be pushed between them and turn over, so as to make what is called a key, which in fact is to fasten it to the laths: it will not stick of itself to the laths for any length of time if there is the slightest tremor in the house: children playing in

the room should be taught that if they are very uproarious the ceiling may tumble upon them, as in the case of a school lately. The great quantity of water used in making the mortar for plastering kept a house very damp for some time formerly; but now the drying is forced by braziers full of charcoal in each room: habits of tape and rule, and a deplorable want of scientific knowledge, invariably put a brazier under the floor in the centre of the ceiling: the room becomes very hot: the flower and mouldings begin to crack and perhaps to fall, whilst cracks of infinite variety as to shape and magnitude appear on the ceiling and the walls. That is to say, this happens only when the doors are left open, for many people shut them, and the charcoal fire goes out soon afterwards. In a few days the plastered walls are so many fields of blisters, arising from the badly burnt lime in the mortar; but this passes unregarded, for the painter and paper-hanger have yet to come.

The painter attempts to disguise all defects with paint and putty, but as the work is done in a damp house, every patch and spot of the knotting or covering of the bad wood, and of the nail holes filled with putty, can be seen through the finishing coat of paint: the paint, however, is to blame partly, for it has hardly been painted at all in the whole sense of the word.

The paperhanger is equally unlucky: he does his best, I suppose, to get the joints of his papers to match, but it tries the temper to see a good red flock paper with a white line at each joint, and to see half the colours disappear just because the papers were hung before the plastering was quite dry. When that is the case it is usual to see if the grates have not got rusty and so stained the chimney-pieces: that stain nothing that I can name will remove.

But what does all this matter? We see along our suburbs whole rows of houses unfinished, or partly unfinished: when the plasterers begin their work, an inscription says, "This desirable (or this excellent) family residence to be let," and Kars-Williams Lodge is actually let in time to allow the board to be used for the next house—and so on along the row.

Our forefathers were usually so short-sighted as to lose a year's rent, by waiting so long before they painted and papered, and the medical men seem to think that a damp house is not so safe to sleep in as the wet plaids of which we have heard. But the house is taken: let the tenant look to the rest, because, after all the trouble of moving furniture, perhaps new, a fire is lighted for the first time and in the best room, probably to receive the bride on her entrance to home. You may imagine her exclamation when she ventured into the drawing-room, and was straightway saluted by what Bulwer felicitously terms a joyous dance of those monads vulgarly called smuts or blacks; you feel indignation at the bridegroom who exclaimed to the choking servant that he had to go to the city, and rushed out with the blacks tumultuously following him to the gate, one yard from the door-step. The money value of the fretting, and fuming, and worry, and care, consequent upon the discovery that a chimney will not draw, may be calculated; but when half-a-dozen chimneys rebel, the sum is beyond belief: of course the clouds of smoke that rebelliously will not roll up the chimney, but prefer going out by the door or the window, are endured in the hope that, when the chimney is dry, all will be right, but in the meantime the ceiling, the paper, and the paint get discoloured, and the tenant must have no fire, or go to a chimney-doctor. This functionary, generally a white wizard, engages to unbewitch the chimney with a patent top, good in some cases on principles which he does not understand, and when at last the patient victim will try no more tops, he gets as a parting blessing the hint that perhaps there is a brick too much, or perhaps a brick too little, in the chimney.

A guileless and uneducated portion of English householders, living in London, also appears to have a belief that all these points fall under the notice of the district surveyor. He is to be paid, the Act of Parliament says, and of course he is to do something for his money. Several district surveyors could tell you that they are often expected to do, for their fee of shillings, as much work beyond what the Act requires as an engineer would charge guineas for. It is desirable that the fiction of every Englishman's having a knowledge of the laws was in this case a fact: the district surveyor's duty is simply, on the part of the State, to watch the building owner, the architect, and the builder, and to see that they do not, from ignorance, carelessness, wilfulness, or misapprehension, transgress certain rules laid down in the Act.

If the public expects that any architect can possibly see every brick laid, every heap of mortar made, every piece of timber cut, every slate laid,—in short, everything done, it makes a mistake which should be rectified. It might as well expect Mr. Rowland Hill to weigh every letter that passes into the Post-office.

If the public will avail itself of unlimited competition, and will not pay the builder a fair price for his work, the class of honest builders will die out, and in all our houses we shall see one or more faults like those which I have just described, without the least exaggeration, and for most of which proof can be found in the newspapers of the day, and for one or two of which, taken separately, proof will be found in the experience of my audience or of their friends.

Thus are houses built to be sold, and the question arises, can any better houses be built under the present system of competition?

It is want of education, and also fashion, which allows the public to rent or buy any such houses at all, and which allows the builders to erect such houses; and, as the attention of the society appears to be especially turned at present to popular education, I hope that these observations, on points which are not thus treated in any book, will be acceptable, as giving some insight into those most useful, but too much neglected, portions of knowledge as regards a dwelling. It is supposed by the public that because all ornament has not been set aside economy was not a great object with the speculative builder. This is a great fallacy. Where absolute parsimony is required, all ornament must be set aside, but when economy is the object, ornament is frequently requisite, for the desire to have some decoration in his dwelling is usual, perhaps inherent, in man; and speculative bad builders know the fact so well that they think rightly it is economical to spend some of the money saved by bad construction on decoration. Thus the graining or imitative painting is an effective investment of capital. There are few eyes to which colour is not attractive, and an empty house, decorated in the best taste, if that be a simple one, is not easily let. It seems necessary to hang gaudy papers, and to paint the woodwork in imitation of oak and maple. The moment the house is furnished this effect disappears: the spots of gaudy paper that appear among the furniture are obtrusive and uncomfortable; as for the woodwork, nobody sees whether the imitation be good, bad, or indifferent; and there only remains the varnished marbled paper of the staircase,—that is economical, because the colour is desirable as giving an air of comfort, and spots of dirt are supposed to be part of the pattern. There can be no faith in the cleanly habits of people who put up a varnished paper on the staircase. The question of *sham*, as it is now generally called, is intentionally asked this evening: it is enough for my purpose to say that the imitation for doors, shutters, and skirtings, of woods that cannot be afforded, is generally a profitable investment of capital, like most of the other deceptions by which we keep up appearances,—deceptions which are regarded by some earnest persons as offences less against good taste than against morality and political economy.

At first sight it would seem that the investment of capital in houses is a speculation to be recommended, either to a person wishing to purchase a residence for himself, or to a person having a little money to invest. For suppose the sum to be invested is 1,350*l.* and he decides to build for himself by unlimited competition, he may get the following tenders (which have really occurred), 1,497*l.*, 1,445*l.*, 1,325*l.*, 1,298*l.*, 1,198*l.*, average 1,352*l.*. If he takes the lowest tender he saves 150*l.* that he may fund at 3 per cent. and will give him back his 1,200*l.* in seventy years. Perhaps he lets the house on lease, and avoids the repairs; but if not so lucky, he can usually manage to pocket three years' rent in seven, and if content with a clear profit rent of 7½ per cent. (instead of ten generally asked), he fancies that he sees in thirty-five years 1,350*l.* in rent, without reckoning compound interest, and the houses to sell, and the 412*l.* made by his original saving, and you will say that a house ought to clear more than three years' rent out of seven. But it does not, somehow, if it is not a good built house.

On the other hand, if the 1,350*l.* had been spent, the builder would only fancy that he saw in thirty-five years 1,350*l.* in rent, without compound interest, and the houses to sell; for such houses will fetch no more rent from a sensible public than the bad ones in the same street: it must drop its rent to the 90*l.* which its competitor can afford to take.

Is it in human speculation to resist these results. Whom does it hurt? Why should the builder be forced to spend the extra 150*l.* on each house or set of houses.

The policy of honesty in building only shows itself after a time.

Every year of a badly-built house may be said to cost at least one-third of the rent in repairs: if they are not done the house goes to ruin at once, and many persons have not more spare money than that which they have invested: several such houses require that a man shall have capital, and the speculative builders generally have little or none.

Our modern houses are so badly built, that even speculative builders now find it difficult to sell a lease,



and can scarcely get any one to take a seven, fourteen, or twenty-one years' lease: people begin to see the advantage of taking a house on trial, and a three years' agreement is the consequence: at the end of that time so much is wanting to the house, that the trouble and expense of moving is balanced by the inconvenience of having workmen in the house, and by the discovery that not far off there is another new house to be let for three years, decorated after the latest fashion.

In seven years the 1,200l. houses will have demanded the outlay of 180l. but the 1,350l. houses nothing: and suppose that neither have let, the truth gains at once. In fourteen years the 1,200l. houses will have cost 360l. in repairs, but the 1,350l. houses perhaps only 90l. In the first fourteen years the 1,200l. houses may have luckily produced 540l. clear: the 1,350l. houses are hardly likely to have lost more than three tenants, and would then have produced 990l. so that the balance on the side of good building at the end of fourteen years is, 990l.—90l.—900l. less 765l.=135l. more than the bad building gives.

It is quite true that at the end of the first seven years the rents may fall equally, but the proportion of profit will alter in favour of good building.

The great damage that a bad house does to a good one in the same street, or near it, is to reduce the rents and the market values to the same level. All houses have suspicious characters in the eyes of a purchaser at auction. But when thirty-five years have expired, the 1,200l. houses will not be so good, with all the money spent on them, as the 1,350l. houses, and at the end of seventy years, if not much sooner, their value will have perished, but the 1,350l. houses will fetch about as much in thirty-five years as at present.

And society is interested in the question. Although the saving apparently of the 150l. is considered, there is a loss to society of 720l. on the 1,200l. houses, but the repairs of the 1,350l. houses are only a loss of 382l. so that society loses to the individual 338l. on every 1,200l. spent in bad building. I leave the importance of this subject to yourselves.

Speaking of honesty, I must not omit to mention that the speculative builder has a great advantage over the private building owner in the discounts allowed by the trades, which allow him to sell his building, while finishing, at prime cost; whereas the private owner has to pay his builder that "prime cost," and a profit, and in large works probably the amount paid to the architect for looking to his interests, before he can sell; and therefore he cannot afford to sell at builders' prices: if he attempts to sell by auction, the scamped work of the speculative builders has ruined his property before he finished. But if he can hold the property, he can beat the others by his honesty.

Thus I have shown you the various characters and difficulties of the building owner, either as a committee or as an individual—of the architect as an agent, whether professional or quack—of the builder, as a monopolist and a tradesman—and of the speculative builder. I have shown you the situation of many of our old London houses according to their age, and you can see their duration as well as myself. I have shown you most of the chief defects that exist in modern buildings, with many of the causes of their early ruin. I have shown you how, if good, their cost, at first, is extravagant to the building owner, but if bad, a good investment at the moment to the speculative builder; and I trust that I have shown you that if the systems which I have condemned are continued, no blame for faults of construction or want of beauty in our buildings can justly be attributed to the members of the profession to which I have the honour to belong.

#### THE FALL OF WALL, RUSSELL-PLACE, COVENT-GARDEN.

At the adjourned inquest on the sufferers through this unfortunate occurrence, a joint report from Messrs. Parker and Hakewill was read, setting forth the particulars we have already given, and proceeding thus:—

"The appearance of the back wall fully bears out the assertion of its apparent soundness. The bricks themselves are remarkably sound, and the mortar strong and binding, so much so that large masses of brickwork may still be seen unbroken by the fall. This is also proved by the manner of the fall. A decayed wall would have settled down on its base, and formed a heap of rubbish. This has been broken off at its base and fallen flat, and but for the crushing of the floor on which it fell would have presented a pavement as even, nearly, in surface as the wall presented before its fall. This is exactly the effect presented by a new boundary wall when blown down by the wind.

The portion of the wall also remaining in the basement is remarkably strong, and is even capable of being built upon again.

The cause of weakness, entirely hidden from the eye, existed at the exact level of the ground floor. Here, for a space of about 18 inches above the underside of the wall-plate, the mortar had become deteriorated by damp, the drainage of the stables; and at this level a piece of bond-

timber inserted in the middle of the wall had become entirely decayed, the greater portion having quite lost its fibrous nature, and the mortar having become a light earth or mould, and in the courses of the brickwork immediately above innumerable cockroaches and mealworms were living.

The wall-plate of the ground floor of the removed houses entering the wall at this level, further weakened the wall on this side, so that the whole wall practically rested on little more than the remaining half brick on the stable side; and thus fearfully poised, the slightest lateral pressure from the north would have sufficed to push it over. This agent may be found in the roof of the stable building, which is a lean-to roof, sloping from the back wall of the house to the front wall of the stables."

The coroner, in summing up, said it had been the habit of juries to return a verdict of "Accidental death" whenever the evidence fell short of a criminal charge. That might have been a very harmless course as the law formerly stood, but since other remedies were afforded to the friends of the deceased by proceedings in another court, he thought it possible that in some cases a verdict of accidental death might be improperly used as a plea against any subsequent proceedings by the relatives of the deceased. Therefore he would suggest, if the jury felt that, although there might not attach any criminal responsibility to any person, yet something had been omitted to be done which ought to have been done, they might steer a middle course, and, instead of returning a verdict of accidental death, they might say that the deceased came to their death by such and such means, caused by such and such circumstances. Thus the parties would be left free to take whatever other course they might think proper to adopt.

The jury then retired; and, after being absent about three-quarters of an hour, they returned and delivered in the following verdict:—"That the deceased, Maurice Fitzgibbon and John Shehan, came to their deaths by the falling of a wall, some portion of which being in an unsound state, not externally visible; yet they are of opinion, through an error of judgment, sufficient precaution was not taken to secure the same."

#### COMPETITIONS.

**Lichfield Museum.**—From a large number of designs, the committee have selected three, namely, those prepared by Mr. Cranston, of Birmingham; Mr. Veale, of Wolverhampton; and Messrs. Bidlake and Lovatt, of Wolverhampton; and have requested these gentlemen to re-arrange their plans to suit another and more convenient site. The amended drawings were to go in on the 25th inst.

**Tamworth Workhouse.**—The guardians have selected the design of Messrs. Briggs and Everal, of Birmingham.

**Warwick New Cemetery.**—The Warwick Burial Board have decided in favour of the designs of Mr. Edward Holmes, of Birmingham, architect, which consist of two chapels, united by a covered archway surmounted by a bell-turret; two robing-rooms, lodge, &c. The Episcopal Chapel is placed to the right, and the Dissenters' chapel to the left, and are different in design, the former being of the Early Decorated and the latter of the Early English period.

#### THE CRYSTAL PALACE.—HANDEL FESTIVAL.

The programme issued by the Crystal Palace Company, and published in our advertising columns, shows that there will be no falling off in the attractions of the coming season as compared with the last: the "opera concerts" (with the addition of the Cologne Choral Union), the flower shows, the great waterworks, and other events of last year, will be repeated.

We should be glad to see some intimation of an intention to render more available, in an instructive point of view, the architectural courts and the artistic collections. We have before suggested a series of conversational lectures at stated periods, illustrated by the contents of the building, and should be glad to see it attempted.

The arrangements for the intended Grand Handel Festival are being proceeded with rapidly. The orchestra, already completed, occupies a space of 168 feet in width (38 feet wider than Exeter-hall), and 90 feet in depth. The seats for the performers are raised, one above another, so that every instrumentalist and vocalist can have a full view of their conductor. The band will be in front, the chorus at the back. The aspect presented by this enormous superstructure, when crowded from roof to base with singers and players, can hardly fail to be one of the most imposing description. Below, the beams of timber, screwed and bolted together (there are no nails), with their stage and struts and bearings, present the appearance of a complete forest of wood-work, less scientific at first sight than further examination shows it to be.

The organ constructed expressly for the occasion

by Messrs. Gray and Davison, will occupy a platform of 40 feet wide by 24 deep, which will not only afford sufficient room for the pipes to speak, but ample passage between each division, so that any department of the structure can be approached without difficulty. The weight of the new instrument will be somewhere about 20 tons, and will demand a platform of the most solid and durable nature.

#### PROVINCIAL NEWS.

**Norwich.**—The Norfolk County Lunatic Asylum is to be enlarged so as to accommodate sixty additional patients of each sex. It is also proposed to supply the establishment with water by means of a steam-engine. The expense of the works is estimated at 19,925l.; and at the Norfolk quarter sessions, the plans submitted were approved, and the money required was ordered to be borrowed, and repaid by instalments in thirty years. The plans have been prepared by Mr. J. Brown, county surveyor.

**Wantage.**—The new schools attached to the Wesleyan chapel here were opened on Good-Friday. The new building comprises a school-room 40 feet long and 19 feet wide, entered by a porch 9 feet by 5 feet, two class-rooms respectively 28 feet by 17 feet, and 20 feet by 16 feet, with offices, &c. It is built on one side of a square plot of ground behind the chapel, having a large playground in front, and is designed to harmonize with the chapel, with grey bricks and Bath stone dressings. The principal entrance is from Back-street, under an archway. Messrs. Poulton and Woodman, of Reading, were the architects; Mr. George Martin, of Hungerford, the contractor.

**Reading.**—We understand, says the local *Mercury*, that the Government inspector has pronounced the rooms in Bridge-street unfit for the purpose of a school of art and design; and the committee are now making arrangements for the erection of a suitable building, adjoining the New Hall, London-street.

**Pelworth (Sussex).**—A girls' school is about to be erected at Byworth, in this parish, the whole cost of which will be defrayed by the liberality of Miss Constance Wyndham. The foundation-stone was laid on Tuesday last. The building is to be constructed of local stone, with ornamental brick dressings; the roof being covered with coloured ornamental tiles. The design is furnished by Mr. James Castle, of Oxford.

**Brighton.**—At the recent county sessions, the committee for building a County Lunatic Asylum reported that they had obtained tenders for a loan of 52,500l. in instalments from the London Life Assurance Society, at 4l. 10s. per cent. per annum. They had accepted a tender for building the asylum from Messrs. Rees and Ayres, of Dover, for 86,000l. and 800l. additional, the cost of making the external walls (above 9 inches) hollow, to keep them from humidity and dampness. The contractors had entered into security of 5,000l. for the due performance of their contract: The report was adopted.

**Bridgnorth.**—The new public hall has at length been completed, and fitted up with gas fittings by Mr. Gill. The room is still very damp, and will not be fit for opening for some time.

**Bristol.**—The foundation-stone of the Wesleyan Day Schools, in course of erection on the site formerly occupied by the Circus, North-street, was laid on Tuesday last week. They are to be upon a somewhat extensive scale, accommodation being provided for 600 children, including a large number of infants. The cost of the building will be upwards of 4,000l. a considerable portion of which has been contributed by the Budget family. Nearly the whole amount has already been obtained. The building will be in the Tudor style; the walls of Pennant stone, with freestone dressings. The ground-floor will contain a school-room for 200 infants, and an industrial school for girls. A large class-room, fitted up with a gallery, is attached to each school-room. A stone staircase leads to the first-floor, which is occupied by a school-room, 60 feet by 31 feet, for the accommodation of about 400 children of both sexes. Two large class-rooms, fitted up with galleries, open into this room. A residence for the master forms part of the building. There will be a playground in front of the schools, about 200 feet long by 40 feet in width, covered in at either end and fitted up with swings. The architects are Messrs. Foster and Wood. The contractors are, for the mason's work, Mr. John King; for the carpenter's work, Mr. Thomas Morris; for the tiler's work, Mr. James Dimint; and for plumber's work, &c. Messrs. Gibbs and Thatcher.

**Coalbrookdale.**—The Coalbrookdale Company had brought before them at their last meeting a plan for suitable buildings for a library, reading and news room, &c. for the members of the local Literary and Scientific Institution. The plans were approved of, and have been placed in the hands of the architect. The necessary funds for the erection will be supplied by the firm.



**Birkenhead.**—Negotiations are said to have been going on between the county magistrates and the Birkenhead commissioners with reference to the erection of a new bridewell in the township, and the commissioners, it is also said, will recommend, at their next monthly meeting, the erection of a town-hall and bridewell on the vacant piece of land on the south side of Hamilton-square. The plans are said to be from the office of Mr. L. Horoblow.

**Leeds.**—The opening of the covered market just erected in Vicar's Croft, took place on Thursday in week before last. The building, so far, is in the Tudor style. The designs were prepared by Mr. Charles Tilney, late borough surveyor, and improved by Sir Joseph Paxton. It has been erected by Mr. George Nelson, of Leeds, under the direction of the present borough surveyor, Mr. Filtiter, and is constructed almost exclusively of iron and glass, in the manner of the Crystal Palace. The building covers an area of 4,040 square yards, being 300 feet in length by 132 in width, and 35 in height, the west front running parallel with Vicar-lane, the south end with Kirk-gate, and the north end with Ludgate-hill, the eastern side fronting the wholesale market, to the east. It contains forty-four outside and thirty-seven inside shops, and forty-five stands, the interior being lighted up at night by 200 lamps in clusters around 196 iron pillars. A glass screen surrounds the building above the shops, and the entire space is covered in by three longitudinal roofs. A gallery can be constructed at a slight additional cost. There are seventeen entrances, including three at each end, which are closed by large ornamental gates. The contract was let to Mr. George Nelson, for 10,854*l.* The total cost, up to the present time, has been 13,899*l.* the extras being 2,392*l.* besides other items amounting to 685*l.*

**North Shields.**—The private drainage in North Shields, says the local *Gazette*, is progressing rapidly under the direction of the borough surveyor. Upwards of two thousand houses have now been drained, and those portions of the town which most required drainage, namely, Milburn-place and the Low-street, have been completed with a few exceptions. The village of Tyemouth also has been got through.

**Wigan.**—The first stone of a new Wesleyan school, in the Gothic style of architecture, to hold 300 scholars, was laid on Wednesday in last week, at Lamberhead-green, near Wigan. The school is to be called the Atherton Wesleyan School. It is intended to erect a chapel adjoining the school at a future period. The architect is Mr. Wilson, of Bath.

#### CHURCH-BUILDING NEWS.

**Richmond.**—The foundation-stone of the proposed new church on Richmond-hill was laid on Easter Tuesday, by C. J. Selwyn, Esq. Q.C. It is situated on a beautiful site, the gift of the late Mr. W. Selwyn, whose intentions have been liberally carried out by his son. The architect is Mr. G. G. Scott; the builders, Messrs. Piper and Son, of Bishopsgate-street. The church, when completed, will seat 950 persons on the floor, and consists of a nave and two aisles, chancel, terminating in an apse and side chapels, and a noble tower and spire, 197 feet in height. The style is the later period of the Early English; the material Kentish rag-stone, with Bath stone of a hard quality from the Box tunnel. The contract is for 8,175*l.*; but this does not include the upper stories of the tower and the spire. The principal feature is the west front, with its centre doorway and large circular window, the tower being incorporated in the church on the north-west angle. The church is well situated for the wants of the locality, and it is hoped will prove an advantage also to the numerous strangers who flock to this beautiful hill on Sundays. Upwards of 5,000*l.* have been subscribed; but much more is required for the completion of the work.

**Wilsford.**—On 13th inst. the foundation of the restored parish church of Wilsford-cum-Lake was laid by Mr. Loder, of Wilsford House, who has undertaken at his own expense to take down and rebuild the old church, under the superintendence of Mr. T. H. Wyatt, the diocesan architect.

**Kettering.**—The organ of Kettering church has been removed from the west gallery, and placed in the chancel near to the choir. There is now no impediment in the way of throwing open to view the western window, which, too, as seen from the interior, through the second story of the tower, would increase the perspective of the church.

**Bromsgrove.**—A numerous attended meeting of the ratepayers and inhabitants of Bromsgrove was held at the Town-hall, on Wednesday in last week, for the purpose of receiving the report of the committee appointed to take steps for the proposed restoration of the parish church, and to authorise the vicar and churchwardens obtaining a faculty for that purpose, both of which objects were unanimously agreed

to by the meeting. The restorations will cost upwards of 4,000*l.*

**Bedminster.**—A new church will, we understand, be shortly commenced near Bath-bridge, in the parish of Bedminster.

**Stapleton.**—The parish church of Stapleton, rebuilt by the late Bishop of Gloucester and Bristol, was consecrated on Wednesday in last week, by the Bishop of Oxford. The new church stands on the site of a church of ancient date, the plan of which comprised chancel, nave, and western tower; but, with the exception of the tower, which was heavy and low, no part of the original structure remained, having been rebuilt in the debased style of the eighteenth century. The new structure occupies the space of the original plan, besides a considerable extension laterally and at the west end. The plan consists of chancel, north chapel, nave, north and south aisles, western tower, and north porch. The following are the several dimensions:—Chancel, 35 feet long by 30 feet wide; chapel, 22 feet by 13 feet; nave, 68 feet by 21 feet; aisles, each 68 feet by 14 feet; tower 14 feet 6 in. by 14 feet; porch, 10 feet by 9 feet 9 in. The main walls are 2 feet 6 in. thick; and the tower, 3 feet 6 in. and 4 feet. The material used is the local Penant sandstone, of a blue tone of colour, and the several dressings are from quarries in the neighbourhood of Bath. The style is Middle Pointed, of a character more than usually ornate. The nave is separated from the aisles on either side by an arcade of five bays. The great east window is of five lights, the mullions and jamps enriched with small shafts of Devonshire marble. The side walls of the chancel are pierced with two-light traceried windows, the south aisle wall with five three-light windows and two of four lights in the gables; and the same arrangement occurs in the north aisle, with the exception of the second bays where the porch occurs. These windows are filled with tracery of varied character. The western tower forms the principal entrance through a carved doorway. The tower is lighted by a three-light window, which, owing to the unusual importance given to the doorway under, is dwarfed in proportion. The face of the walls (except the chancel) is stuccoed and coloured. All the roofs are acutely pitched, and as there is no clerestory the height of the nave and aisles is nearly the same. The roofs (except the chancel) are formed of stained and varnished deal, and covered with boarding. The chancel roof is carved in English oak. The east chancel window is filled with painted glass by O'Connor; the subject of the Crucifixion occupies the upper part, and below are subjects illustrating the life of our Lord. The western tower window is by Hagman, and forms a special memorial to the founder by the inhabitants of Stapleton—a kneeling figure of the late prelate being represented offering up a model of the restored church. The large four-light window at the east end of the south aisle is the work of the Misses Monk; the subject is the Adoration of the Magi, with angelic figures in the tracery over. The other windows in the south aisle are also the work of the Misses Monk, assisted by Mr. Bell, of Bristol. The centre area of the nave and aisles is floored with red Staffordshire tiles, the chancel floor with Minton's coloured tiles, the sanctuary with encaustic tiles, the patterns enclosing emblematic figures. The seating throughout is simple, and formed entirely of English oak, affording accommodation for nearly 500 persons. Externally the chief feature is the tower with spire, rising to a height of 170 feet. A greenish slate is used for covering the roofs. A low dwarfed wall surrounds the churchyard. The architect was Mr. Norton; the clerk of the works, Mr. Wilkinson. Mr. Stamp, of Bath, was the contractor for stonework; Mr. Hughes, of Bristol, for woodwork; Mr. Canter, for slating and plastering; Messrs. Edbrooke and Leaman, for smith's work; and Mr. Gibbs, for plumbing. The wood and stone carving was executed by Mr. Farmer, of London. The chancel and side chapel were rebuilt by Mr. J. G. Smyth, of Ashton Court, under the superintendence of Mr. Arthur Way.

**Melton Mowbray.**—The rectory at Pickwell, Melton Mowbray, which has been building for some time past, is at length completed. It is built of stone, in the Tudor style. The architect was Mr. C. H. Edwards, of London. The builders were Messrs. Tyler, Smith, and Kitchen.

**Market Harborough.**—A meeting was held in the Townhall, on the 18th inst. to consider as to making various alterations in the church, when the report of Mr. Law, the architect, was read; and the alterations, including the restoration of the whole of the body of the church, at a cost of 420*l.*; and of the stonework, arches, piers, cleaning and oiling timber, at a cost of 160*l.* were unanimously agreed to.

**Ipswich.**—Tenders have been received for the repair and restoration of the tower and the north and south aisle roofs of Thurston Church, ranging from Ringham, Ipswich, 448*l.* to Rednall, Woolpit (accepted), 294*l.* 0*s.*

#### STAINED GLASS.

**Worcester.**—Three stained-glass windows have been presented by Mr. Perrins, of this city, to the church of St. Nicholas, and are put up at the east end. The windows north and south are each a single light, and the central one is circular. The subjects are allegorical. Mr. G. Rogers, of this city, executed the work.

**Bebington.**—A window, according to the *Chester Chronicle*, has been put up at the east end of Bebington church, in memory of a daughter of the rector, who was accidentally killed by poison. The centre east window was selected, and the committee determined to unite the great truths of the Christian faith with the more peculiar subject of the memorial. It is a large window,—very late Perpendicular. The death and ascension of our Saviour were fixed on as the lower and upper centre subjects, occupying three lights each. The four side lights were devoted to the memorial. They represent the life of a female Christian, in subjects from Scripture. The design of Mr. Wailes, of Newcastle, was selected from others, and on Saturday before last, the anniversary of Miss F. Feilden's death, he put in the window. It is in the pictorial style of the date of the window, the reign of Henry VIII. in some respects modified by modern improvements.

**Doncaster.**—A window is being put up at Christ Church, Doncaster, to the memory of the late Mr. G. Jarratt Jarratt, the late patron. The new eastern window will be 22 feet 6 inches high, and 11 feet in width; that is, the space occupied by the stained glass. It will consist of five lights; the centre one being 2 feet wide by 14 feet 10 inches; the four lesser lights will be 1 foot 8 inches in width, and 13 feet 10 inches high; the tracery forming a large wheel at the top of the smaller lancet window, filled in with three trefoils. The centre and two side lights are each lancet windows; and the two side ones support the wheel. The stained glass will be from M. Caponnière. The stonework is nearly finished by Messrs. Jenson, and the cost is to be defrayed by Mr. George Jarratt, the patron of the living.

**Blackburn.**—A memorial window has just been put up at St. John's Church, Blackburn, consisting of a painting of the Nativity, and figures of St. Paul and St. Peter, with the usual emblematic designs. The work has been executed by Mr. Baillie, of London. The communion-table has been surrounded by new railings, carved, in imitation of antique oak, the present of Mrs. Marlen, wife of the incumbent. There are also a new pulpit and reading-desk, executed in a corresponding style, the expense of which will be defrayed by subscriptions. The carved work on the pulpit, reading-desk, and communion rails, has been executed by Mr. Shaw, of Saddleworth.

#### CRUEL AND UNWHOLESOME SLAUGHTER-HOUSES.

THE able observations in a recent *Builder* on secret or public slaughter-houses have not only respect to wholesomeness (for what animal killed in a feverish state, and after torture, can have or bequeath its flesh in a proper state?), but to humanity. And will it be thought bitter or malicious to say that those who are knowingly and systematically indifferent to the sufferings of animals deserve much less pity for the "Nemesis" of their sufferings, from the injurious condition in which the flesh comes before them?

At least twenty-five years ago the eligibility of public abattoirs (slaughter-houses), as in Paris for some time before, was pressed on the English public. The old slaughter-houses have often had such cruelty practised in them by irresponsible men—too often of brutalized feelings—that it is actually "a shame to speak of the things that are done in secret." But it is a proved fact that sheep thrown down into underground cellars have had their legs broken, and have been left in that state, some twenty-four hours, till killed. No rational persons would suppose that conducive to wholesomeness. It even seems a useless piece of cruelty to pen them in the slaughter-house whilst they see their fellows killed.

But of all disgraces to a humane age towards animals, the CALF torture is perhaps the worst. The treatment of this poor unoffending animal, to pander to an ignorant or else very unprincipled taste, which called for the animaladversions of *Smollett* in "Peregrine Pickle," who described the animal as "paralytic," as in fact it is by the ante-death sufferings; and the flesh (denounced by physicians as unwholesome), in this unnatural state, as resembling "a fricassee of kid gloves," was brought before the public several years ago in the *Builder*, and elsewhere; and it was said, in the former case, that, after discussion in the local papers, the butchers at Derby had come forward with a wish to give over the present cruel practice. Every humane man might well put himself under a voluntary anti-veal-consuming pledge till the detestable misusage is removed from a principled age or country.



## Books Received.

## VARIORUM.

PENDING an opportunity to speak at greater length, we would mention with commendation a work entitled "Villas and Cottages: a Series of Designs prepared for execution in the United States," by Mr. Calvert Vaux, architect. It is published by Harper, New York, and Sampson Low, London; and is illustrated by 300 engravings. The plans are, for the most part, very good, and some of the designs are excellent. The letter-press, too, is instructive and sensible, and we can safely recommend the work, even to English buyers.—Another American work is before us, "Designs for Parish Churches, in the Three Styles of English Church Architecture," by Mr. J. Coleman Hart, architect (Dana and Co. New York). It is exceedingly well got up, and has more than 100 illustrations, very well executed. In this country, where Parker's last edition of Rickman and Brandon's "Parish Churches" and "Analysis" are obtainable, it is not likely to have a large sale, but it serves to show that efforts are being made in America, and it will doubtless effect good there.—

"Specimens of Geometrical Mosaic, manufactured by Maw and Co. of Bentham, near Broseley, Shropshire; from patterns designed and arranged by Mr. Digby Wyatt, architect, London," is an elaborate and useful kind of trace circular, containing both designs in colours, and instructions as to laying down mosaics, as well as lists of prices, charges for carriage, &c.—

"Report of Captain W. S. Moorsom, G.E. on the adaptation of the Screw to locomotive Engines for the ascent of steep Gradients on Railways, patented by G. Grassi, of Milan," is another printed circular. Captain Moorsom's Report speaks favourably of M. Grassi's invention, which, indeed, the captain seems to have himself matured in detail, on condition that he is to carry out the patent, which is intended to provide a cheap substitute for expensive tunnels in mountainous districts. The screw consists of several powerful twists round a cylinder, and winds along a midway provided with discs or rollers, revolving horizontally as the screw winds across them. The same mode of progression, we presume, is intended to be adopted in descent as in ascent of steep gradients, although nothing is said of this in the tract. Messrs. Grassi, Velina, and Co. of Southampton-street, Strand, are the London publishers of this little tract, which contains detailed engravings of M. Grassi's patent as matured by Captain Moorsom.—"Orr's Circle of the Industrial Arts" (Orr and Co. Amen-corner, Paternoster-row, publishers), has reached the fifth part, which contains, as do the third and fourth, a good deal of matter interesting to architects and builders in reference to construction in iron, ornamental ironwork, and iron manufacture generally. Copper is the next subject which is treated of.—

"A Treatise on Road Legislation and Management," by Mr. Richard Bayldon, road surveyor, has just been published by Messrs. Longman and Co. in which suggestions are given for the payment of turnpike trust debts, and also twelve model clauses certified by Mr. Tidd Pratt, and proposed for adoption in all new turnpike-road Acts, together with reasons for removing toll-bars from encouraging and enforcing flat broad wheels for heavy carriages; also, some practical remarks on toll management and road repair. Mr. Bayldon is a road reformer, of whom we have before spoken, and what he has to say on such subjects deserves consideration.—A "Proposed Plan of a Subaqueous Main Sewer," by Mr. Burch of Enfield, is set forth in a tract assuming the form of a communication addressed to the Government Referees on the Metropolitan Drainage Plans. Mr. Burch proposes to lay down the main sewer in the bed of the Thames, by help of a "portable vertebrated dam," which he describes.—Amongst educational books received may be mentioned, "An Elementary English Grammar," by Viscount Downe (Longman and Co.), prepared at first as an easy grammar for his lordship's own children, and for village schools.—The same publishers have issued a convenient little botanical companion in field scampers, titled "The British Botanist's Field-book, a Synopsis of the British Flowering Plants," by A. P. Childs.

## Miscellanea.

**BALMORAL.**—In mentioning last week the employment of cockle-shells in floors by the late Mr. Cubitt to deaden sound, by a slip of the pen "Balmoral" was written for Osborne. Mr. Cubitt had nothing to do with the works at Balmoral, except supplying by contract the cooking apparatus for the kitchen, some of the grates, and the hot-water pipes and apparatus for baths. Mr. William Smith, the architect of Balmoral, asks us to correct the statement, in fairness to him, and we do so willingly.

**DESTRUCTION OF AN EMBANKMENT.**—Recent high floods have done serious injury to the permanent way of the South Yorkshire Railway, at Bramwith. For a length of at least 20 feet the earth, rails, sleepers, &c. were torn up and carried into the new river. Relays of men for night and day were set to work to reneite the line.

**A CRYSTAL PALACE AT VIENNA.**—The construction of a Palace of Industry for the Vienna Exhibition is about to be commenced. It will be situated in the Schwarzenberg garden, in that city. The exhibition does not take place until 1859.

**FREE LIBRARY, PICTURE GALLERY, &c. FOR BALTIMORE.**—Mr. Peabody, the American merchant, has recently presented to the city of Baltimore the sum of 300,000 dollars (to be increased ultimately to one million), for the establishment of an institution comprising a free library, musical academy, and picture gallery.

**DISCOVERY OF A ROMAN VILLA.**—In Denny-park, Hurstpierpoint, according to the *Brighton Gazette*, the remains of a Roman villa have been brought to light, near the Roman camp on Wolstanton-hill.

**RAILWAY TRAFFIC.**—The traffic returns of the railways in the United Kingdom for Easter week, amounted to 440,291, and for the corresponding week of 1856 to 407,375, showing an increase of 32,916. The gross receipts of the eight railways having their termini in the metropolis amounted to 187,023, and last year to 170,364, showing an increase of 16,659. The increase on the Eastern Counties amounted to 4,199; on the Great Northern, to 357; on the Great Western, to 2,267; on the North-Western, to 2,066; on the Blackwall, to 817; on the Brighton, to 3,156; on the South-Western, to 1,092; and on the South-Eastern, to 3,157; total, 16,459. The receipts on the other lines in the United Kingdom amounted to 253,267, and for the corresponding period of 1856 to 236,811; showing an increase of 16,457.

**ROYAL INDUSTRIAL EXHIBITION OF BELGIUM.**—Last week's *Gazette* contains a copy of a despatch from the British minister at Brussels, enclosing an official notice that "An exhibition of designs, models, and finished works, connected with the industrial arts, the productions of Belgians or foreigners, will be opened at Brussels on the 15th August, 1857," by the Brussels Society for the Encouragement of Industrial Arts.

**THE ART-UNION OF LONDON.**—The annual general meeting of this important Association will be held in the Theatre Royal, Haymarket, on Tuesday next, the 28th instant, at eleven for twelve o'clock, to receive the report of the committee, and distribute the prizes. Lord Montagu will preside.

**PRESERVATION OF LEAVES.**—Feeling the necessity of studying foliage from natural types, I have made a collection of leaves, &c. for that purpose, but I find that in a very short time they become so shrivelled as to lose a deal of their original shape, or are so crisp as to break whenever they are touched, and mounting does not remove the difficulty. I am told that botanists have a way of preparing leaves, by which not only the beauty of form is retained, but the colour also. Now, if one of your numerous correspondents can give me any information on this subject, it will confer a great favour upon—R. W. H.

**GASWORKS.**—A return has been published in England gasworks established by Act of Parliament in England and Wales, with various particulars, such as the charge per foot, the average quantity of gas evolved from a ton of coal, the illuminating power, and the cost. The London Gaslight and Coke Company charges from 4s. to 4s. 6d. per 1,000 cubic feet (Newcastle coals), and 6s. for canal gas. The average quantity evolved is 9,000 cubic feet from Newcastle, and 10,000 feet from canal coals; 5 feet of Newcastle gas is equal to 12 candles, and 5 feet of canal gas equal to 26 candles. The Imperial Gaslight and Coke Company charges 4s. 6d. per 1,000 feet, and produces 9,518 feet of gas from one ton of coal. The quantity of gas evolved in London varies from 8,500 to 10,000 feet from one ton of coal, and the illuminating power from 12 to 14-2 candles. The Phoenix Company uses Newcastle and canal coals mixed.

**HIGHLAND ROADS AND BRIDGES.**—The forty-third report of the Commissioners of Highland Roads and Bridges to Parliament has just been issued. It states that "the operations of the commissioners during the year 1856 have been almost confined to the maintenance of the works in their ordinary state of repair, although a considerable proportion of the expenditure is referable to the execution of repairs, the necessity for which occurs only at long intervals." The total amount of assessment payable in 1856 by the several counties, under the operation of the Road Repair Act, to the commissioners, was 4,575l. 9s. 7d.: in 1855 the sum was 4,798l. 10s. showing a decrease last year of 223l. 0s. 5d. At December 31st last year, the balances to the credit of the general funds and the different toll accounts was 1,488l. 6s. 10d.

## MESSRS. CLARK AND CO.

15, Gate-street, Lincoln's Inn-fields.  
GENTLEMEN,—After eight years' trial of your Patent Revolving Shutters, erected here, I can safely pronounce them most effectual in their action, and they have given me the utmost satisfaction.  
I am, Gentlemen, yours truly,  
Geo. Downe.  
155, Leadenhall-street, August 7th, 1856.

## TENDERS

For Talbot Cottage, Glossop. Messrs. Haddfield and Co. architects:—

J. Evans, Macclesfield	£3,580 0 0
Hunt, Ramsgate, and others, Glossop	3,295 4 0
Ellis and Thorpe, Glossop	3,267 17 0
T. Holroyd, Padfield	3,117 18 0
Emton and Oakes, Glossop	3,039 18 7
Messrs. Robinson, Hyde	3,000 0 0
Farrell and Brownall, Manchester	3,000 0 0
T. Tully, Manchester (accepted)	2,840 0 0
Ollershaw, slating and plastering	270 15 8
Ollershaw, plumbing, glazing, and painting	369 3 2

For alterations and additions to Peele's Coffee-house and Hotel, Fleet-street, for Mr. Johnson. Mr. W. Finch Hill, architect:—

Lawrence	£1,163 0 0
Longmore and Co.	1,080 0 0
Elston	1,040 0 0
Patrick	1,040 0 0
Hill (accepted)	894 0 0

For erecting a pair of semi-detached houses in Church-road, Southgate-road, for Mr. J. F. Lovering. Mr. F. G. Widdows, architect:—

Rivett	£1,678 0 0
Lewis	1,300 0 0
Sargeant	1,146 0 0
Praly	1,177 0 0

## TO CORRESPONDENTS.

C.K. (apply to a shipping agent)—G.B.—S.R.—G.D.—F.H.—P.—M.—H.—W.—Westminster Improvements (competitor should inquire at the Office of Works)—B.—E.H.—C.G.—W.P.G.—St. Thomas—J.L.—Y.Z. (we cannot recommend)—J.C., Borough apply at the Board of Works.—H.B. (list of the tenders would be more satisfactory; but cannot be enforced)—J.C.—R.M. (below our limit)—G.H.M.—G.A.—A.M.G. (the request could scarcely be enforced, but should be complied with)—F. and Co.—J.R.—H.W.—W.H.—P.R.—J.A.G.Y.

"Books and Addresses."—We are forced to decline pointing out books or stating addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

## ADVERTISEMENTS.

**THE ENGINEER** of Friday, 24th April, contains descriptions of Gray and Hall's Improvements in the Manufacture of Iron and Steel, Watson and Hall's Improvement in Spinning, Buchannan's Mode of Propelling Vessels, White's Nail Machinery, Moulton and Clark's Tilling Machine, Wilson's Steam Engine Valve, White's Apparatus for Distilling Oil from Petroleum, Original Articles on Railway Accidents, Abridgement and Subdivision of Labour in Agriculture, Colonization of the Desert, School of Art, &c. &c. Abstracts of Mr. Robert Hall's Paper on Electric Motive Machines, and Dr. A. Smith's Paper on the Royal Institution of Great Britain; Reviews of New Works; Brussels Universal Exhibition of 1855; New Reading Room of the British Museum; Committee of the Metropolitan Board of Works; Report on Embankment of the Thames; Patent Journal, containing Timber and Metal Markets; Trades, Birmingham, Wolverhampton, and other parts of the Eastern Counties; and all the Engineering News of the Week. Price 6d.; stamped, 7d. BEINARD LUXTON, Publisher, 31, Strand.

**A LOCAL BUILDERS' PRICE-BOOK,** price 5s. is now ready, which has been compiled chiefly by upwards of twenty practical builders, and may be had post free, of Mr. JAS. ACTON, Builder, Broad street, Nottingham, by the remittance of sixty postage stamps, or post-office order.

**BRICK-MAKING.**—A Pamphlet containing Two Papers, to which the Society of Arts awarded their Silver Medal, forwarded on receipt of fourteen postage stamps. HUNPHREY CHAMBERLAIN, Kempsey, near Worcester.

**INSTRUCTIONS** given in Measuring and Estimating all descriptions of work, with other valuable information. Terms moderate. Sent on application to Mr. ANDERSON, care of Mr. R. H. Lindsey, 19, Catherine-street, Strand.

**A CARD.**—Mr. THOMAS HARRIS, Architect and Surveyor, late of No. 38, Regent-street, W. has removed to his new offices at No. 30, CHARLES-STREET, Berkeley-square, W.

**TO ARCHITECTS, BUILDERS, &c.**—Quantities taken out, and Work Measured up, by J. H. BEYSON, Surveyor, 57, R. Upper-street, Lambeth.

**ARCHITECTS, ENGINEERS, AND SURVEYORS** can be IMMEDIATELY SUPPLIED with COMPETENT ASSISTANTS (temporary or otherwise). Those only recommended whose character and qualifications can be guaranteed. The registry is open to employers, or those furnished therewith (free), on application to Messrs. RICHARDS and CO., 4, Trafalgar-square, London.

**COMPETITION DRAWINGS.**—Messrs. RICHARDS and CO., having a large and experienced staff of competent draughtsmen, are enabled to execute ARCHITECTURAL and ENGINEERING DRAWINGS, in perspective, either coloured or in pencil, in the most judicious and artistic style of art. Also general drawings, specifications, and estimates complete, from scaled sketches and notes.—4, Trafalgar-square, London.



# The Builder.

VOL. XV.—No. 743.



UR especial art is so much interested in all that tends to make a knowledge and love of art general, that we have for some years past given a prominent position to the proceedings of the Art-Union of London, which was established with that object mainly in view, and has admittedly effected it to a considerable extent. The annual meeting was held as usual on the last Tuesday in April (the 28th), in the Theatre Royal, Haymarket, when the Right Hon. Lord Monteagle presided, and a large audience testified to the interest felt in the proceedings. On the chair being taken,

Mr. Godwin, Honorary Secretary, read the following

## REPORT:

The council of the Art-Union of London, in making their report to the subscribers for the twenty-first time, would recall to the minds of those of the present body who have not watched its progress from the commencement in 1836 (when a subscription of 4897, only, was raised with difficulty), the increased appreciation of art and artists on the part of the public now as compared with what it was then, the amount of money at this time annually expended on works of modern art, and the growing perception of the importance to the country of widely-spread art-education. Not many years ago the sale of a picture at the exhibition of the Royal Academy was a rarity, whereas now, at that and the other established exhibitions of works of art in the metropolis, purchases to the extent of thousands of pounds are made each season, irrespective of the sums spent by the prizeholders of the Art-Union. At the three exhibitions of oil-pictures now open,—the British Institution, the Society of British Artists, and the National Institution at the Portland Galleries,—purchases to the amount of 9,1037, have already been made by the general public.

The Art-Union of London has played its part, and an important one, in producing this state of public opinion. Addressing itself by its popular character to the masses, establishing local secretaries, not merely throughout the kingdom and its dependencies wherever an Englishman is to be found, but in various other countries, and disseminating far and wide its prints, bronzes, statuettes, reports, and catalogues, it has aided materially in creating the present widely-felt interest in the fine arts. Since the establishment of the Art-Union it has collected and distributed for the benefit of art and artists more than a quarter of a million of money, which otherwise would not have been so applied, and has led to the expenditure in the same channel of very much more.

The subscription of the present year amounts to the sum of 13,2187. 9s.

Each subscriber is entitled to, and many have already received two engravings,—one of "The Piper," by Mr. Frederick Goodall, A.R.A.; and one of "The Clemency of Cœur-de-Lion," by Mr. Cross. For next year a painting, by Turner, of "Belshazzar's pictures conveyed to the Church of the Redeemer, in Venice," has been engraved by Mr. T. W. Willmore, A.E.R.A.; and the prints will be ready for delivery in the spring.

The volume of etchings prepared for the Association by the Etching Club is completed, and will be found very interesting. Copies of it, as prizes, will form part of the present distribution.

The series of wood-cuts, illustrative of the works of deceased British painters, is being proceeded with, and will be appropriated hereafter. It comprises pictures by Sir W. Allan, Barry, Bird, Blake, Constable, Collious, Copley, Fielding, Etty, Gainsborough, Haydon, Von Holst, Lawrence, Moreland, Romney, Stothard, Turner, Wilkie, and others.

The council have the satisfaction of announcing, that the popular picture, "The Sands of Rainsgate," by W. P. Frith, R.A. the property of her Majesty, is being engraved by Mr. Sharp, for the Association, and will be delivered to all subscribers of a future

year. They have also arranged for the production of an engraving by Mr. Willmore, after the picture by Turner, in the National collection, known as "Childe Harold's Pilgrimage."

It is sometimes urged as an objection to the Art-Union, that its productions, being issued to large numbers of persons, become in consequence common and valueless. This is not the feeling in which works of art should be viewed. It is not so in literature: a book is prized for the instruction it contains, or the delight it affords; and the value of it as a work of mind, is in no degree lessened because copies are multiplied in thousands, and the book is placed within the reach of every one. The beauty of the woods and the glory of the sea are common to all, but are none the less surely beauty and glory.

Arrangements have been made with Mr. Thomas Battram for the production, in Parian statuary, of Gibson's fine group, "Venus and Cupid," with the kind concurrence of the Earl Yarborough, to whom it belongs.

In the department of bronzes, Mr. Stephens has executed for the Association a group, "Mercy on the Battlefield," and is now producing it in bronze for distribution as prizes.

The medal, commemorative of Sir William Chambers, has been completed by Mr. B. Wyon, and a certain number of examples will be allotted as prizes to-day.

In the Report of a committee appointed by the Royal Institute of British Architects to examine the Soulagers Collection, now in this country, and to advise as to the expediency of recommending the Government to purchase it for the nation, honourable testimony is borne to the long-continued endeavours of the Art-Union of London, in the face of difficulties, to encourage the production of artistic bronzes in England.

The extraordinary collection of decorative objects of utility, of the fifteenth and sixteenth centuries, referred to, shows, in a striking manner, the extent to which the best obtainable art was then applied to the most ordinary objects, whether a mirror-frame, a pair of bellows, an earthenware dish, or the dining-room fire-dogs. Nothing was deemed too trivial to occupy the highest talents. Wanting in some important qualities as the works of this period may be, the Soulagers Collection is nevertheless one of extreme value, and should unquestionably be purchased by the Government as a means of instructing the public mind, and enlarging the field for art-application. It has been often urged that taste in manufactures, which gives a country the world for a market, is only to be expected where the fine arts are properly encouraged.

Amongst the current art questions which occupy attention, the determination of the best site for the National Gallery is not the least interesting. The commission appointed to take evidence on the subject, and which is now sitting, doubtless feel the importance of a central situation, easily accessible from all parts of the metropolis, and it is to be hoped will not remove the national collections from amongst the workers, unless the most conclusive reasons for the change are given. The widest facilities for the contemplation of noble works of art should be afforded to the people; access to collections should be made more easy, not more difficult,—inducements to visit them should be increased, not lessened.

The want of public collections of pictures, and other works of art, in our provincial towns, before urged by your council, is still a discredit to us, calling for removal. Nearly every principal town in France possesses its collection, open to the public at stated times, and largely resorted to, with great advantage to the country, both commercial and social.

Art gives pleasures that never pall, and, amidst the bustle and combat of every-day life, will brighten the passing hour, and exalt the thoughts and feelings. "That pleasure which is at once the most intense, the most elevating, and the most pure, is found in the contemplation of the beautiful."

Of the amazing number of noble works of art possessed by private individuals in Great Britain, the Exhibition of Art Treasures in Manchester, to be opened to the public in a few days, will afford astounding evidence, and will give such an opportunity for the study of the history and progress of the arts, the characteristics of the various schools, the position of modern English art, its strength and its weaknesses, as never before was provided.

The Museum of General Art, too, which has been gathered together there from all parts of the country, will illustrate in a remarkable manner every sort of art-manufacture and decoration,—working in metal, ivory, glass, and clay; carving, enamelling, and mosaic work. Sculpture, too, will be well represented, and, at the request of the committee, some of the bronzes issued by the Art-Union will form part of the collection. It may reasonably be expected that this mar-

vellous exhibition will give an impulse to many branches of art, while it will afford wholesome delight to thousands.

Acting upon the principle which has always guided them,—that of spreading abroad the works issued by the Association,—your council gladly accepted an invitation to place all the Society's porcelain statuettes in the Ceramic Court in the Crystal Palace. The valuable and beautiful collection there, affords many striking instances of the importance to a country, even in a pecuniary point of view, of cultivating taste and bringing art to the aid of its manufactures. The attention paid to the arts in France from the time of Louis XIV. the establishment of the royal manufactures of tapestry, furniture, and china, the organization of drawing-schools, and other arrangements with the same end in view, have made Paris the manufactory for the world of objects of decorative utility.

From Australia, as heretofore, the council have received large lists of subscribers, and it is noteworthy that in that distant land an association has been formed under the title of "The Victorian Society of the Fine Arts," the main feature of which is an Art-Union.

The council have to lament the loss by death of two valuable colleagues, in the persons of Mr. Serjt. Thompson and Mr. John Britton; and two other vacancies have been caused by the retirement of Mr. C. Harrison and Mr. W. J. Smith. In their places, Mr. Thomas Grissell, Mr. Robert Hudson, the Rev. Edward Coleridge, and Mr. Henry Thomas Hope, have been elected.

The reserved fund now amounts to the sum of 7,6957.

A full statement of receipts and expenditure will be hereafter appended to this report.

The accounts have been audited as usual by two members of the general body of subscribers, Mr. J. Jones and Mr. J. B. Scott, whom the council beg leave to thank, and three members of the finance committee.

The sum set apart for prizes, to be selected by the prizeholders themselves, will be thus allotted, viz.:

26 works at .....	£10 each.
30 " " " " " "	15 " "
24 " " " " " "	20 " "
24 " " " " " "	25 " "
16 " " " " " "	30 " "
14 " " " " " "	35 " "
6 " " " " " "	50 " "
5 " " " " " "	60 " "
3 " " " " " "	75 " "
2 " " " " " "	100 " "
1 " " " " " "	150 " "
1 " " " " " "	200 " "

To these are added:—

- 12 Bronzes of "Her Majesty on Horseback."
- 1 Bronze of "Satan Dismissed."
- 3 Bronzes of "Mercy on the Battlefield."
- 2 Bronzes in relief of "The Duke of Wellington entering Madrid."
- 10 Vases in iron.
- 50 Porcelain Statuettes, "The Stepping Stones."
- 10 Porcelain Statuettes, "The Dancing Girl reposing."
- 10 Terra Cotta Statuettes of "Thalia."
- 20 Silver Medals of Fluxman; and
- 30 Silver Medals of Sir Wm. Chambers.
- 450 Impressions of the Lithograph, "The Supper Scene."
- 250 of the Mezzotint of "Tyndale translating the Bible;" and
- 250 Volumes of Etchings.

Making in all 1,250 prizes.

The bronzes, porcelain statuettes, and vases, will be allotted to the first ninety-eight names drawn consecutively at the close of the general distribution. The medals, etchings, mezzotints, and lithographs, will be allotted to the names standing on a hundred and two hundredth in the list preceding and succeeding that of each of the prizeholders, determined as above stated, with a proviso that a prize has not fallen to that number to-day—in that case the prize will pass to the next succeeding name. Notice will be sent to those entitled to the bronzes, statuettes, medals, and prints in the course of two or three days. The other prizeholders will be informed of the result by to-night's post.

The prizeholders of last year purchased from the various exhibitions of the season 160 works of art, to the following amounts, viz.:

From the Royal Academy .....	4989 0 0
The National Institution of Fine Arts .....	1,112 10 0
Society of British Artists .....	1,180 0 0
British Institution .....	217 0 0
Royal Scottish Academy .....	85 0 0
Water-Colour Society .....	577 4 0
New Water-Colour Society .....	228 11 0

\* Edgar Allan Poe.



With the permission of the Society of British Artists, the prizes were as usual exhibited in their gallery to the subscribers and their friends, and afterwards to the general public free and without limitation. It would be unnecessary now to say that not the slightest damage was done, or impropriety committed during the exhibition, but that the fact, in aid of endeavours to obtain for the British public free access to collections of works of art and public monuments, cannot be too often stated. In connection with this question, the desirableness of having the public exhibitions open on the *Saturday* is very generally felt.

The steps now being taken to extend art-education in this country, carrying out views which have been urged for many years by your council, must before long bear good fruit.

The national collections, most valuable means of instruction, are becoming yearly larger and more important. The munificent act of Mr. Sheepshanks, to which the country owes the last addition, deserves to be widely known. Mr. Sheepshanks has presented to the nation his fine collection of 233 paintings and 103 drawings, by British artists, on certain easy conditions, one being that a suitable building, to be called "The National Gallery of British Art," shall be erected, to receive it on or near the estate at Kensington purchased by the Commissioners of the '51 Exhibition, together with any other works of art that may be subsequently placed there by other contributors, as he does not desire that the collection should bear his name.

He has shown his anxiety to protect the interests of artists, by providing that any such engraving or reproduction of a picture that may be made shall be approved of by the artist of the picture, and that he shall be paid whatever sum may be received by the *ex-officio* trustee for the sale of such right. The donor suggests that arrangements should be made, so that the public, and especially the working classes, may be able to see the collections on Sunday afternoons; but this is not insisted on as a condition of the gift. For so good an act, so nobly done, Mr. Sheepshanks deserves the applause and gratitude of every lover of art and admirer of public spirit.

The building is now nearly completed, and the collection will probably be opened to the public before the expiration of the present spring.

In reference to the subject of public galleries, it may be mentioned that the council have had under consideration the practicability of establishing a permanent exhibition in connection with the society. The desirableness of producing artistic works in glass and in porcelain, to be distributed as prizes, has also been under discussion.

The intention of raising a public monument to the Duke of Wellington in St. Paul's Cathedral has been made to afford sculptors an opportunity to distinguish themselves, of which, we do not doubt, full advantage will be taken. Let us express a hope that such a course may be pursued for the determination of the competition as will give to the highest merit the highest reward, and secure for the country a work of art worthy of the object and the age.

Sculptors will soon, probably, be further appealed to, to suggest a design for a memorial of the Great Exhibition of '51. Funds have been provided, and the committee wait only for the consent of Her Majesty to place it in Hyde-park on the site of the building in which the Exhibition was held. Before selecting the design for the Wellington monument, the Government will have to obtain a decision on the projects, now in Westminster-Hall, submitted by British and foreign architects for the public offices and the improvement and decoration of part of the metropolis.

The artistic adornment of cities,—important to the culture of the dwellers therein, to their happiness, to their health,—concerns us nearly, and it is earnestly to be hoped that the occasion will be made to develop the talents of our artists, and to aid in rendering London as eminent as a city, for fitness, beauty, and magnificence as its inhabitants are for skill, energy, and enterprise. To bring this about, such opportunities must be given to artists in our public buildings and elsewhere as may lead them to produce works of high teaching,—noble truths set forth as to awaken noble feelings,—which may serve to convey to posterity a worthy idea of the mind and power of the nineteenth century. Had not Leonardo da Vinci been called upon to decorate the walls of the Dominican Convent of the Madonna delle Grazie, the world would not have had "The Last Supper."

Our Government should keep these matters in view, and consider the importance of developing the artistic talent of the country, and act as if they knew the value of fine works of art.

A love and right appreciation of art on the part of the public will force this on, and to produce this feeling is a main object of the Art-Union of London.

GEORGE GODWIN, } Honorary  
LEWIS POOCK, } Secy. &c.

The Chairman, in moving the adoption of the resolution, congratulated the meeting on the progress of

their association. Twenty-one years ago they started with 400 members, and now their numbers had reached the enormous aggregate of 13,000. He should not long occupy their time, for he knew by experience the impatience of an Art-Union audience, but still he thought it due to the annual meeting to make one or two observations. Their institution was a private institution, but still having the sanction of Parliament, and it was because it was a private institution he thought it was most likely to be of public benefit. As a people's institution it had an immense amount of public sympathy, and he well remembered Dr. Chalmers asserting that public sympathy they had received was enough to hurl back "the foul scorn," as Queen Elizabeth had called it, that the English as a people were indifferent to art. They could turn to Exeter-hall for an evidence of their love for the sister art. They could show the magnificent gifts of Messrs. Sheepshanks, Vernon, and Turner, and they must also admit that something was done by the State. To the State they owed the recent purchase of that master-piece of Paul Veronese, the "Meeting of Alexander and Darius;" and there was, in his opinion, a singular propriety in the circumstance that that picture would be first exhibited in this country amid the tall factory chimneys of Manchester. The returns of the Board of Trade showed a monthly increase of prosperity, and it was no novelty that a flourishing commerce carried arts and civilization in its train. Let them, then, hope that the progress of their wealth and commerce would still be coincident with the progress of art, and that every new year would add fresh strength and numbers to institutions like that whose anniversary they then celebrated. His Lordship concluded by moving the adoption of the report.

Mr. Francis Bennoch, F.S.A. in the seconding the motion, referred to the coming of age of the society, pointed to the formation of an Art-Union at the antipodes, and concluded an excellent speech by showing the value of art to this country.

The report having been unanimously adopted,

Mr. Henry Weekes, A.R.A. proposed a vote of thanks to the council, and the hon. secretaries, and in the course of his observations, expressed his belief that there were few of our younger artists now eminent, who would not acknowledge the advantage they had derived from the Art-Union of London, at critical moments in their career.

Mr. Hurlstone, of the Society of British Artists, seconded the motion, which was carried unanimously.

Mr. Walter Taunton, as a junior member of the council, replied for that body, and in the course of his address, eloquently exhorted those art students who felt within themselves the power of expressing fine thoughts, to persevere in a right course, assured that their efforts would not pass unregarded, and that helping hands were not far off.

In returning thanks, Mr. Godwin dwelt on the apathy of the Government in respect of art, and pointed to the new reading-room of the British Museum, the decoration of which was confined to a blue tint and gilt mouldings; the architect had proposed to fill every panel with a painting, and terminate each rib of the dome with a statue. The Government had not yet learnt that the beautiful was useful. With reference to a passage in the report, he mentioned the extraordinary fact that, at the private view of the two Water-colour Societies, on Saturday last, purchases were made to the amount of 3,500*l*. The speaker referred to the services of the assistant secretary, Mr. T. S. Watson, and concluded by moving a vote of thanks to Mr. Backstone, for his kindness in granting the use of the theatre.

Mr. Lewis Poock, F.S.A. seconded the proposition, having first expressed his thanks, as honorary secretary, for the previous vote; and the resolution being carried, Mr. Sudlow and Mr. Walsh accepted the office of scrutineers, and Miss Marian Whitehead and Miss Stewart having consented to draw the numbers, the distribution commenced. Thanks were afterwards voted to the scrutineers, and to the two ladies, and to Lord Montagu for his admirable address and kind conduct in the chair, and the meeting then broke up.

The following is a list of the principal prize-holders:

200*l*.—Mallett, T. Catherine-street, Lambeth.  
150*l*.—Rhead, —, Twistock.  
100*l*.—Pound, J. Lee, Kent; Sloane, J. Danganon.  
75*l*.—Bouneau, A. Warren-street; Campbell, J. S. Leadenhall-street; Harris, S. Douglas, Isle of Man.  
60*l*.—Bennett, G. L. Hong-Kong; Day, George, Blackheath-hill; Guy, W. 12, Great Turner-street; Self, H. Torrington-place; Smith, N. Great Cumberland-place.  
50*l*.—Bastable, E. Porters; Combs, T. Stafford; Hartley, P. Morecomb; Marlin, Miss M. A. York-road; Powell, T. Walworth; Wells, H. T. Stratford-place.  
35*l*.—Adams, D. Boston, U.S.; Hudson, E. Peckington; Dodd, H. Everswood; Fairclough, T. M. St. George's-in-the-East; Johnson, S. Trinity-square; Johnson, R. A. Loughswallow; Maras, P. Cape Town; Noyes, John,

Nottingham; Oliver, G. Jun. Shotter's-mill; Paton, A. P. Greenock; Robinson, G. E. Newark; Stewart, A. Camdentown; Tilley, J. Hobart Town; Watsnaby, R. Northampton.

30*l*.—Beach, W. H. Manilla; Child, T. Leeds; Coakley, A. J. Bath; Fairfoot, H. S. Doughty-street; Fankes, W. Whitechurch; Gent, F. Daily News; Gough, Mrs. R. D. Willenhall; Hall, W. Adelaide; Irvine, John, Hungerford; Walford, J. W. per Grand Hotel, &c.; Newcomb, F. B. Long Melford; Nicholson, Wm. Maidenhead; Sparrow, A. Liverpool; Saunders, Mrs. Kidderminster; Saunders, J. Hoxton; Stafford, R. Hyde-park-square.

25*l*.—Bulger, Lieut. 68th regt.; Bowling, T. Ramsgate; Brady, A. Admiralty, Somerset-house; Clinch, Capt. Hobart-town; Dodd, J. Liverpool; Foster, J. Manchester; Francis, J. Birmingham; Gowing, J. W. Lowestoft; Henry, E. Portland, Victoria; Hewlett, A. Bolton; Holden, O. Whitstable; Houghton, T. Edward-terrace; Hughes, C. Northampton; Longbottom, B. Leeds; Mayeur, S. A. 62, Tredegar-square; M'Lardy, Hy. Calcutta; McLean, Colonel, Penrith; Penn, W. Chadwick; Ramage, Geo. Old Kent-road; Rowe, J. O. B. Gracechurch-street; Salgnae, G. Mark-lane; Strickland, C. J. Lanchester; Shadforth, Lieut. gen. Durham; Underwood, Rev. —, Liverpool.

20*l*.—Beuton, W. Highbury New-park; Breffin, Mrs. Glebe, Lee; Budden, J. L. Finchchurch-street; Clement, Jas. Clatto; Clowes, F. Norwich; Cooke, S. C. Horstead; Devonish, A. Weymouth; Harter, W. L. Lincoln's-in-fields; Fell, A. Nelson, N. Z.; Gerring, R. Farringdon; Haydon, Chas. jun. Wandsworth; Johnson, W. R. Nantwich; King, Mrs. W. Connaught-square; Longstaff, Dr. Wandsworth; Macanley, J. J. Rochester; Mills, F. A. Athy, Ireland; Randolph, Mrs. Sandstead; Sheath, Mrs. E. Erdington; Simpson, Rev. J. D. Boulton; Stockdale, G. Thromorton-street; Tarratt, W. Wolverhampton; Tuke, Dr. Conservative Club; Watkins, T. Peckham; Wemyss, Mrs. Gen. Bath.

15*l*.—Aylmer, Miss. Downham-market; Bailey, Mrs. Bow; Bedford, Rev. W. K. Sutton Colfield; Bland, Mrs. Cheptow; Clarke, R. St. George's-terrace; Coke, E. J. St. Vincent; Dawban, R. Wabesch; Dunt, J. E. Cockspur-street; Evers, R. Twistock-hill; Foley, J. G. Trowbridge; Hall, W. Ashton; Rully, T. Dublin; Russ, J. Milto-street; Sayer, R. B. Newport; Smith, J. N. St. John's-wood-park; Steele, Brig.-gen. Smith and Elder's; Taylor, W. S. Golden-square; Thornbrough, Mrs. Westbourne-terrace; Tomlin, S. Or. Liove; Whitehouse, G. Westromwich; Wood, N. Hetton-hall; Young, W. Bolton.

10*l*.—A. Z. 194, Tottenham-court-road; Alleyne, S. Tunbridge; Austin, T. Melbourne; Brown, H. Birkenhead; Collins, J. 115, Regent-street; Davis, R. Daily News; Denny, D. N. Rochester, U.S.; Douglas, Jno. Lancaster; Evans, Mrs. F. G. Horsbury-road; Francis, G. St. George's-street; East, Gregory, E. Bedford-street; Harvey, J. Singapore; Hay, Mrs. A. Sheffield; Hoggard, G. Wellington-place; Jones, J. Kenish-town; Lockwood, G. Chester; Norfolk, H. G. Duke of Devonshire; Cheltenham; Ostway, W. Bideford; Peat, D. Thirsk; Prower, Rev. Canon, Henrietta-street; Rogers, Mrs. F. Petersfield; Simpson, T. Clifton, York; Simon, G. Denmark-hill; Stewart, Gm. Fakenham; Williams, J. W. Huddersfield.

#### CONDITION OF THE ARTIZAN; AND THE CONDITION OF WOMEN.

TIME was, they say, when the secluded ground of literature or art was a refuge needed, for minds pained in the contemplation of evils—then too great for remedy. Whilst the world political and social consumed its intestine elements—murder and rapine as instruments of the governing classes, and excesses equally horrible as the revulsion of the governed, darkening the vista of the future—so that the end of earthly things was sometimes believed to be nigh,—when vice and sensuality were in the higher places; and plague and pestilence decimated the people,—then, as it might be said, any creed of ultimate perfectibility could have few believers; hope abandoned the best of hearts; and the learning of the Benedictine cloister, or the aspirations of artists, were as the solace for the individual mind, even more than they were the means of direct influence in their office of moral regeneration. Now, however, if there be much cause for sadness in what exists, there is evidence that each body of men, or each individual in his sphere, may help somewhat the great work that there is to do,—and which help is both the duty of man's existence and one which returns the only solid gratification.

Such work, set before the architect, is to be hedged in neither by the utmost limits of art and science, nor the widening field of professional study. Exigencies divide the practice of architecture into many channels, whilst the ideal architect is every day being surrounded with more attributes; and so must it continue. But, whatever yet has to be supplied for the furtherance of our qualifications, the *field* cannot ever be bounded unless with some abrogation of the office of the artist and of the duty of the man. Therefore let no narrow his mind to any standard of what *art* is his immediate calling; but rather let him sympathise with the great world, with the throes and agonies of its deliverance, and with the exertions of all who are earnestly working at the problems of its



growth. Such is the true course for all of us—there can be success in no other. Interest let there be taken in any questions which concern the welfare of society or the comfort of sections of the people,—interest in the educational question, and in every one that has sanitary, moral, and social bearings—whether or not immediately appearing to belong to architecture and building.

Viewed in the light of narrowed *interest*, or of wider duty, there is one question that may well be deemed the most important to society, of any to which attention could be given; and it is now, though tardily, claiming notice more probably than has before been accorded to it. Here, then, let no architect—no one who values the means that forward social ends, or believes in any benefits to accrue from moral training, cultivation of intellect, or the special pursuit of art,—let no employer of labour—no one who interests himself in the condition of the working classes,—no one with one touch of nature, or of kin—whether with those whose lot is lowly, or whose station is high—think that he has little concern with our subject, though it may seem one that is foreign, in title rather than in fact, to what may be the general matter of our journal.

Female education and the social position of women,—as properly part of the question of improvement of the condition of the artisan—is a subject of momentous interest to every reader of these pages; but it has also universal relations, such as no thoughtful mind can pursue without the deep sense of duty that will follow upon clear convictions. So presented, any one branch of our subject merges in with the general magnitude of an evil which, if we say, it pervades all the fabric of society, we make no assertion—the result of yesterday's opinions, or that differs from the conclusions which are now stated in glowing language by others. Of *rights of women*, indeed, there are none, other than are the rights of men; but, equality of position has ever been denied, by custom and by law, to the half of nature's work, which, if only not endowed with the same qualities as the other half, is supplied with such as form part of the one creation—in which each half is complementary to, or incomplete without the other. In place of recognition of this equality of duty, of intellect, and of right,—this "communion of labour," as it is styled by the latest and best of the writers on the subject,\*—the position of woman is still that of a dependant,—one who is to be indulged and humoured in one sphere, and, sad to say, too generally, made a victim in others. Jealously excluded from the bulk of the employment for which she would be fitted; restricted, till lately, in the cultivation of her intellect; her existence viewed as "merged in that of the man" (a condition which would be less serious, were it really fulfilled),—woman has no resource from other dependant positions, except marriage; and has too much interested inducement towards that provision for herself, to ensure that the relation shall be reciprocal in acquittance of duty, and the interchange of affection. Often not trained for any duties of a wife,—not furnished with qualifications for the education and care of a family, or any which would relieve some of the cost of her maintenance; sometimes in the higher class, considering any sort of labour a degradation; not encouraged in developing any powers of her mind; neither the able helpmate of the artisan, nor the intelligent companion of the intellectual man,—she suffers from, whilst she is made to perpetrate, a condition of things whereby the married state too often presents itself rather as a danger to be avoided, than as it should be, one of the objects of life. It may seem like a paradox,—but the assertion will convey what is obvious to all who have looked into the subject,—that if there were any real alternative to the woman from marriage, marriages would be more numerous, as more frequently prosperous and happy. True it is that, as in the case of all social questions, one circumstance of evil cannot be disconnected in an estimation of it—as a result, or

even an acting cause—from other evils,—though each may be widely separated in position from another. You may provide the working man with a wife trained for the duties of a home; but the home also must be provided,—and with appliances, without which your work will be undone. Again, the provision of harmless objects of amusement; the extension of free libraries, of baths and wash-houses, and schools; the furnishing opportunities for small investments; and even such improvement in the means of communication between different parts of the metropolis as would lessen the tax to the workman, and prevent the necessity of resorting to a public-house at meal-times,—all these are deserving of attention, but can be only referred to here, so much as may be required to show that their consideration is not neglected by us.

Thus there are, indeed, complicated evils, resulting from the position and training of women, varying in each class of society,—but from each class acting and re-acting, on one another. All come, as we believe, from like false directions taken at the starting-point of life,—from the disturbance of natural tendencies—and ignorance widely spread, or practically exemplified, as to that which a noble band of female advocates have truly claimed as the "mission" of their sex. Such being the nature of the subject, are we to take the course which some might deem expedient, of speaking only to the experience of the working classes, and the sympathies of our readers, or to treat the real question,—that in which the world at large is interested? Illustrations, however, drawn from one class, can readily be made to show what exists elsewhere. Pausing, let us ask, is there any reason other than prejudice, why architecture should not be followed more than as a study, by ladies? We put this question seriously,—is there anything in the work of *architectural* design and drawing, beyond what is exactly suited to the female mind and hand? Even further, would it be a thing quite starting to know that the specification of an architect was drawn out by his wife, or copied by his daughters? Is it impossible to the female intellect to square dimensions (whilst one of the best works on Arithmetic, the "Rational Arithmetic," of Mrs. G. R. Porter, is the work of a woman),—impossible to money out an account; and could it rightly be that "society" should ever after the discovery that such things were done, point at the hapless family who thus made up the true "Communion of Labour." Tell us there are other duties of a home, and we are hardly answered. Are these duties fulfilled in one rank of life, or in another: or in one case, is not the valued direction wanting? and for the home of the working man, is there the saving and ready hand? The fact is, if we may so state it from our own belief and knowledge, that the best examples of the performance of housewifely duties are amongst the most intellectual of women. We know of one,—having the name of one deceased who several years ago contributed articles which we valued, on perspective, to these pages,—she, her friends say, is equally apt in the cutting out a garment, in boiling a potato, in working out a problem in geometry, or in writing an article for a quarterly review. Happily is she placed as the head of a school,—one where music is not taught to those who can never master it, and where philosophy and science, as well as duties and "accomplishments," are not tabooed. Look at what even now, is done by the women who equally adorn our literature and brighten a home. The writer of some letters on "Industrial Girls' Schools," whose initials do not conceal the thoughtful mind and able pen of Mrs. Austin, lately said, speaking of this question of the household duties, "The notion that these accomplishments are inconsistent with high mental culture, refined taste, or feminine grace, is altogether false. The conduct of a household with order and economy, makes large demands on the reason and on the faculties of observation and discernment, and leaves these faculties strengthened for their application to purely intellectual objects. The conduct of a household with grace and dignity, makes large demands on the sense of fitness, harmony, and beauty, and ripens that sense for exercise on purely æsthetical objects."

Surely the slang now so much in vogue among young ladies (*proh pudor!*) does not seem to show that the neglect of domestic occupations is necessarily followed by refinement of the taste.\*

And elsewhere contemplating one hopeful, but too solitary example of a school fitted for the training of the future wife of the working man, she says, "This, thought I, is the real type and expression of the life and duty of woman. Take it at whichever end of the social scale you will, there is nothing higher than this:—the comfort, order, and good government of the house, and the instruction of the young. To fit herself to fulfil these paramount duties of her sex, a woman must acquire qualities intellectual and moral, second to none possessed by man or woman."

We well remember, many years ago, when there occurred one of the periodic outbursts of the educational movement which has so much expanded since, how great was the value attached to infant-schools,—as the foundation for all education,—how much honour was given to one who claimed to have originated them. We were then struck by the omission of reference on all public occasions to the true foundation,—the education of women. We have lived to see such exertions as we could make, to which then there was no response,—such complaints as were then denied, as to the deficiency of female education, and the disproportionate attention given to "accomplishments" and to many paltry substitutes for the fine arts, justified and supported by the brilliant phalanx of writers since risen in the ranks of womanhood itself. Still, however, the social question is but slowly advancing,—though some amendment of the law which gives all the earnings of a wife and mother to a brutal ruffian, or allows a husband to be kept responsible for the debts of a shameless wife, has only too long been under the consideration of a Parliament and a Government which takes many other things leading to lamentable results far too easily.

What with the sort of dogma that Government is not to interfere with certain arrangements,—though Government does interfere—as in the removal of dwellings, and the creation of waste ground—in the way of doing ill; things are left to solve their own problem, by going the way of social ruin and eternal shame. Without entering upon any of those questions of capital and labour, which can be so readily settled by some who just leave out a few important considerations,—there are surely many means now not employed, by which the governing powers or the leading minds of a nation could benefit the masses of the people, and peradventure by an indirect course, secure the other objects that have been contended for. The doctrine that works like that of the provision of improved dwellings, must be effected by private enterprise, would be very well did private enterprise act at all in that direction. But, whilst such enterprise is idle, demoralization and misery are not idle; and it seems not to occur to the mind versed in legislation, or bred in office, that the constant sore which is open is more painful than the operation would be for the removal of it,—a sore, too, that may fester on to peril the constitution or the state.

This digression on a point so intimately allied to the one that we have been treating, we could not avoid at this moment. What we have for the present before us, is the education of the home in another aspect. Now, "what is education?"—what is the signification of the term?—is a question on which there has lately been much careful splitting of hairs. There is a distinction made between *education* and *instruction*,—which, as there could be no dispute about conclusions, we need not enter into. But, heretofore, when we have touched upon another question,—that of the education for our own profession,—we have had to urge the simple truth, that education at all times should be viewed, and directly given, as the preparation for the future life. If the education or instruction of women could be set on the course thus plainly designated, how vast an amount of benefit would accrue to the condition of the artisan, how excellent a chance might there be that a wider

\* "The Communion of Labour: a Second Lecture, on the Social Employment of Women," by Mrs. Jameson, author of "Sisters of Charity at Home and Abroad." London: Longman and Co.

\* The *Athenæum*, November 22nd, 1856.



social evil could be removed. The education of the woman should be equally such as will fit her to be in an independent position, or to acquit herself of the duties of the family and household. Whatever may be requisites for the married state in the higher classes, the wife of the working man is hardly ever competent in any portion of her duties. From such a home as there may be in a basement or a single room, she was launched at childhood through the glitter and temptations of London, to earn at some uninteresting drudgery, in a vitiated atmosphere, during hours far longer than those during which men work, wages for which it is incapable of demonstration that food and other requisites can be obtained. Need we say what too generally at such an age must be the result,—it is one most awful, whilst least to be wondered at. Or otherwise, if the girl is fortunate, she may be sent to a school, where we are told she may answer to, "Who was Cyrus?" but grows to womanhood without knowing how to clean a room, to make a shirt, to buy good food, or to cook a dinner. Or she becomes a servant in a family, where everything is not her own, and waste and extravagance are to be found at least in the kitchen. In any case, what wife have we been educating for the working man? The writer, from whom we have already quoted, in words which best convey all that we could express, says,—

"This, if I am not greatly mistaken, is the root to which we must trace much of that bitter harvest of depravity and brutality of which we daily see examples in our newspapers. It is now seven years ago, that a man of singular intelligence, and of the widest and most intimate acquaintance with the working classes, foreman in an establishment in which he presided over five or six hundred of the best sort of artisans, uttered words which struck me as giving the dearest insight into the condition and prospects of our working classes. I was making some inquiries concerning wages, and, hearing how large these were, I expressed the hope, or rather expectation, that these men laid by money, and were well off. Shocked at hearing that hardly one of them was worth a shilling, I inquired the reason. 'Was it vice—drunkenness?'—'No, those were rare exceptions; we could not employ drunks in our business. It is the bad management of the wives. The money is muddled away. To say the truth,' added he, 'there is no such thing now as a poor man's wife.' What a sentence to pronounce on the homes of England! The admiration with which one witnesses the energetic and intelligent labours of this noble race of men, is turned to pity, when one thinks that all their wondrous skill and industry fails to secure to them the natural object and merited reward of man's toil—a comfortable home, and a decent provision for old age."

And she says in a subsequent letter, she is convinced,

"That all the perplexities and grievances of mistresses, the inefficiency, and recklessness, and corruption of servants, and the miserable deficiencies of working men's wives, are only symptoms of a general disorder of our social body (no member of which has a distinct life), and that in order to arrive at a radical cure of any one of these evils, we must go into a complete examination of their mutual relation and common source."

Such conclusions are those of all who have inquired into this solemn question. A writer in the *North British Review*, in an article on "Outrages on Woman," attributing, as he might well do, the ill-treatment of wives not merely to the bad character of the man, but to the miserable dwellings, refers to the ignorance of "common things," and the want of all training in womanly duties and responsibilities, on the part of the wife. The deficiency is not a reason why wives should be beaten and stamped upon, but it is a cause to be taken into consideration by philanthropists and legislators. And, again, the greatest evil of all our social evils, attributed to the restriction of many employments which would be fitted for women, to the male sex, is due also to the circumstance that the married state does not present to men, we might say of

any class, the inducements which it was designed to hold out,—sympathy, and companionship, and a home. Facts as they are too painfully presented are gaining the tardy notice of the London journals; but viewing the position of either sex, the case has its elements of danger to the social fabric. Low standards of right, even degrading vices like that of drunkenness,—are, we apprehend, likely to prevail where the reciprocal influences of the sexes in mind and intellect, are not felt. The existence of a large unmarried population, or of one which only endures the obligations of the married life, is, we are sure, an element of weakness under any form of government. Is it a hopeless prospect for an old, a civilized country, that "The Communion of Love and the Communion of Labour" should form, as was its purpose, the strength and stay of a state,—should exist as the pledge of good order, and even progressive position. So far from its being even the concern of the State to check the growth of population to a standard of the production of food in the country itself, we can conceive the possibility of a very different principle of action. With the wide world open to the Anglo-Saxon race; with possible improvements at home in agriculture, and discoveries even as to the production of food from new sources—as from substances which are now cast aside; with every year accelerated means of communication, by leviathan steam ships and oceanic telegraphs,—all parts of the world may be in like prosperity and in family union; and whilst the man of energy and action will extend the triumphs of skill and the results of industry around the globe, the man of thought and intellect will, year by year, address a wider British public from his seat at home. The Government of this country have only to prove equal to the occasion, to keep pace with the growth of the population which will be attendant upon the progressing sanitary and social amelioration,—and not as now, practically to apply a "preventive check" in apathy to the greatest and most prevailing ills. To the women of England, whether saying with Mrs. Pochin (whose pamphlet,\* let not the masculine reader disregard, for, the views taken, may be now only in advance of our time), that they have "very few real friends among men,"—or very few who examine their real wants; who would establish and respect their just claims,"—who would encourage their efforts at improvement, and rejoice to see them elevated into a truer and nobler life, even if it should involve a little sacrifice to themselves;—or with Mrs. Jameson, that there is "in general," "among men—superior men—a strong generous sympathy" with the cause she advocates—the "noble and good," as she has "found them," and "raised in their manly power above all vulgar masculine jealousies,"—we would offer gladly such sympathy and encouragement as our words and aid can give, conscious that such a cause as theirs is not alone that of one class, or one sex, but one which concerns the whole human family.

#### ARCHITECTURAL NOTES, PRINCIPALLY ECCLESIASTICAL—IN HOLLAND, GERMANY, AND SWITZERLAND†

THE stone and workmanship of most of the Rhenish churches is excellent, which accounts for their preservation and freshness after the lapse of 600 to 800 years.‡ They mark a singular period of prosperity and progress in the locality, and, like the temples of Baileic and Palmyra, they indicate the cross of an almost forgotten commercial intercourse, which, like the noble river on whose bosom it was carried on, fructified and enriched the countries through which it flowed.

The structures in this particular style most worthy of study are the three great cathedrals of Spire, Worms, and Metz; the church of St. Castor, at Coblenz; at Cologne, the churches of the Holy Apostles, St. Gereon, and St. Maria in Capitolio, the latter of which, according to Hope, is the counterpart of a Greek church in the ruins of Seleucia. There are also many others deserving notice in studying the progress and variations in the style, amongst

\* "The Right of Women to exercise the Elective Franchise," by "Justitia." John Chapman.

† See p. 205, ante.

‡ The stone is sandstone, of a light red or pink colour, pleasing to the eye, and capable of a considerable degree of finish.

which may be mentioned Bonn, Andernach, Boppard, Leach, Bacharach, the minor churches in Cologne, and the cathedral at Gelnhausen,—a very late specimen.

This peculiar style of Rhenish architecture prevailed for about two centuries and a half. The introduction of the pointed arch, though it tended to lighten its proportions, and was not without influence on its arrangements and forms, yet left the distribution and general effect much as before. The cathedral of Gelnhausen, attributed to the early part of the 13th century, and in the pointed style, displays external galleries and circular corbel tables, has plain low gables to each face of the octagonal apse and of the tower, and an octagonal capitol, though carried, not on pendentives, but angular arches. About the middle of the 13th century the style of architecture in the Rhineland was completely changed by the sudden introduction of the contemporaneous architecture of central France, probably the noblest type of Medieval art in existence, and at that time in its most palmy state. The cathedral of Chartres was completed in the early part of the century, though much of the work belongs to the preceding one. Rheims was finished about 1230. Amiens was commenced about the same period. The choir of Beauvais was constructed between 1240 and 1272. To rival, and if possible to surpass these magnificent structures, the cathedral of Cologne was founded, and the works commenced in the year 1248, the choir having been consecrated in the year 1322. The name of the architect of this world-famed building has not been handed down to posterity. That he was a Frenchman seems extremely probable: in fact, the name of Master Gerhard, of whom we first catch a glimpse in the year 1252, as master builder, may be only the German form of the common French name of Gerard. Be this as it may, however, of the French origin of the design there can be no doubt: any one who will compare the three ground-plans of Amiens, Beauvais, and Cologne, will at once perceive that the systems of projection, arrangement, and distribution, are identical. Each of the choirs has double aisles on each side. Each has a polygonal apse in seven planes, with projecting three-sided chapels between the buttresses. At Amiens the extreme east, or Lady Chapel, projects as is usual in England. The complicated system of vaulting, radiating from the *round-point* of the choir through the aisles and chapels, of which it is extremely difficult to find two examples alike, is the same in the three buildings. The parallel might be run through the whole building, in the construction, style of tracery, of mouldings and ornamentation, though in these allowance must be made for the fact, that when works in the Middle Ages were continued for any lengthened period, even on the same general design, much was left to the individual skill and taste of the workman, which varied of course with circumstances. Now in France every step in the progress and development of this school of architecture can be traced back to its origin, whilst in Germany it presents itself suddenly, without preparation or growth, complete and perfect in all its parts.

To attempt a detailed criticism of a building so well known would be out of place: that if completed it would be the finest Gothic building in the world, few will be disposed to doubt.

The principle of counterpoise and mutual dependence uniting every part, so characteristic of the best age of Gothic; the vigorous feeling of buoyancy, power, and life, which this system is calculated to impart, is nowhere shown in more healthy development; yet the candid observer cannot but admit that harmony of proportion has been somewhat sacrificed in the conception, to breadth and height. The five aisles in width running through from end to end, combined with the enormous height of the central vaulting, give an appearance of stuntedness to the building, which its vast size ought not to admit.

The length of Amiens Cathedral, measuring over all, is somewhat greater than Cologne, whilst its breadth over the transepts is considerably less, the nave also has only one aisle on each side. These proportions give the building a sublimity of perspective internally, which it is to be feared Cologne if completed could not surpass.

On the principle that "a living dog is better than a dead lion," it must be admitted that in the *existing state* of the buildings, Amiens is the nobler specimen of the two. Of their relative effects when completed, possibly some critic, writing about the year 2456, may be able to judge.

There is not much of modern architecture of which Cologne has to boast. One of the innumerable family of Jean Marie Farina has recently erected a new depot in the Glocken Gasse, in the modern German Gothic style, in which the principal characteristics are square stiff panels, rigid lines, and geometrical tracery. Nearly opposite, in the same street, is an erection not often met with in the midst of a crowded town. It is a large handsome conservatory



on the ground floor, and abutting on the street, open to the observation of the passers by. The interior is rather elegant, something in the Alhambra style, with polychrome decorations, and a fine collection of exotic plants.

Leaving the ecclesiastical buildings on the Middle Rhine, which we have grouped into one class with very striking resemblances, I will next refer to a few notes on the Cathedral of Strasburg. The building is now in a beautiful state of repair, the interior being thoroughly cleaned, and every defacement removed. The light pink colour of the sandstone, lightened up by the brilliant glaucous hues from the profusion of stained glass, imparts a peculiarly gorgeous effect to the first aspect of the inside of the building. This character is further strengthened by the bold solid style of the east end and transepts, contrasted with the light and elegant proportions of the nave and aisles.

The earliest part of the building is the choir and transepts, which partake of the character of the Rhenish school of architecture, but are not exclusively of that class. The choir extends westward to the west side of the transepts, and is raised about 8 feet above the general level of the floor, with a Romanesque crypt underneath. The east end is apsidal, projecting only its own radius, and vaulted hemispherically with brick. The transepts are square, without aisles, with a cylindrical column in the centre of each. This part of the structure may be safely ascribed to the latter part of the 12th century. The arches of construction are pointed; the vaulting of mixed form. The usual octagonal cupola is carried up over the intersection, covered by a ribbed and vaulted dome. To enter into a minute enumeration of the several details would be tedious, but there is for the attentive observer much in every part of this building worthy of most careful study. The workmanship of the whole is excellent, and the design evidently by a master mind. There is a fine semi-circular arched deeply recessed portal in the north transept, with grotesque capitals. The large rose windows in the transepts, formed by a series of small circles, are curious and interesting.

In the east wall of the south transept there is a pointed tripartite-arched opening, under a semicircular canopy, to which has been added a low open balustrade, of Flamboyant character, of very beautiful design. Leaning on this balustrade stands a figure in stone, the size of life, and painted in a very life-like manner, said to represent the architect, Erwin von Steinbach, to whose genius we owe at least the western portion of the building.

The nave is a noble specimen of the very best style of 13th-century Gothic, and decidedly French in character and treatment. The three aisles are wider than is usual in proportion to their height. The piers are shafted, with foliage capitals. The triforium consists of light open tracery, pierced behind for windows, as is the case at Amiens.

The clerestory windows are large, in four lights, with geometrical tracery heads, not unlike the Early English windows in Lincoln Cathedral and Beverley Minster. The windows of the side aisles are similar in character, and of large dimensions: a blank arcade with detached shafts, and a stone bench, extends under these windows. The vaulting is of the usual simple character of French 13th-century work, with bold cross ribs (*arcs doubleaux*), and lighter cross springers (*arcs ogives*), and pier ribs (*formerets*). Each bay is slightly domical. The two great western towers are carried on arches opening into the nave aisles. The work in this part differs in detail from the nave, and appears of later date, though the style is still preserved. There are here some fine sedilia, with rich crocketed canopies.

There are two very remarkable chapels occupying the two eastern bays of the nave, built outside, and opening from the side aisles. These are both of the latest style of Gothic; that on the south side is probably the latest in construction. On one of the walls appears the date of 1480. The chapel on the north side is vaulted semicircularly with fan tracery, the ribs interpenetrating and crossing each other, with the ends cut off square. The chapel on the north side is vaulted with two low domes, intersected by undercut groins. On this ground-work there is spread out a rich interlacing of ribs in the most fantastical forms, intersecting and interpenetrating, cut off abruptly, and twisted into all manner of shapes, in which the real principles of construction are ostentatiously ignored. There is in these chapels a profusion of rich carving, the execution of which is admirable, whatever exception might be taken to the taste.

On the north side of the nave stands a stone pulpit, of early 15th century character, probably one of the most elaborate in existence, being one incrustation of minute tracery, foliage, tabernacle work, and statues of admirable execution.

There is a rich profusion of stained glass in the

windows, principally old. The pierced triforium windows stained in the rich hues of antique glass impart a peculiarly sparkling effect to the interior.

The exterior of the building is equally worthy of study. The respective portions correspond of course in style with the corresponding compartments of the interior, and do not need specific description. The east end exhibits its Rhenish descent by the usual octagonal cupola, rising above the intersection, surrounded by the open arcade gallery. The side chapels to which allusion has been made present externally very curious illustrations of the Flamboyant style, and of the system of interpenetration. In an anecdote aided on the north side of the north transept this is carried to an extent I never saw equaled. The principle adopted seems to be, to let every moulding penetrate every other it comes in contact with, and then to cut it off abruptly.

A screen or open cloister is carried along both sides of the church in the Flamboyant style, with open tracery without glazing, and surmounted by an open battlement.

The far-famed spires are a noble specimen of mathematical skill and architectural construction. To carry up a structure to the height of 474 feet (the highest in the world\*), the greater part of it being of a light, open, airy character, and so to frame its design and construction that without any subsequent binding and cramping it boldly maintains its uprightness and stability unimpaired after the lapse of more than 400 years,—is surely enough to immortalise the memory of any man, particularly as the same achievement is not likely, so far as we can foresee, to be accomplished again.

Notwithstanding the lightness and elegance of the structure, I am not sure that the form of general outline adopted is the best adapted to embody the idea of aspiration naturally expected from it. The sudden change from the vertical to the sloping forms gives a stunted appearance to the summit less pleasing than the gradually pyramiding lines of the steeple of Antwerp.

The workmanship and materials are of the very best quality, and making due allowance for picturesque weather-stains, it is in excellent repair.

The Minster of Freiburg, distant from Strasburg about forty miles, is another very noble specimen of Mediaeval art. The nave and western tower and lantern belong to the same school and period as those of Strasburg, and are equally excellent both in design and execution. Some of the details are peculiar. There is no triforium in the nave, its place being supplied by a set-off in the wall over the pier arches, fenced by an open tracery balustrade, which is level with the eill of the clerestory windows. The vaulting resembles that of the nave of Strasburg. The western tower is single, placed in the centre of the front, the lower portion forming an open lofty porch. The side aisles have the arcade along the walls under the windows, as at Strasburg. This portion of the building is of the middle or latter end of the 13th century, about coeval with Strasburg. The transepts are Romanesque, of late 12th century work, some of the arches being slightly pointed; there are rose windows at the extremities of the arms of the cross, with triple semicircular-headed windows underneath. The usual Rhenish association is preserved by an octagonal cupola on pendentives over the intersection. This has been modernized. The choir and its aisles are Flamboyant in style of very late date; the choir-screen is, in fact, Renaissance in character, with Flamboyant balustrade. The east end is semi-octagonal: the aisles of the choir are low, and extend round the east end in a zig-zag form, somewhat resembling the aisles of Henry VII.'s Chapel, at Westminster. The vaulting of the choir and its aisles is singularly complicated and interlaced, resembling the side chapels at Strasburg already described: a little of the old Romanesque work still remains about the west end of the choir. There is a fine stone pulpit of late date in the nave. The aisle windows are glazed with fine antique stained glass of brilliant colours.

Externally the building is well placed to be seen to advantage, standing in the middle of a large open "place," surrounded by antique buildings. The tower and open lantern, though resembling Strasburg in general design, have much heavier peculiar to themselves. The porch underneath the tower is finely conceived. An inner portal, with a centre shaft, occupied by figures of the Virgin and child, and flanked by four rows of statues on each side, occupies the whole breadth of the back wall. The doors have square heads, and the arched tympanum is richly sculptured. An arcade is carried round the side walls of the porch, with a statue under each arch, and a canopy over. The exterior archway has eight shafts and orders of mouldings.

The architecture of the exterior presents specimens of all styles from the Romanesque to the latest

Medieval, all good. The choir and the slender Rhenish turrets at the re-entrancing angle of the transepts and choir, still remain, but the upper portions have been modified to a later style. The whole is in excellent preservation and repair. The colour of the stone is a light red, which receives from the effects of time and weather, a beautiful mellowness and glow, which it is difficult to describe.

The town of Freiburg, the south side of the Minster, is a curious low building of the 16th century, with an arcaded front, and projecting transepts at the angles, carried on corbels, and surmounted by spires, covered with coloured tiles. The graining under the arcades is of the same interlaced and interpenetrating design, as the chapels already alluded to.

From Freiburg our course lay through Switzerland. It would be tedious and uninteresting to submit in detail memoranda, made in the various small towns of this country, more remarkable for its natural beauties than for any pre-eminence in architectural skill; its remains in any case are more interesting archaeologically than architecturally. The ancient specimens of domestic building in stone are German in style, and in many cases have been ornamented with large frescoes externally. Most of these have perished, or have been defaced; but a few still remain at Schaffhausen and elsewhere.

The modern street architecture is usually Parisian in its style, detail, and arrangement. The timber buildings which constitute what we usually understand by Swiss architecture, are found the most complete and common in the Canton of Berne. The great principle adopted, is to combine all the buildings of the house and farmstead under one roof. Considering the severe winters and the accumulations of snow in the valleys, this is probably the best arrangement under the peculiar circumstances of the country. The cattle are housed on the "res de chaumée," the house occupies one portion of the upper stories, surrounded by a projecting wooden balcony, flanked by the buildings of the barn and other stores, the eaves of the roof extending its shelter frequently by 6 or 8 feet projection beyond the walls. When kept in good order, with a thriving look of prosperity surrounding them, these huge masses have a very picturesque look; but in upland, sterile districts, such as the Upper Valais, the timber buildings have a very squalid and dilapidated aspect.

I will conclude this paper by a few remarks on some of the Swiss cathedrals, which have been recently cleaned and restored.

Geneva, the cradle of Presbyterian Protestantism, preserved its cathedral at the Reformation. It is of the 12th century transition style, extending down to the beginning of the 13th. The nave is only four bays in length, the transepts two bays each, and the choir one bay, besides the apsidal end. The piers are cylindrical, with grotesque and classical capitals: the pier arches are pointed, with Romanesque details; the triforium semi-circular. The clerestory windows are triple, with detached shafts, something resembling those of the Temple Church, London, and with foliated capitals. The vaulting is pointed, with strong cross-ribs, lighter cross springers, without pier-ribs, and is domical in each compartment. The ends of the transepts have rather fine rose windows.

There are projecting chapels round the apsidal end of the choir, the lower windows of which are filled with original stained glass. The interior is now in an excellent state of repair, and free from all encumbrance. There are a few monuments, but the general aspect is bare and cold. Externally the building is much dilapidated, altered, modernised, and deprived of all character. The west end is terminated by a classical Corinthian portico, bringing to mind the more celebrated one constructed by Luigi Jones, at the west end of St. Paul's. The architecture of Geneva generally, within the walls, presents little worthy of notice. Outside the walls, new streets have been laid out, and quays formed, on land partly gained from the lake.

On the right bank of the Rhone a new suburb has arisen, called the Quartier des Bergues, containing some very magnificent hotels and other buildings erected by private enterprise. The new Post-office erected a few years since is in the Byzantine style, or what passes for such. There is a new English church, a modest structure in the Gothic style, but possessing no particular features. The most noticeable building is a new Roman Catholic church, or cathedral, now in the course of erection, in the Gothic style, with nave, aisles, and transepts, choir with polygonal apse, of large size and good design. The ceilings will be grained in stone.

We will now glance at the town and cathedral of Berne. Berne is very generally compared to the city of Chester, principally on account of its arcaded streets. There is undoubtedly a certain degree of resemblance arising from the view the aspect of both cities, as well as from the correspondence of the covered ways common to both. There are also many

\* 24 feet higher than the great pyramid.



points of difference. The "rows" in Chester are raised a story above the streets, or rather the streets are excavated below the natural level of the surface; and the superstructure is supported by beams and wooden posts. In Berne the arcades are on a level with the streets, and the houses are carried by stone arches. The architecture, indeed, is of a very substantial character, and much of it picturesque. Arcades in the streets of towns were not uncommon, particularly in those constructed in the 14th century. They are met with at Alby, in Languedoc; Dol, in Brittany; Montpazier, in Aquitaine; Payrue and Estovayer, in Switzerland. The picturesque appearance of the streets of Berne is greatly aided by the numerous fountains, of quaint devices, in which the bear in all attitudes plays an important part; and by the lofty ancient watch-towers connected with the old fortifications.

The commanding situation of the town, and the magnificent view it affords of the great Alpine chain, add much to its interest and beauty.

The cathedral is a singular building, deriving its principal interest from the illustrations it gives of the latest period of Continental Gothic. Little of it is earlier than the middle of the 15th century, and some of the work must be brought down nearly, if not quite, to the time of the Reformation. It is all in good repair, and well kept. The building consists of a western tower, with chapel at each side, nave in five bays, with aisle aisles. The choir is a prolongation of the nave, separated by a screen, and without transepts; the aisles are continued on for two bays of the choir, which is carried some distance further without aisles, and terminated by a semi-octagonal apse. The style internally is poor and meagre. The piers are splayed, and sunk with a shaft running up the front. The pier arches are pointed segmental. The clerestory windows have fantastic flowing tracery, with panelling running down to the pier arches without a triforium. The vaulting is complicated in pattern, but poor, with shields and armorial bearings at the intersections. The filling in of the vaults is plastered, and painted with scrolls and borders in a grey colour. Side chapels are projected out between the buttresses, and groined.

By an inscription, in old German, on one of the stones of the vault of the north-west chapel, this portion appears to have been completed in the year 1476. The choir is separated from the nave by a stone screen, in front of which is an arcade, with Classical Ionic columns, and entablature and sculptured frieze. The groined vaulting under this arcade is precisely the same in character with that of the rest of the church.

Externally there is a fine late porch at the west end, with a double doorway, the tympanum filled in with a sculpture of the Last Judgment. A figure of Justice, flanked by angels, occupies the centre pier. The receding orders on each side are occupied by statues of the five wise and five foolish Virgins. The arches are filled in with angels and figures, under canopies, with inscriptions. The whole is exceedingly rich and well executed, though the details of the architectural mouldings are poor. The usual crossing and interpenetration of the mouldings peculiar to the Flamboyant is strongly marked. Two side portals are completed in the same style, but plainer. The upper part of the tower is very inferior to the portals just described, and is probably of the 16th century. The eastern end of the building displays the purest Mediaeval character. There is a great complication of finials, pinnacles, galleries, and parapets about the upright and flying buttresses, each having five, which gives a certain richness to the appearance as a whole.

There is considerable ingenuity displayed in varying the designs of the open-work battlements round the clerestory and aisle roofs, no two bays of which are alike. Some of them have quite a Renaissance character. As studies for forms of tracery, they are worth notice. On the whole, the building may be pronounced more curious than beautiful, but remarkably interesting as an archeological study.

There are several other buildings in Berne worthy of notice. The Kunst Palast, or Museum of Art, is a new building not yet completed. It is a large stone structure, with a centre, receding flanks, and wings boldly advanced. It is four stories in height, without a single Classical column, yet the effect produced is remarkably fine. The tone and character are given to the building by rustication—arches with deeply-recessed mouldings to the windows—an arcade centre to the ground-floor, and an arcade gallery above the centre on the fourth story. Diapered strings and corbelled cornices also contribute to the general effect. The doubling of the columns in the arcades, by placing one behind the other, affording a broad soffit for ornamentation, gives a fine feature in a building of this kind.

A few words on the Cathedral of Basel will complete our remarks. Basel, though on the very edge of France, which almost comes up to its walls, is

intensely a German town. Though large and flourishing, there is not much of its architecture worthy of notice.

The Rath-Haus, of late Gothic, has some curious old paintings; and some extremely singular balustrade tracery, with three sets of patterns one over the other, interpenetrating in a very curious manner.

The cathedral will well repay careful, and even minute examination, by the architect and archeologist. The varieties of style, and the intermixture of work of all periods, render it a little complicated at first, but a little study will soon reduce the chaos into order. The original corpus of the building is the Transition style of the 12th century; the plan, a nave with two aisles, transepts and semi-circular apse, with the aisle carried round. Two additional aisles have been added on each side of the nave, apparently late in the 13th century. The original pier arches are pointed, the triforium arches round. The triforium is a veritable gallery, extending the width of the inner aisles. The clerestory windows are single lights, two in one bay with semi-arches. The vaulting is plain groined, with cross springers and cross ribs. The choir is raised considerably above the nave.

The windows in the apse are insertions of the 13th century, very large. The tracery of these windows is continued down to form an open screen in front of the triforium gallery, which is continued round the apse.

The ends of the transepts have rose windows, under which the triforium is carried round by a recess in the wall, and a blank arcade. The piers in the choir are of the original 12th-century work, and are composed of detached shafts, beautifully wrought with rich-sculptured capitals and bands. The interior has undergone very careful cleansing and repair,—the stone appearing in its original tint of light gray, with a faint flush of pink. The new benches and chairs display some very good designs in carving. There is also a fine modern organ of very beautiful design, and a rich stone-pulpit of 15th-century work.

Externally the original western towers have been replaced by towers and spires of the Flamboyant period, very rich in crockets, tabernacle work, and open tracery. A centre portal is of the same period, but has since been altered. The west window is an insertion of the 13th century. In the clerestories, at the sides, and in the transepts, much of the original 12th century work remains. The flying buttresses of later date are terminated with statues in niches, with canopies and pinnacles well executed. The apse has arcades running under the lower windows, with corbel table over, and a gallery with open parapet under the triforium windows. The end of the south transept has some curious original specimens of Romanesque ornament about the entrance-door.

The deep-red colour of the building is stated by the guide-books to be the natural tint of the stone; but a very slight examination suffices to make the discovery, that the whole exterior has been painted a deep Indian red colour. When this tasteless barbarism was committed, and whether it is still perpetuated from time to time, I cannot undertake to say. The roof is covered by coloured tiles disposed in patterns, which give it a bright and pleasing aspect. The cloisters attached to the church are very extensive, thickly occupied by cenotaphs, of which many have been raised to the memory of early Protestant Reformers.

I have now brought these imperfect memoranda to a close. To myself they are interesting as recalling incidents of travel, and impressing more vividly on the mind, observations, and deductions made on the spot; and, if they have the least effect in calling up recollections, or assisting in the composition of notes by others of kindred pursuits, I shall feel that they have not been altogether penned in vain.

J. A. PICTON.

#### ART—ITS ORIGIN.

MAN is an artist as he is a man. The first rude aspirations after adaptation to circumstances and beauty of form were the necessary expressions of an inward principle. When man began—even in a small degree—to long for comfort, for settledness, for material ease; he became a framer of dwellings. The cavern in the rocks about him, the enclosure formed by tangled woods, the easily constructed movable tent, had been the dwellings of his wandering life: now he felt that he must be a settler. He must for this leave all portable, travelling abodes, and form for himself a solid, well-foundationed, lasting house. The first attempt was rude and yet artistic. He brought to bear the skill that he possessed, and a habitation of some sort was erected. Thus his constructive ability, his invention, his art were exercised. His next effort was made, with all the experience which he had necessarily gained, and was an advance: his wants were better known and better supplied, and better mea-

sures taken to render the building free from the effects of the elements. He had now obtained a holding in a restrained and civilized mode of life—with its restrictions and employs. He had become well imbued with an idea of his own wants, and the best manner of their supply. He had attained two points—the settledness of building, and its adaptation to his need and comfort. Now he naturally, in the spirit of constant advance which has been ever in man, urged himself to the realisation of something further. In pursuing this, he improved on his former adaptations, made his materials of more enduring stuff, let his requirements take a wider range, and, further, he imprinted on his effort the stamp of his creative mind. He no longer formed his work with mere utilitarian art: he added to that beautiful art—equally utilitarian in its origin, only more gradual and restricted in its uses. The door had been before—it had opened and shut—it was artfully made—and was in every sense a door. Doors were still wanted—doors were made—they fulfilled their office—they were advanced on the others, in that with construction were united proportion of form and well-placed embellishment. This was the advanced post—the attainment from which the inventors did not recede, but proceed.

Then buildings retained use, proportion, beauty: they were, in that sense, the works of man's art.

Art originates in invention. Man is in it a creator: he ever acts restrained by no bonds: his mind may light, unchained as it were, on the topmost turret of a temple, and cast broad glances on all that is below. He is free to think: his thought and will are his action: his action is the origination of structure. The hand, as it guides the pen, forms its characters; so that thought is there imprinted that was before unfixed. The mind holds the germ: it there casts forth its branches and is finally developed in word or in act. The mind conceives of beauty: it expresses that conception in word or in act. It conceives of proportion, of grandeur, of solidity, of meanness, and guides the hand of the workman as he chips the stone, or moulds the wood to express his purpose.

The builders, in the youth of their employ, idealized little: they had to follow the rules that such a state as theirs gave to them. Later, their need was proportion of parts and manifestation of feeling. They wanted that their buildings should be fitted for their uses—for their advantage. These uses were not merely for the body, they were for the mind and for the heart. The body wanted a dwelling, a covering, a home. The mind wanted an expression of thought, an arrangement of parts, an orderly fitting together of acquirements. The heart wanted taste, richness, fulness, beauty.

The builders knew that man has a trinity of wants and they arranged a trinity of supply. They acted wisely and well.

#### ART—ITS OFFICE.

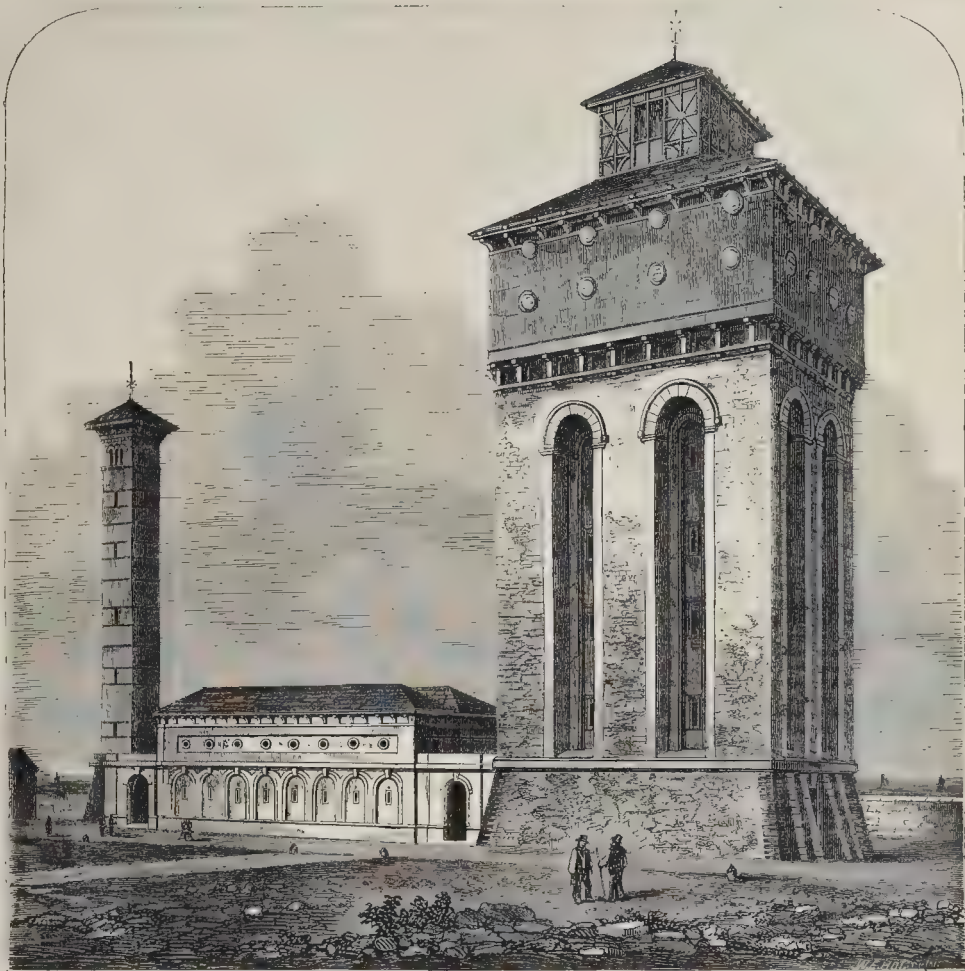
Art was developed by a necessity. It satisfied a longing: its office was beneficent. It is impossible to find a man without some perception of its usefulness. Use appeals to mankind—to English feeling. Art is useful: it makes man more like what he was intended to be: it develops, in the framer, the gentler and nobler of his powers: it affects the observer in his gentler and nobler feelings. Art has to deal with the tone of his being. The void that it fills, the joys that it imparts, and the influence that it exerts, are all beneficial. Surely that which exerts an influence for good is useful—whether or not it affect the temporal or physical advantage of any.

Perfect art must have a perfect originator. Man is not perfect—consciousness tells us this—therefore he cannot form a perfect enshrinement of art. He can only approximate—he ought to do this—he ought to draw as near to perfectness as he is able.

The Almighty One, who made all things by His will, was necessarily perfect—His work was perfect too—He pronounced it very good. He is perfect now; therefore the maintenance of the planets in their courses, and of this our world in its well-being, is perfect. There is no change in our seasons: year after year, spring, summer, autumn, winter follow on unceasingly: the mountains are still as once; the valleys also: the trees still spread themselves upward: the shrubs still flourish in their seasons: the minutest operations in nature are still kept on—on always—on for ever. If we wish for a perfect concentration of use, proportion and harmony, and beauty: we have only to regard some fertile valley—closed in from barren country—the refuge of man, his habitation, his home, the producer of his blessings, the giver of his joys. Art is there in all its supreme excellence: rocks, hills, valleys, all teach us lessons—lessons that the artist, the framer, should learn well and use well.

We have, in this day, as an universal rule, art in a very low stage: the streets of our large towns, the house in country fields, all tell us that use alone is studied,—use too in its lowest being. The covering is framed for the house: it is proof against the weather:





WORTHING WATER-TOWER AND ENGINE-HOUSE.—MR. RAWLINSON, ENGINEER.

is convenient for the body: it consults nothing more. This should not be so.

The individual energy of man was great in time past: the individual energy must be powerful now. Vigour should be with us; then the workman would feel his work—as well as the architect. Instead of one originating mind, there would be only the control of Government to produce a successful whole. Each workman would labour at the work he loved—would love on—and work in love. The workman would not be an implement, a tool, an instrument—he would be an agent, a worker, such as he should be.

Art, in its highest state, indicates a very advanced state of refinement—intellectual and moral—in a people. It is the exponent of the energy, the skill, the taste of a nation. It belongs to no form or race of forms. It does not rest in horizontality or verticality of construction. Every form shows forth a certain development—less or more advanced.

The profit of man, his elevation, his joy are the purposes and aims of true art. The artist should therefore labour for this. S. F. C.

#### WORTHING WATER-TOWER AND ENGINE-HOUSE.

THE water-tower at Worthing, of which we give a view, constructed under the direction of Mr. Rawlinson, C.E. is 40 feet square on plan, with a central pier of brick, and spiral stairs of cast-iron. The foundation is of concrete; the main structure of bricks, made on the ground: white and red brick from other places have

been used in the piers and arches: where stone is used it is Bramley Fall, Caen, or York. The water-tank is of cast-iron, 40 feet square, and 13 feet deep, and will contain about 110,000 gallons of water. It has been made and put up by the Messrs. Cliff, of Bradford. The strongest plates are  $\frac{3}{4}$ -inch, and the thinnest  $\frac{1}{4}$ -inch thick. The staircase is carried through the centre of the tank, and tie-rods radiate from the stairs' well to the sides.

The engine is high-pressure, by Messrs. Headly and Manning, of Cambridge, and pumps sewage as also pure water. The sewage-pumps are at a little distance outside the engine-house. The pure-water well is inside the house, at the foot of the tower, and is sunk in chalk. The bottom of the tank is about 70 feet above the ground, and the tower and roof are about 110 feet in height in the whole. Tank and water, when the tank is full, are upwards of 500 tons in weight. The whole tower is upwards of 4,000 tons on the foundation. There is not the slightest crack or settlement about the work, and the tank is quite water-tight. The engine commenced work at the end of last year. The public sewers will be completed in about a month's time. At present, upwards of 400 houses have been drained, and have had the new water laid on. The men are proceeding with the private works as rapidly as possible. Before summer, the whole of the houses and streets on

the sea front will be sewered, drained, and have new water; and the shore will be perfectly freed from sewage. Messrs. Frend and Hamill are completing the public sewers. Mr. Charles Hide, architect, has superintended the whole of the works, and is now completing the house drainage.

#### METROPOLITAN IMPROVEMENTS AND THAMES EMBANKMENT.\*

THE subject on which I have undertaken to read a paper this evening is, even in its most limited sense, sufficient to chill one's enthusiasm and appall the most courageous improver; but, taken comprehensively, the difficulty is immensely increased. It is hard to resolve where to begin and what to reject, so as to touch the most important points, and bring them all within the compass of an hour's address. To treat shortly and intelligently a subject which embraces whatever relates to health, comfort, convenience, and general well-being of two millions and a-half of people, involves no trifling responsibility. Nothing calculated to improve their condition ought to be excluded. Ventilation, drainage, sewage, public parks, baths, wash-houses, and all other sanitary regulations, whether superintended by corporations, Royal commissions, boards of works, parish vestries, or local boards, are necessarily included under the general idea of metropolitan improvements.

From such a catalogue of matters demanding our

\* Read by Mr. Francis Benoch, at the Society of Arts, Wednesday, April 23th.







This is a matter somewhat theoretical, but, I think, it is well worthy the consideration and careful investigation of the sanitary student, with the view of ascertaining whether the direction of the streets bore any—and if any, what—influence on the general health of the population.

Having thus glanced at the formation of our business streets and thoroughfares leading to districts dedicated to pleasure, we must turn our attention to the examination of the difficulties to be overcome before our main trunks of communication can be considered perfect, or moderately convenient.

How to employ the industrious poor; how to get rid of the criminal population, are, and ever have been, exciting subjects for discussion. Reformatory societies, prison discipline, labour-regulating, crime-repressing and fraud-preventing, schemes, with suggestions numberless, are spoken from the pulpit, thundered from the platform, and echoed by the press, until the very air gets thick with thoughts of something to be done. Physical discomfort and its consequent moral degradations have attracted the attention of our Shaftesburys, our Lockes, our Rogers, and our Lethbys, and Parliament will, ere long, be forced to devise some true method of removing or abating these discreditable scenes so frequently disclosed. London is now an epitome of the universe, and contains within its borders not only all that is purest, best, most refined and holiest, but also all that is vilest, basest, wickedest, and barbarous. The several districts are divided from each other, and as accurately defined by the habits of the people, as are the several countries of the earth—on a map by Wylde or Arrowsmith, Belgravia, Tyburnia, Bethnal Green, and the recently discovered Regent's Park district of Costermongery, are all peopled by tribes as different in their habits and modes of life, as are the Esquimaux and the loungers on a Parisian boulevard. It is no part of my intention to dive into the recesses of these several regions, and bring into light either the gems and jewels of the one, or the loathsome filth and reeking crime of the other; I leave that for able hands. My work is to endeavour to bring these several portions of the metropolis more closely together, by suggesting certain improvements, which, if adopted, would render a journey from the west to the east of London possible in less than half a day.

The difficulties of the north-west passages, the nearest route to India, the mountains of the moon, have all been measured and resolved. How to bring our Australian cousins into closer relationship, standing as we do towards each other, heel to heel with only a globe of earth between, has had due attention from the public and the Legislature; but how to bring the several parts of disjointed London into closer contact by increasing its number of bridges, widening its streets, embanking its river, or extending and re-erecting continuous a metropolitan belt of railways, has never to this hour received the steady and determined attention of the authorities. A spasmodic movement is occasionally made, but with little effect. Instead of a new bridge, they construct a crutch to support the broken back of the old one. They commence a street and leave a wilderness; they attempt a sewer and produce a cesspool. We devote thousands to the evangelization of the barbarous South Sea Islanders, and leave our unfortunate brethren in an adjoining street comparatively uncared for, wallowing in hotbeds of crime, suffering, disease, and death. The brightest intellects of the country and ablest engineers of the land, are devising means by which all parts of the civilized globe shall be placed in immediate contact. The harnessed lightning, obedient to our will, is delivering every moment, at every central seat of commerce, the course of Exchange on Paris, or the price of Consols in Capel-court; but how to shorten the overland route from Charing-cross to Whitechapel, is left to a few enthusiastic private persons, who, are, I fear, looked upon as lunatics, the matter seemingly being abandoned as hopeless, while the evil is increasing day by day.\*

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS. ROME.

At a meeting of the institute held on Monday, the 26th, Mr. Godwin, fellow, in the chair, it was announced that the temporary indisposition of the president, the Earl de Grey, would prevent the presentation of the medals on that evening, as intended. Numerous interesting donations were presented, including a photographic view of the scaffolding for the erection of the column in Rome, commemorating the establishment of the dogma of the Immaculate Conception.

With reference to the photograph, Professor Donaldson condemned the obsolete style of scaffolding adopted in Rome; and the Chairman urged the more extended use of photography by architects in obtaining reports of the progress of their buildings.

\* To be continued.

A letter from Sir Charles Barry was read, inclosing a copy of his protest against the decision of the Government in respect of his remuneration.

The Chairman said that Sir Charles Barry was richly entitled to the best thanks of the Institute, and of the profession at large, for the good fight he had fought, not simply for his own personal advantage, but on behalf of the architectural profession. Government had admitted in the great competition now going on the principle of 5 per cent., and although in that they had not done all that was needed, still in what they had done they had shown the injustice—he was compelled to say—with which they had treated Sir Charles Barry.

Mr. Asplint then read a continuation of his paper on the Roman Forum, but confined himself in it more particularly to the buildings on the Capitoline Hill. The following is a portion of his argument:—

"We now come to the consideration of the Capitoline—a subject which has lately awakened unusual interest. In addition to what had already been written, a very able critique has just appeared in a late number of the Quarterly, upon Mr. Dyer's opinions on the subject of the Capitol, contained in his excellent article on Rome in Dr. Smith's Dictionary of Classic Geography. The writer takes the side of Messrs. Becker and Bunsen against Mr. Dyer, who adopts the views of Canina and Dr. Braun.

The nature of the Mount, a sort of saddle-back with an intermediate hollow, has been before described, and it seems clear from the account of Varro, that the entire hill was as much designated 'Capitolinus,' as the other hills 'Palatinus' and 'Aventinus.' But from the circumstance of there being two summits, a sort of subdivision seems to have been adopted, and however terms may have been interchanged, one summit seems especially to have been called 'the Arx,' and the other 'the Capitol,' the hollow ground between being designated the Intermontium. The great question now is, which was 'the Arx,' and which 'the Capitol.' Mr. Dyer and Canina place the Capitol on the northern summit and the Arx on the southern.—The reviewer, following Bunsen and Becker, reverses this order. Two things are agreed on by all, viz:—that the Temple of Jupiter Maximus stood on the Capitoline—and that of Juno Moneta, the Roman Mint, on the Arx, the spot where formerly was the home of Manlius. That the whole hill was called the Capitol, is clear from the fact, that it is always so named in the enumeration of the seven hills, just as the whole hill was formerly called the Tarpeian, and before that the Sæmian Mount. It took its name from the head of a man named Tulus (Caput Tuli), being found fresh and bleeding under ground, while excavations were being made for the foundation (Jul. Obseq. 5). This event was considered such a prodigy as to justify the change of name. Now this was two centuries before the time of Romulus, and yet Livy (i. 10), describing his offering the Spolia Opima to Jupiter Feretrius, says, he ascended the Capitol, by which word, of course, the whole hill must be meant. When, however, classic authors speak of the hill alone without relation to the other hills, the Arx and the Capitol are mentioned separately; thus Livy, describing the surprise of the place by Herdonius, of which we shall treat presently, says: 'The news went to Tullus that the Arx was taken and the Capitol seized upon;' in another place, 'The Arx and the Capitol were in great danger;' in another, 'The Arx and Capitol, the dwelling-place of the Gods;' and numerous similar examples might be quoted. But there is even something more, the whole hill was sometimes called the Arx. Thus, Servius in his Commentary on the Æneid, viii. 652, says: 'Thus on the other part of the shield was modelled the Capitol because this is manifestly the Arx of the City.' Mr. Dyer also cites a passage from Cicero (Vir. ii. 6), to the same effect.

Perhaps an example might be found among our own writers, when speaking of the Tower of London. It is often said such a one was sent to the Tower, tried and beheaded there, when, in fact, the execution took place out of the Tower, upon the Tower-hill; and sometimes people are said to have been executed on Tower-hill, when, in fact, they underwent their sentence on the rising ground called Tower-green, in front of the chapel and inside the Tower walls. To doubt an English historian's accuracy because he might confound one spot with the other, would be too severe—and yet these are distinct spots, with a broad moat between them. Thus, with respect to the Capitoline Mount, one summit should be called the Capitol, the other the Arx, the Intermontium between them; can we now define the right names for each division? Becker tries to settle the matter at once, by quoting from Livy, xxv. 21, 'A large stone, whether

from the rains, or from a slight earthquake, having slipped, fell from the Capitol into the Vicus Jugarius, and killed several people.' Now we know this street began near the Temple of Ops, and passed close under the southern hill, but it has been shown that the whole hill was called Capitolinus, times without number, and therefore the passing expression proves nothing. He then quotes a passage from Suetonius, who, in relating the mad pranks of Caligula, says he built a bridge from the Palatine to the Capitol. If the Capitol had been on the northern summit, this bridge must have crossed the Forum at an angle, a thing highly improbable. But the fact is, we find on referring to the author, that the half-crazed, half-savage wretch, was seized with the desire of being adored by the people, and that he sometimes sat between the statues of Castor and Pollux in their temple, inviting public worship, and at last pretended to receive frequent visits from Jupiter Capitolinus. 'He then,' says the author, 'throwing across a bridge (ponte transmissus) over the Temple of Augustus, joined together the Palatine and the Capitol.' There is not a word of the Arx, nor of building a bridge. Not a word about the bridge in any other author, though such an erection, a hundred feet high and a quarter of a mile long, must have been something to talk of. A bridge is said to be 'transmissus,' literally 'sent across,' not over an open space, but over the Temple of Augustus! Now, a little further, we read that another of his pranks was to scatter money from the roof of the Basilica Julia among the people; what then can be more easy and probable, than to suppose he had a light bridge, possibly moveable, thrown across from roof to roof of the temples, which would at last land him in the Tabularium, whence he could ascend to the Arx or to the Capitol as he pleased? It is evident he was in the habit of passing over the various roofs—and if so, what need had he of such a stupendous, such a gigantic bridge, of which no remains exist, and of which no author makes mention?

There is another story, of which Becker makes a great deal, and which requires a little more consideration. It is the account of the sudden surprise of the Capitol by Appius Herdonius, a Sabine by nation. The account is partly given by Livy, and at greater length by Dionysius of Halicarnassus (10—14). The facts occurred a little before the time of the famous story of Virginia. Herdonius seems to have been a sort of adventurer, who had

'Shark'd up a list of landless resolute,  
For food and diet, to some enterprise  
That hath a stomach to it.'

in fact, he had collected as many exiles and slaves as made together a body of about 4,000 persons. In justice to all parties let us take the account given us by Dionysius. He states, that Herdonius got his men together in some light boats, that 'they crossed the Tiber at that part of Rome where the Capitol stands, which is scarcely a stadium (a little over 200 yards) from the river; then, it being the middle of the night, and all the city being deep in sleep, they went up at their will through the unlocked gates, for thus do the sacred gates of the Capitol remain through an oracle (they call them the Carmentis gates); then, sending up their power, they seized the *eporion*, or guard, then making an attack on the Arx (*Arx*), they made themselves masters of it.' Now, Becker reads the passage to mean that Herdonius came to the Carmentis gates, not of the Capitol, but of the city itself; that he slipped through them, and then scaled the rock and entered the Arx, and thence the Capitol. But these difficulties directly suggest themselves: is it to be reasonably supposed that a city would be carefully fortified with walls and gates, and yet the principal gate be always left open to the attack of an enemy? It can easily be understood why an inner gate should always be left open according to an oracle, especially when leading to a holy place like the Capitol; but an outer gate always open would be as useless as no gates or walls at all. But Dionysius does not say it was an outer gate; he says it was the gate of the Capitol, called the Carmentis gate, and this it might well be. It was close to the Altar of Carmentis, and it has been shown that its name had varied; it was sometimes called the Sæmian gate, sometimes the Porta Pandana. In fact, there is a strong presumption that it never meant the Carmentis gate of the city, and that Herdonius brought his men by water. Now, if he passed the gate of the city by the river, landed his men in the city (which we can easily conceive), and then rushed upon the open gates of the Capitol, seized on the guard, and made himself master of the Arx and the Capitol, the whole affair is intelligible, and intelligible according to the notions of Canina. In fact, I must say, these arguments of Becker's seem to prove nothing; and besides, it is difficult to comprehend the account according to his views, and easy to understand it according to the ideas of Canina and Mr. Dyer.

Professor Donaldson objected to some of the views

\* We may take the opportunity to say that our own series of papers on Rome were determined on and commenced before the introduction of the subject at the Institute. A continuation of these will appear in our next.



entertained by Mr. Ashpitel, and described at considerable length the buildings in the Forum.  
Mr. Ashpitel having retired, Mr. William Haywood, of Guildhall, was elected a fellow, and the meeting separated.

#### DRAWING IN PAROCHIAL SCHOOLS.

WHEN the Department of Science and Art commenced the system at present in operation for teaching drawing in parochial schools, it was a much-revolved question whether the time which was proposed to devote to it, namely, one lesson per week of one or two hours in each school, would be sufficient to give ordinary children such an amount of instruction as would be of any value, considering the short period of their continuance in the schools.

Opinions on the subject, which the Department obtained from a large number of those engaged in teaching drawing, were of the most conflicting kind; and although many prophesied that no practical good could result from a few lessons in drawing spread over a long period, some were of opinion that they would sow the seeds of art, and probably lead to other and more complete means of obtaining an art education.

Now that the scheme has been fairly tried, it may not be out of place to make some remarks on the subject.

The method by which the proposed instruction in parochial schools was to be carried out in London, was by making the teaching of them part of the education of advanced students in the head-school at Marlborough House, who were undergoing a course of training both in art and art instruction, previous to their appointment in county schools of art as masters.

These students had, as a part of their education, to give one or two lessons per week in the parochial schools; but, as a rule, each student gave one lesson per week, of one hour, in some national or other school to which he was appointed.

The average number of children instructed by each master, during the hour's lesson, was about seventy; and as the lesson was of so short a duration, it became necessary to adopt some system by which each child might receive the full benefit of the lesson; and this, considering the number of children instructed, was somewhat difficult, inasmuch as drawing may be said to be an art to acquire which requires careful and individual supervision. As the expense of material for so large a number of children was also an important question, as the majority of pupils were of the poor class, some kind of inexpensive material had to be thought of. These difficulties were surmounted by the adoption of the black-board as a means of giving the lesson; the pupils drawing on slates the object which was drawn by the master on the board. Then, as in the majority of cases the children were very young, it was evident that some simple explanation should accompany the lesson, and a plan of instruction be resorted to, by which even the youngest child might understand how to draw the object given.

To obviate this difficulty a comparatively new system of teaching was adopted, and one which, judiciously practised, was calculated to be perfectly successful. This was the principle of giving constructional lines as a means of drawing the actual lines of the object, all bearing a certain proportion to the first line which was drawn. Thus, in a figure in which the *cyma recta* was drawn, a straight line would be drawn as the central line; the position of the curve indicated by another straight line, which would be divided into two equal parts, and upon this the curve be drawn.

The same thing would be repeated on the opposite side, providing the object were symmetrical. As a rule, symmetrical objects, such as vases, simple pieces of ornament, and such-like subjects, were selected; so that a central line might be drawn, and the proportions of the figure to be drawn having been already fixed by the master, the central line was divided into a certain number of parts, upon some of which the principal parts of the figure lay. The balance of the object would be obtained by passing lines at right-angles to the central one, and marking off equal distances on each side of it, themselves bearing some proportion to the central line.

Suppose, for instance, a vertical line, A B, be drawn, and divided into two equal parts; the same length of line be drawn at the extremity A, half on each side A B, and the ends of this horizontal line be joined to the extremity of A B at B, by straight lines; the two latter be bisected, and upon them two *cyma recta* curves be drawn, forming a lotus-like figure, which is completed by drawing, from the extremities of the horizontal line, curves which tend inwards, and unite in the bisecture of the central line. Other small features would be added without constructional lines, in order to exercise the eyes of the pupils to see the proportion they bear to the rest of the figure, and

prevent the constructional lines from becoming a mere crutch. Such an example as this would be given for its simplicity, and might, perhaps, form the first exercise in the drawing of curves. The master would draw it on the black-board, step by step, and, as he drew it, make such remarks on the peculiar features of the figure as would best enable his pupils to understand it, whilst they themselves would copy each line as the figure progressed until the completion of the object.

Besides his observations on the object drawn, he would give general cautions to beware of falling into certain errors which his previous experience told him they would be liable to as beginners; and afterwards he would go round to each child, and correct his drawing, pointing out individual errors.

The advantages to be derived from such a system of tuition were various. It combined both class and individual instruction, the latter being perfectly necessary; and as only a very short time was devoted to drawing, it was thus economized and made the most of. It made use of such materials for teaching as were already in the school-room and were very inexpensive, and the manner of giving the lesson was such, that the simplest child could understand it perfectly. Perhaps few subjects previously out of the routine of school education, could have been so favourably accommodated and so easily blended with the already existing system of education.

When the pupils had acquired a certain power in drawing straight lines and simple curves on their slates, paper was given them, and the same exercise which those who improved but slowly continued to draw on the slates, those who showed more taste and improvement were allowed to draw on paper. This was a step to the simpler examples of Dyce's class was a step to the simpler examples of Dyce's drawing-book, and as a pupil's eye became better educated to see proportion, and his lines showed greater reticement and firmness, he was advanced to the highest class in parochial schools, viz. that of shading from solid models.

I have hitherto spoken of this system in the past tense, because it was in such a manner that the experiment commenced, but in the majority of instances it is on such principles that the parochial schools are now taught.

Whether, as a rule, the system be thoroughly successful, is a question which can only be answered after careful and long investigation, and it is not my intention at present to enter into that part of the subject. I will, however, give the result in one instance of such tuition in drawing as I have described.

In the *Builder* of April 18th you noticed the public examinations in drawing which have lately taken place in the London District Schools of Art, both of the students and whoever else wished to apply for examination. At the Rotherhithe school, the number of exercises worked was forty-one; the number of prizes given was six. Having myself had the care of the Rotherhithe parochial drawing-class during the examination year and up to the present time, when the system was announced I was anxious to test the system of black-board teaching, upon which I have worked the school, and I therefore sent some children for examination in freehand drawing from copies, which formed one of the subjects for examination. I inquired concerning the six successful candidates, I found that three were little boys from my class at the parochial school, a fourth was a boy who had attended parochial school, and that at the district school, whilst both my class and that at the district school, whilst the remaining two were boys from Queen Elizabeth's School, Southwark, in which I am the drawing-master, and have taught the classes in it solely on the black-board system of tuition. Now in the case of five of these boys the average amount of instruction which each has received has been one lesson of two hours per week during the past nine months, and this period includes the vacations and absences occurring in the time. The exercise given at the examination was one of Dyce's examples, two conventional anthem-like flowers, springing symmetrically from two lotus-shaped forms. The time given for the working of the exercise was one hour, and those only who completed it received prizes.

Now, taking these facts into consideration, I think it sufficiently determines that the present system of black-board teaching is successful. If the difficulty of the exercise and the abridged short time allowed for its working be remembered, it will be evident that those who completed it must have been possessed of considerable power; since to draw a symmetrical object in the time and that no simple one) was no easy task. This power in drawing has been acquired by the ordinary system of parochial school teaching; and thus the question as to whether the system be a good one may, I think, be answered in the affirmative. That there are many features in it which might and must be considerably modified is undoubtedly the case; but this might be accomplished if the Press would take some interest in the subject, for it is useless to hope for any great improvement from any

other source. Such facts as I have above stated will, I trust, show the importance of the matter, one which has come especially under my own observation, and upon which I have expended much time and investigation. The probability of such instruction becoming general, in all national and other schools throughout the country, must render any practical information concerning it of some interest to those who are interested in such subjects; I will therefore, with your permission, at a future time, give you some results of my own experience on the subject, hoping that the difficulty of obtaining reliable information concerning it will render any I can give you not wholly unwelcome.

WALTER SMITH.

#### PUBLIC OFFICES COMPETITION.

THE public will be admitted to see the designs on Monday next (the 4th). The judges are appointed, but Sir Benjamin Hall objects to their being known until the drawings have been publicly exhibited. We have received several letters as to the hanging, but as it is now done, it would be useless to insert them.

Is your number of the 25th ult. your correspondent "Renardus P. C." writes, "If there be a competitor who has been made enough to tint or shadow his elevations, let him be made a public example."

I agree with "Renardus P. C." as regards the tint (and should be "narrow-minded" enough to exclude also designs with "floors and corridors made yellow or blue"), but not as regards the shadow.

The "instructions" say, "The elevations are to be in line only," not in outline only. Therefore line etching and shadowing are allowed to any extent.

As others besides myself have taken this view of the instructions, after due consideration and advice, perhaps you will be so good as to give publicity to these remarks from

A COMPETITOR WHOSE ELEVATIONS ARE SHADOWED, THOUGH "IN LINE ONLY."

#### MECHANICS' HOUSES, ROSEBANK, EDINBURGH.

THE plans and details given on the opposite page illustrate some houses built for the better class of mechanics and others at Rosebank, Edinburgh, for Mr. James Gowans, under the direction of Mr. Alexander Macgregor, architect, of that city.

The advantages attained for each house by the plan are, first, a distinct and independent entrance; secondly, a plot of ground for bleaching or for flowers; thirdly, a water-closet; fourthly, a scullery, with washing-tubs, bath, and hot water; fifthly, a separate access to each apartment from the lobby, without going through the adjoining room; and, sixthly, ample provision for ventilation and for warming the small bed-rooms, which have no fireplaces.

The cost of each house at Edinburgh, executed with well-squared rubble stone, and dressed stone dressings, including all the appliances for warming, ventilation, and drainage, enclosure and stair-railings, &c. and finished in substantial style, was 220*l*.

#### REFERENCES.

a. Kitchens or sitting-rooms, floored with deal.

b. Bedrooms.

c. Sculleries, with trough at end, which is convertible into two washing-tubs, sink and washing-tub, or a bath, when required.

d. Water-closets, having a spring by which the opening of the door flushes the pan.

Nos. 5, 6, 7, and 8, are the plots for the houses above Nos. 1, 2, 3, and 4.

Fig. 1. Elevation of kitchen chimney, showing boiler.

Fig. 2. Cross section of ditto.

Fig. 3. Section of fire-clay back of kitchen grate for warm air.

A A. Drawing of the fire-clay back to kitchen grate, showing the divisions or chambers for warm air. The cold air from the grate openings at X travels across the whole back of the fireplace, and is carried into those rooms which have not fire-places by hollow bricks in the partitions.

Fig. 4. Trough in scullery, with a movable centre, to be taken out when used as a bath.

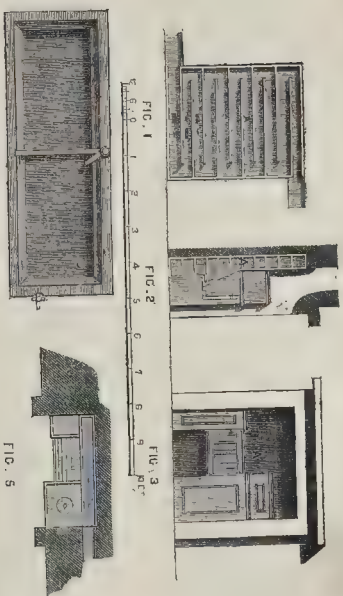
Fig. 5. Plan of kitchen fire-place.

CLOCK FACES.—Permit me to inquire, through the medium of your columns, what is the best and most economical material for the face of a parish church clock? Our present clock-face has a southern exposure, an elevated situation, and, with southerly gales, is washed with the salt spray of the sea, from which it is distant about one-third of a mile. Copper, cast iron, cement, glass, wood, have each their advocates. Your kind insertion of this inquiry may elicit some valuable information from parties who have directed their attention to the subject. —M.





HOUSES FOR MECHANICS, ROSEBANK, EDINBURGH.—Mr. A. MACGREGOR, ARCHITECT.





## CHURCH BUILDING NEWS.

**Chalford.**—Some additions and alterations are at present being made at Chalford Church, Gloucestershire. The existing church was built in 1724, and consisted merely of a plain parallelogram, with gable ends, but with an M-roof, and with a small bell-cot. The north aisle has the somewhat unusual arrangement of consisting of seven cylindrical vaults running at right angles to the nave, and terminated upon the outside by a corresponding number of gables. The length of the nave was increased, and a chancel added in 1741, by Messrs. Foster and Sons, of Bristol, architects. The contract has been signed by Messrs. Hook and Restall, builders at Chalford, for the tower, spire, and porches. Messrs. Naylor and Vickers, of Sheffield, have offered to lend, and fix free of cost, a peal of six cast-steel bells for a year for approval. This, it is believed, is the first instance of cast-steel bells being used in this country in peals. Including the tower and spire, and bells, and the other additions contemplated, the total cost will amount to about 1,700*l*. Mr. F. T. Gompertz is the architect employed.

**Kingswood (Bristol).**—The new Moravian Chapel at Kingswood was opened for divine service on the 25th ult. The building, which is in style a modification of the Italian, consists of a nave and transepts with an apsidal end. The transepts, on the ground-floor, are occupied by vestries, and over them are galleries, the vestries being divided from the chapel by glazed screens with curtains. The roof is open to the timbers, except that over the apse, which is hemispherical, groined, and finished in plaster. The internal length is 56 feet, the width 25 feet, exclusive of the transepts, and the height 25 feet. It will accommodate upwards of 270 persons, and has cost about 700*l*. The architects were Messrs. Foster and Wood, and the several contractors Messrs. Brown, Davy, and Diment.

**Sneed.**—The *Bristol Times* states that a meeting has been held, at the residence of Mr. J. S. Harford, of gentlemen residing in the neighbourhood of Sneed Park, to take into consideration the propriety of erecting a new church on that estate, for the convenience of the growing population of the neighbourhood. A general understanding was arrived at that the work should be at once attempted. It was decided that the edifice should be made to accommodate 500 persons, and cost 3,000*l*, or 4,000*l*, more than a moiety of which sum was subscribed on the spot.

**Tedstone Delamere.**—The parish church of Tedstone has been restored by Mr. Scott. He has retained the old walls of the nave, strengthened them by buttresses, and made good the foundations. A new high-pitched roof has been provided, and a two-light window inserted at the west end. The bell-turret is of wood, unmounted by a pyramidal shingled roof. The south porch is of oak. The chancel has been entirely rebuilt. The east window is a triplet under a containing arch, with shafts of polished serpentine marble in the interior: it is filled with stained glass by Hardman, representing "The Ascension." This window is the gift of Mr. James Wight, of Tedstone-court. The sill of the south-east window is lowered to form the sedilia. On the opposite side is a credence niche, and in the vestry is a piscina. The seats are of oak, and all open. There is accommodation for about 150 persons in the church. At the entrance to the churchyard a high-gate has been erected. The builder employed was Mr. Pearson, of Ross.

**Basford.**—A committee has been formed, including the Duke of Newcastle, to carry out the restoration and enlargement of the parish church of Old Basford. Mr. Place, architect, has reported on a plan, whereby the accommodation will be increased from 414 to 714; and the duke thinks it could be easily extended to 800. The proposed works comprise the reseating of the interior, and rebuilding and enlarging the north aisle. The tower is to be repaired, and new high roofs placed upon the church. A new north porch is to be built, and a vestry provided at the east end of the north aisle. The church is to be heated by hot air, and a bed of concrete laid under the floors against the damp. The masonry generally is to be restored, and the churchyard properly drained.

**Derby.**—The foundation-stone of the intended new church of St. Michael, Derby, has been laid by Mr. T. W. Evans, M.P. The edifice will consist of nave, north and south aisles, chancel, vestry, and tower. The peculiarities of the site have caused some variation from the usual arrangement in the plan of the church. The widening the public road in Queen-street, as arranged with the Local Board of Health, has so reduced the length of the churchyard from east to west, that, although the church will be built at the extremity of the churchyard at each end, it would not admit of the tower standing at the end of the nave: it will consequently be erected at the south-west angle, on the south side of which is the principal entrance to the church. The acute angle in the church-

yard, at the junction of St. Michael's-lane with Queen-street, has caused the extension of the north aisle westward beyond the end of the nave: this projection forms an octagonal recess in the inside, suitable for an organ. The stone used for the walls will be from Duffield, Sydenham for the piers and arches, and for the windows, tracery, and cappings, stone from Ancaster, in Lincolnshire. The seats and timbers of the roofs will be of red deal, stained and varnished: the inner surface of the roofs will be lined with boarding, and Croggon's asphaltic felt will be laid underneath the slating. The style of the building will be Gothic, of the geometrical period of the fourteenth century. An attempt has been made to retain the same character in the new structure as the present one possesses.

When the tower is completed it will be about 60 feet high, a little more than the height of the old one. With the limited means at the disposal of the committee, it has not been thought desirable to attempt a structure vying in pretensions either with the spire of St. Alkmund's, on the one side, or the tower of All Saints', on the other, but to form a bold, massive feature, that would produce an agreeable contrast with both. Mr. H. I. Stevens is the architect, and Mr. Charles Moody the contractor. There will be accommodation in the new church for about 450 persons—double the number provided for in the old one.

**Westbromwich.**—Efforts have been for some years made to provide a church at Greet's-green; and at length the contract for the erection of a church has been taken by Mr. George Robinson, of Redditch, the amount being 3,000*l*. Messrs. Johnson and Son, of Lichfield, are the architects. The building will consist of a nave, with north and south aisles, upwards of 78 feet in length; a chancel, and western tower. The total length of the church, from tower to chancel, is 120 feet; width, 58 feet. The exterior is of stone, and the style is Decorated Gothic. The building, including a children's gallery at the western extremity, will be capable of accommodating 607 adults and 227 children. The roof is to be open and stained. The site was given by Sir Horace St. Paul and Mr. Edward Jones.

**Brackenhild.**—The ancient chapel of the Holy Trinity, hitherto the only place of worship in the secluded village of Brackenhild, having become from age and decay quite unfit for the requirements of the inhabitants, besides being situated in a remote and almost inaccessible part of the district, it was thought desirable to erect a more suitable edifice. This has been at length accomplished, and the new church has been consecrated. It is erected in the centre of the district, on a site given by Mr. Turbutt. The edifice consists of nave, north aisle, chancel, vestry, and south porch. The style of architecture is that which was prevalent in the fourteenth century. The roof is open-timbered, and the windows are traceried: the seats are open benches. Two windows at the west end of the nave are filled with stained glass, executed by Mrs. Turbutt, and representing the Apostles, St. Peter and St. Paul. The floor is paved with encaustic tiles, from Messrs. Minton's manufactory. There is a provision made at the western extremity of the north aisle for the proposed tower, which will be completed when sufficient funds are raised for the purpose. The architect is Mr. J. C. Hine, of Nottingham; and the builders were Messrs. Lindley and Son, of Mansfield. The amount of the contract was about 1,250*l*, which has been met in a great measure by private subscriptions and grants from societies.

**Walsall.**—The foundation-stone of a new church at the Pleck, near Walsall, was laid on Wednesday inweek before last, by the Countess of Bradford. The edifice has been designed by Messrs. Griffin and Weller, of Wolverhampton, architects. It will be a Gothic structure of Early Decorated character, and will consist of nave, with north and south aisles, a north porch, north and south transepts, chancel, organ chamber, and vestry. The roofs will be high pitched, framed with open timber, boarded, and covered with blue and red tiles, the ridges being finished with open cresting. The sittings will be of deal, stained and varnished; the roof timbers also stained and varnished. The aisles and part of the chancel will be paved with black and buff quarries, and that part of the chancel within the rail with Minton's encaustic tiles. The east window will have three and the west four lights: the transepts will have three-light windows; all the window-heads will be filled with tracery. The clerestory will be lofty, with four traceried windows on each side. The building will be warmed by hot water. The church has been designed with a lofty bell turret, but it is expected that arrangements will be made for putting in the foundation of a tower and spire, to be added at some future time. A stained window has been promised for the chancel. The church will afford accommodation to 600 persons, including children, on the ground-floor. The contractor is Mr. Isaac Hightway, of Walsall. It is in contemplation also to erect a parsonage.

**Newland.**—The foundation-stone of a Wesleyan chapel and school-room was laid at Newland, on Monday last, by Mr. John M. Hamilton, of Hull. The building is to be erected of white brick, with stone dressings, and will be in the early English style. The fittings and all the interior wood work will be stained, in imitation of oak, and varnished. The accommodation will be for nearly 200. The contractors are Mr. Cressey, of Hull, for the brick and plaster work; Mr. W. H. Shaw, for the mason's work; Messrs. J. and J. Benton, of Grimsby, for the carpenter's and joiner's work; Messrs. Richardson and Miller, for the plumber's and glazier's work; and Messrs. Dawber and Son, for the slating. Mr. Botterill, of Hull, is the architect.

**East Bergholt, Suffolk.**—On Wednesday, 22nd April, a new congregational chapel was opened in this place: Mr. C. F. Hayward, architect. The building is entirely of brick, the material of the neighbourhood, and the various colours are disposed with a view of bringing out the constructive lines. A triplet, with a circle above, fills the end gable, and a lancet-light flanks it on each side, while below is the doorway, with a boldly projecting slated hood. The side windows are lancet-lights, placed singly between buttresses. The roof, 35 feet span, is open, and the timbers stained, and the fittings generally are finished in this manner. The amount of contract was 829*l*, including school-room, and the accommodation afforded with this latter addition, which forms also part of the chapel, is 506 sittings.

## STAINED GLASS.

**St. Thomas's Church, Salisbury.**—The great east window of this church has been filled with stained glass, designed by Mr. Alfred Bell, architect, in illustration of the 36th verse of the 24th chapter of St. Luke's gospel: "And as they thus spake, Jesus himself stood in the midst of them," in pursuance of a request to that effect, contained in the last will of the late Mr. William Smith, of Salisbury, who bequeathed 200*l*. therefor; the rest of the cost being provided for by his widow. The window is a rather late Perpendicular one, of five lights, divided into two rows by a deep transom, with some debased and extensive tracery above. The central compartment of the top row is somewhat higher than the others, and this now contains the figure of our Lord in the act of benediction. Around him, in the remaining compartment, are grouped the eleven Apostles, who were then assembled together, all being so placed as to be looking up to Him (the central figure) in attitudes of surprise. Each of the Apostles is distinguished by his peculiar emblem. In the tracery above are contained representations of the dove and angels bearing palms. The drawings of the figures, and the forms and colourings of the robes, &c. are very fine, and we advise our readers to see for themselves this magnificent and munificent work, and addition to art in Salisbury. The manufacture was by Mr. Lavers, of Southampton-strand, Strand, under the immediate direction of Mr. Bell.

**Aylesbury.**—One of the lancet windows on the north side of the chancel of St. Mary's church, has just been filled with stained glass, the work of Mr. Oliphant, to whom was committed the execution of the obituary window on the south side, presented by the family of the late Mr. Fowler, of this town. The general pattern of both windows is a reproduction of the design of the early English glass, in Chetwode Church. The vestiges of the new window contain representations of the Baptism and the Temptation of our Lord. The new window is presented to the church by the Archdeacon and Mrs. Bickersteth, as an act of kindly remembrance towards the late vicar, Mr. Pretyman, and his wife.

## PROVINCIAL NEWS.

**Brighton.**—A national school has been opened at the small village of Brighton, between Norwich and Yarmouth. It is built with red brick and white facings, and roofed with mixed tiles, from a design by Mr. Brown, of Norwich, architect. The dimensions are 30 feet by 18 feet, and the cost has been 260*l*. The entrance is by an ornamental porch. The room above this porch is arranged for a free lending library, which will shortly be opened to the use of the cottagers. The school has been built by the aid of subscriptions and a government grant of 100*l*.

**Newbury.**—A Congregational school-room is about to be opened here. It is of brick, designed by Mr. Clacy, of Reading, and built by Mr. Hopson, of Newbury, and is 72 feet long by 33 feet wide, and 21 feet high, with means of converting a portion of one end into two class-rooms, in addition to which it contains two galleries, one 20 feet by 33 feet, the other 40 feet by 7 feet. The whole building will be lighted and ventilated with gas, on the new system of the "sun burner." The total cost of the building



will be about 1,100Z, a considerable portion of which has still to be raised.

**Chatham.**—The large new tidal basin in course of construction at Chatham Dockyard is progressing, and, as soon as completed, will afford accommodation for line-of-battle ships. The new dock has been built on the site of the old No. 2 dock, and will be of the length of 360 feet, and 92 feet broad. The foundation of the basin has been laid on beds of concrete, the bottom and sides being of granite. It is in contemplation to lengthen the adjoining, No. 3, dock nearly 100 feet, making its length upwards of 300 feet, so as to admit a larger class of vessels. Messrs. Rigby, the contractors, have also lengthened No. 7 granite slip 60 feet, making its total length 330 feet.

**Devizes.**—The foundation-stone of the Corn Exchange at Devizes was laid on Wednesday in week before last, by the Mayores of Devizes. The building (which is designed by Mr. Wm. Hill, of Leeds, architect) will be of Bath stone, and the contractor for the works is Mr. James Rendell. The principal facade towards the market-place will be 46 feet in length, and will consist of four Corinthian columns, with rusticated pilasters at the angles, supporting a cornice, with blocking and balustrade above. Surmounting these, in the centre, will be a figure of Ceres with agricultural emblems, on an ornamental pedestal; and vases will crown the blocking at the angles of the building. The roof will be partially covered with slate, and the upper portion with glass. Arrangements are made for ventilation by louvres on each side of the whole length of the building between the slate and glass roofs. The interior area of the building will be 136 feet long by 42 feet wide. The floor will be of wood.

**Abbridge.**—Mr. Cox, of Highbridge, builder, is the successful competitor in his contract for building the intended police-station and lock-up house for the county constabulary at Abbridge. Mr. Cox's contract was 1,350Z. There were five other estimates sent in for the work.

**Birmingham.**—A new temperance hall, on a more comprehensive and convenient plan than the present one, is projected to be erected at Birmingham.

**Hull.**—The Hull Ragged and Industrial Schools approach completion. The scaffolding has been removed. It is in the Tudor style, from a design by Mr. Botterill, of Hull, architect, approved by the Committee of Council on Education, who contribute a liberal sum towards its erection. The walls are of red pressed stock bricks, laid in dark-coloured mortar, and relieved with stone dressings. The roofs are of high pitch, slated, with ornamental crest at the ridge. Above one of the entrances, in a ventilating turret, is a clock and bell turret, and in the eastern facade, surmounting the intersection of the roofs over the dormitories. The works have been executed by Mr. H. H. the contractor, under the superintendence of the architect. The principal buildings comprise—on the ground floor—industrial rooms, 25 feet by 29 feet, and 27 by 16; committee-room, 18 by 11½; kitchen and scullery each 15 by 15; boys' and girls' bath rooms, each 15 by 15; and on the first floor, boys' school-room, 27 by 25; girls' school-room, 25 by 25; and boys' and girls' dormitories, 30½ by 15 each. The two playgrounds each contain about 450 square yards, and are separated by the school buildings.

#### SCOTTISH BUILDING NEWS.

**Edinburgh.**—The restoration of Old Greyfriars' Church is nearly completed. This church was destroyed by fire in 1845, and has been for nearly a year past in process of restoration, under the superintendence of Mr. David Cousin, the city architect. The interior is entirely open and unencumbered by pillars or galleries. The roof is of open wood-work, and the windows are all filled with stained glass, as memorials of former ministers. In the eastern gable is a large window of five lancet lights, contributed by the congregation. Above this is a small clerestory window of three lights filled with stained glass by Mr. Ballantine, the artist in glass, as a personal contribution to the work of restoration. To the right of the great window is a triplet window, erected in memory of the Rev. Dr. Erskine, by Mr. Thomas Erskine, of Linlithgow, and others. On the north side of the church, a twin lancet has been filled with glass in memory of the Rev. Dr. Finlayson, after one of the early windows in Cologne Cathedral. This window is contributed by Principal Lee. To the left of the large east window is a triplet in memory of the historian, Dr. Robertson, erected by the Earl of Minto and others. On the south side of the church another triplet is erected in memory of the Rev. Dr. Inglis. The glass is similar in character to the former, and the subject of Paul preaching at Athens is introduced, in allusion, it is said, to Dr. Inglis having originated the Mission for Schools in India. This window is contributed by the Dean of Faculty and Mr. H. M. Inglis, as a memorial of their father, a minister of Old Greyfriars'. On the same,

side of the church is a twin window, erected by Mr. Anthony Trail, W.S., in memory of the Rev. Robert Trail. The glass is similar in character, though less elaborate than the two former. A twin window has been erected, the work of Mr. Barnett, of Leith, on the north side, in memory of the Rev. Dr. Anderson. The triplet window facing the entrance-door was erected at the post of Mr. James Buchanan, of Morsyplace, and is dedicated to the memory of the Scottish worthy, George Buchanan. The whole of these windows, with the exception mentioned, have been executed in the establishment of Messrs. Ballantine and Allan.

**Glasgow.**—The Dean of Guild Court of Glasgow met last week to dispose of some applications for liberty to erect new buildings. Among others, "Mr. Peter McFayden, cabinet-maker, Argyle-street," prays to be permitted to build a range of dwelling-houses in Lyon-street, Cowcaddens. This range is to be five stories in height, and is to be divided into single compartments of about ten feet square. One narrow common stair will conduct the occupants to six of these rooms on each story, or, in other words, to thirty lodgings from the floor to the top of the building. Each room, of course, will be occupied, according to the arrangement, by a family which may be either large or small—in the majority of cases large: if five be taken as the average, there will thus be 150 persons entering by one door and living up one narrow stair in thirty rooms of ten feet square! A more shameful proposal has never been made. It is known already by experience what such ranges of tenements are. They are dens of disease, of thieves, of drunkenness, and of every form of profligacy; yet the court, for want of powers, according to the *North British Mail*, is compelled against its own better judgment, to sanction the proposal!

**Dunbar.**—The repair of damage done to the breakwater of the Victoria Harbour during late storms is now proceeding. The work has been contracted for according to a plan and specification by Messrs. Stevenson, C.E. and in keeping with an extensive improvement of the whole works, and the deepening of the harbour on the land side.

**Elgin.**—The wooden fencing in front of the North of Scotland new Banking Office has been removed. The building, according to the *Forres Gazette*, is three stories, and the Banking Offices are on the ground floor. The whole is partly dished and polished freestone from Newton Quarry. Mr. Urquhart, builder, slater, and carpenter, has executed his parts of the work. The building occupying the site of the gloomy Trades' Hall gives an aspect of cheerfulness to this part of the town, which it knew not when the broad shadow of the old Jail and Court-house rested on it. The shutters, which are new in the North, are Bunnet and Co.'s patent non-curved shutter, of iron stripes, Venetian-blindwise.

**Inverness.**—In the terms of resolutions adopted at a recent public meeting, the inhabitants of the town and county of Inverness have forwarded a memorial to the Home Secretary, in which they say,—"That it is believed that, exclusive even of the counties of Caithness and Argyle, the other great districts of the Highlands in question contain at least from 600 to 700 lunatics, most of them paupers;" and praying that authority be granted to the northern counties, by Act of Parliament, to borrow money for the purpose of defraying the cost of the original construction of an Asylum, upon terms similar to those embodied in the 19th and 20th of Victoria, cap. 117 (29th July, 1856), with power to assess themselves for its repayment, extending over twenty or thirty years, and this without waiting for the report of the General Lunacy Commission for Scotland.

#### ARCHITECTURAL PHOTOGRAPHIC ASSOCIATION.

On Wednesday, the 29th ult., a meeting of architects and others desirous of forming an association for procuring and furnishing to the members, photographs of architectural works of various countries, by means of a moderate subscription, was held, by permission of the council of the Institute of British Architects, at their rooms, No. 16, Grosvenor-square, Grosvenor-square, Mr. Ferrey in the chair.

Mr. Hesketh stated that he had only ventured in the first instance to ask the attendance of several gentlemen, chiefly in the profession, with whom he was personally acquainted, in order to consult their views, and ask their advice before the proposition should be submitted to the profession generally and the public. He then pointed out the particular adaptation of photography for obtaining correct and beautiful representations of architectural subjects, beyond perhaps any other purpose to which that art had been applied, and it appeared to him that the profession ought to endeavour to make a greater use of it, and by co-operation to lessen the cost of photographs. Having mentioned the reasons for considering that

a very great reduction might thus be made in the cost, he showed the means which seemed to him, amongst others, available for carrying out the objects proposed; through the members of the profession and other friends who would be shortly travelling to various parts, and who might obtain negative photographs of the buildings in some of the places they would visit; through presents of negatives, which would doubtless be made to the association; perhaps, too, the Honourable the East-India Company might be willing to assist them in India. He had communicated also with a scientific officer of the Royal Engineers, who, with another officer of the corps, was present, and would, perhaps, inform the meeting whether they might hope for assistance from them and from the Company's Engineers in the different parts of the globe in which they were quartered.

Sir Charles Barry expressed his cordial approval of what had been proposed, and urged that the Association should be confined to architectural subjects exclusively. He also recommended that the Association should afford to architects facilities for obtaining photographs of their own works during their progress, or otherwise, as it was a most useful means of obtaining an intimate knowledge of the progress of works at a distance. He then moved the following resolution, which was passed:—

"That an association, having for its objects the procuring and supplying to its members photographs of architectural works of all countries, is eminently calculated to be of benefit to the architectural profession, by obtaining absolutely correct representations of those works, and to the public, by diffusing a knowledge of the best examples of architecture, and thereby promoting an increased interest and love of the art."

The following gentlemen were requested to act as a provisional committee, to obtain members, and to draw up regulations for the management of the association, to be submitted to a general meeting:—Sir C. Barry, Messrs. Ashpitel, Clifton, M. D. Wyatt, Ferrey, J. H. Hawkwell, S. Wood, C. H. Clarke, Salvin, C. C. Nelson, H. B. Garling, P. C. Hardwick, G. Mair; Capt. Scott, R.E.; Capt. Ross, R.E.; Messrs. Papworth, Boutell, and Hesketh, with power to add to their numbers. Finally it was resolved,—That Mr. Hesketh be requested to act as Honorary Secretary *pro tem*.

#### THE ARCHITECTURAL PUBLICATION SOCIETY.

THE first part of the works for the year 1856-7 has just been issued, comprising illustrations to some of the articles in the letters A and B of the "Dictionary of Architecture." These, together with the previous plates, make thirty-five devoted to these letters.

The subjects are all of much interest at the present day. "Agricultural Buildings" occupy the two first plates, affording specimens of dairy farms erected in Dorsetshire and Gloucestershire: these plans show also the manure and surface drainages, and have been presented by Mr. Henry Drake. Another plan, comprising the Scotch system, as practised in Berwickshire, is contributed by Mr. John Sturthorpe, of Edinburgh, whose plans, issued by the Highland and Agricultural Society of Scotland, are already familiar to many of our readers; and lastly a stock farm, as just completed in Kent, and contributed by Mr. A. Ashpitel. These, together with the plans issued last year of practical farmsteads erected in Lincolnshire by the late Mr. E. Willson, of Lincoln, make a choice selection of modern examples for study. Five interesting examples of interiors and exteriors of "Apse," from Como, Venice (2), Arezzo, and Sebaste, are placed with a series of seven plans, showing the manner of forming this termination of a church, as practised from the ninth to the fifteenth centuries. "Arcade" has furnished two specimens from Assisi and Siena, plain and ornamented; and "Balcony," six examples from Venice, Vicenza, Florence, and Verona. "Bell" is illustrated by an exceedingly fine work,—"that in St. Peter's at Rome: it is greatly to be regretted that this example was not made public at an earlier period, as notwithstanding the defects in its very elaborate ornamentation, it forms a striking contrast to the paltry plainness of the 'Big Ben' of Westminster, whose 'decoration' is a disgrace to the state of the Fine Arts of the present day. Sections of the bells at York and Montreal are also given. "Bench ends" (tinted) opens up a subject in which much can yet be done by those who are not addicted to conform to strict precedent. The examples are taken from Cologne (6), Piacenza, Palermo, Siena, and from Great Tew and St. Cross in England. "Brickwork," showing its ancient applicability either for plain work, cut work, or use with terra cotta ornamentation, is illustrated in two tinted plates of examples from Siena, Verona, Milan (the Great Hospital), the minutely detailed Campanile (thirteenth century) of San Antonio, at Padua, with seven specimens of cornices from Bologna, Padua, Verona, Spoleto, and



Venice. The introduction of the bands of brick in the otherwise stone cornice of Verona is especially deserving of attention: reference will be found made to it in Street's "Brick Architecture." "Buttress" gives a worthy example from Nuremberg of a more than usual English character, with others from Bautzen, Cintra, Amiens, Troyes, and Brasted in Kent, which latter having a wide substructure allows for a small archway, and its projection admitting of its being used as a porch, is suggestive. Two examples of Italian character are given from Florence and Venice.

The selection has been altogether judicious, and the members are greatly indebted to the liberality of those gentlemen who have thus so freely contributed their drawings for the use of the society. Besides those above mentioned, who are new friends, we see the names of Messrs. W. Lightly, F. P. Cockerell, G. Somers Clarke, H. R. Newton, W. Boucher, and R. H. Shout, together with the more familiar names, as connected with the society, of Messrs. E. H. Martineau, Octavius Hansard, J. W. Walton, J. Lockyer, Jan. T. H. Lewis, S. S. Tenlon, and C. Fowler, jun. Messrs. Hansard and Lewis have likewise devoted much time to the collection and preparation of the drawings. On page 212 will be found a list of some of the subjects in the letter C, which the committee are now preparing to illustrate.

A few weeks since (p. 181), we adverted to the difference in the sale of books to architects and to engineers; and a strong example of the point we wished to advocate is given in the work in course of publication by the society. It is certainly a very striking instance of the fact, how little the profession interests itself in works more immediately bearing upon their pursuits, and how little it aids the class of works relating to it. As we have often urged before, there ought to be at least a thousand subscribers to this "Dictionary," instead of the present few hundreds: this would then enable the committee to carry out with energy the arduous task imposed upon them. Even the addition of some seventy or eighty members would now produce a year's issue without the necessity of a subscription. The profession should come forward in earnest at once.

#### COMPETITIONS.

**Worcester Cemetery.**—The committee have had much trouble in arriving at a decision. After long discussion by the town-council, three designs were selected. The sealed envelopes accompanying the designs were then opened, and it was found that the architect of "Trefoil" was Mr. R. Clarke, Shakespeare-street, Nottingham; of "Finis" Mr. R. Wheeler, London; and of "Faith," Mr. C. H. Cooke, London. The committee were duly instructed to carry out the plans, advertise for tenders, and report from time to time.

**Nantwich.**—Designs have been received for erecting, at Nantwich, Cheshire, a new town-hall, corn-exchange, news and reading rooms, &c.; and those submitted by Mr. Cranston, architect, of Birmingham, have been selected, and are to be carried out.

#### THE SERPENTINE IN HYDE-PARK.

From time to time public attention has been directed to this well-designed piece of ornamental water, which, in general effect, is scarcely surpassed by any other public decoration of the metropolis. It is certain, however, that the Serpentine, beautiful as it looks, must be put in the list of painted sepulchres, if we may use such a term; and it is to be feared that, unless proper means are taken, the condition of things will become worse, and it will be necessary to get rid of the ornament for the sake of wholesome.

It must be evident to every one who has looked carefully, as well as frequently, at this favourite place of resort, that the supply of water is quite insufficient for the purpose of causing a proper current to clear away the impurities. Looking over the railings of the road which crosses the east end of the Serpentine towards the Knightsbridge barracks, instead of seeing the water continually streaming down the artificial cascade, in nine cases out of ten the imitation rocks will be found dry—a stagnant green-looking pond at bottom—the vegetation in the season more than half eaten away by insects; and it is curious to remark how few birds are to be seen in this shady place: there are, however, rats, in somewhat strong force, often to be noticed.

We would rather not enter into particulars as to the source and tributaries of this water, but would hint that it is not altogether so pure as it should be when it arrives at Kensington-gardens.

In order to remedy a manifest and increasing evil, various plans have been suggested. Some say let us have the bottom concreted, and the depth regulated; and this is a good hint. Others say let us have the

water drained off, and the site planted with trees and shrubs. But who that has seen the sun setting redly behind the trees beyond the well-proportioned bridge, would for a moment recommend the planting of this place, if by any means it can be rendered wholesome?

It has also been suggested that salt water, for the supply of the Serpentine, should be brought from the sea at Brighton. This would be attended with enormous expense; and it is doubtful if salt water brought in this way, in such quantities as would be possible, would benefit the bathers in proportion to the cost; we could scarcely, in Hyde-park, by the mere presence of a salt-water lake, manufacture the bracing atmosphere on which the beneficial effects of sea-bathing so much depend.

Those who have seen the many thousands of persons who throng the Serpentine in the summer mornings and evenings, must feel how necessary it is that this piece of water should be kept in proper condition. We would, however, rather that this should be effected by means of a sufficient quantity of clean fresh water, natural in such a neighbourhood.

Are there no small rivers at a moderate distance from the spot which, by the expenditure of a reasonable sum, could be made to flow into the parks, and, after doing duty there, be sent to add a mite to the volume of "Father Thames?" for surely he will require some help before long. Our old and useful, yet dirty, servant must be fed by water from the land, in order to enable him to throw back the regular attacks of the sea; otherwise he must continue, as he has for some time done, to get smaller and less vigorous at his extremities.

This subject is well worthy of the careful consideration of all who feel an interest in the tasteful adornment of the metropolis, or who are anxious to provide a sufficient and proper bathing-place for large numbers of our pent-up mechanics and others.

#### THE AREA IN FRONT OF ST. PAUL'S.

It is with much regret that we notice that this space, which, in the crowd and throng of the city, may in a way be compared to water in the desert, is still closed against the public. The police, the tradesmen, and all who have business in this crowded thoroughfare, say that the opening of the gates of this inclosure was a very great advantage. This damage has been done, most probably, by a mischievous boy or other person, and it would be well that he should be brought to justice. Surely the Dean and Chapter of St. Paul's should have used some means of doing so, and not closed a space and a pathway so useful to the public. It would be just as reasonable to shut up the cathedral of St. Paul's altogether, in case a mischievous person should unfortunately perpetrate some small damage in the interior; or that the British Museum should be closed, because a madman in the absence of the attendants broke the Portland vase. A reward of 10s. has been offered for the apprehension of the offender. I have at times seen advertisements of 2l. reward offered for a missing gentleman, and have wondered at the cheap consideration in which he was held, and the reward of 10s. offered for the apprehension of the person who has caused the public to be deprived the use of a most convenient privilege is hard to be understood, and shows a feeling which is not altogether creditable. I trust that the dean and chapter will reconsider this matter.—A WATFARER.

#### GAS.

THE half-yearly meeting of the Great Central Gas Consumers' Company was held last week at the London Tavern, Mr. Dakin in the chair, when the chairman read the report, and congratulated the meeting on the prosperous statement which it conveyed to them. Their rental for the year ending Christmas last amounted to 54,228l. 7s. 4d. being an increase of more than 5,800l. over the preceding year, and 8,400l. over the rental at Christmas, 1854. This increase raised the net profit to 16,802l. 13s. 4d. The balance brought forward was 15,259l. 19s. 4d. by deducting the amount of the depreciation fund, as settled for four years ending the 31st December, 1856, from the gross profits of 15,250l. 19s. the sum of 10,459l. 19s. would be left for paying the usual half-yearly dividend, after deducting all working expenses, interest on debentures, &c.; and out of that sum the directors recommended the payment of a dividend for the half-year at the rate of 8 per cent. per annum. This would absorb a sum of 6,919l. 13s. 7d. leaving a balance of 3,540l. 5s. 5d. to be carried over to the credit of the next half-year's account. Dr. Letheby's report, which formed a portion of the directors' report, stated the quality of the gas to be 23 per cent. over the standard of illuminating power required by their Act: 242 experiments had been made during the year.—At the Thames Police Court on 24th ult. Mr. Alexander Angus Croll, the engineer of the Great Central Gas-works at Bow-common, appeared before

Mr. Yardley, to answer a summons taken out by Mr. Edward Fulcher, inspector of nuisances and sanitary inspector for the Poplar District Board of Works, which summons charged that several nuisances existed on the Gas Company's premises. After a long discussion, Mr. Yardley said it was admitted on all sides that the nuisance was of a threefold character; and it was agreed as he suggested, instead of making an order at present, that the summons be adjourned for six weeks on the defendant undertaking to cover over the tanks and the blue billy-pits, and prevent the escape of any offensive effluvia; also, that none but pure water should be used in cooling the glowing coke from the retorts, and that a longer time should be allowed to change the purification of the gas.

Gas has just for the first time been introduced into a Cornish mine—Ballsbridge. Mr. A. Wright, C.E., who contracted to supply the gas, delivered a lecture on Gas to a large number of miners and others, assembled in the drying-house of the mine, and was listened to with great attention.

A public dinner was held at the Crown Inn, Staveley, on Wednesday week, to celebrate the opening of the gas-works in that place, erected by Mr. Marriott, of Staveley, under the direction of Mr. T. F. Cashin, of Sheffield, engineer. The company are extending their mains to the remotest part of the village, and at present they are charging 6s. per 1000 for gas, but shortly they expect to reduce it.

The existing Glasgow gas companies are paying dividends of 10 per cent. It is now proposed to establish a consumers' company, to meet the discontent which the present high rates occasion, by limiting the dividend to 7½ per cent. The company is to remain independent, but its charges are not announced.

#### PRESERVATION OF LEAVES.

If your correspondent, "R. H. W." will take a dish and place his leaves and flowers on edge, or in such a position that he can embed them in fine dry sand without disturbing their forms, and afterwards dry them in the oven, he will find this a ready means of attaining his object. The heat should not be so great as to burst the delicate vessels. I believe this preserves the colour better than any ordinary plan. The yellows generally stand well, however dried; but whites, reds, and blues, have always an unpleasant tendency to dirty brown. Plants dried in this way are more or less crisp, and inconvenient to keep: my herbarium, of about 1,000 specimens, is made by placing a few sheets of newspaper over each plant, applying pressure, and changing the paper daily until dry. This is quite sufficient for giving the correct outline of the leaf; and a study of the *habit* of the plant in its wild state will enable the artist to adapt it to his purpose. FINAL.

#### ELECTRO-MAGNETISM AS A WORKING POWER.

At the Institution of Civil Engineers, on April 21st, the paper read was "On the Application of Electro-Magnetism as a Motive Power," by Mr. Robert Hunt, F.R.S.

The author commenced by giving the progress of the investigations by which Oersted first proved the connection between electricity and magnetism, and which led Sturgeon to construct the electro-magnet. The powers of this form of electric force, as developed temporarily in soft iron, naturally induced the idea of employing it for the purpose of exerting mechanical motion—doing work. The principles of the electro-magnetic machines of Dal Negro, of Botta, of Jacobi, of Armstrong, of Page, and others, were next described. It was shown that all engines acting by a direct pull were inefficient, from the circumstance that the repeated blows received by the iron, so altered its character, that it eventually assumed the quality of steel, and had a tendency to retain a certain amount of permanent magnetism. This induced Jacobi, after a large expenditure of money, to abandon arrangements of this kind, and to employ such as would at once produce a rotatory motion. The engine, thus arranged, was stated to have been tried upon a tolerably large scale on the Neva, and by it a boat containing ten or twelve people was propelled at the rate of three miles an hour. Page's engine, and that of Horth, which in 1851-52 excited much attention, were described as being in principle an electro-magnetic piston drawn within, or repelled from, an electro-magnetic cylinder. By this motion, it was thought that a much greater length of stroke could be secured than by the revolving wheels or discs. After having generally described the forms under which electro-magnetic engines had been constructed, the author proceeded to give, as the result of his experiments, confirmed by those of others, the difficulties which still stood in the way of the application of electricity as a motive power; and he endeavoured to enforce the law, that all mechanical force,



of whatever kind, whether horse or man power, steam power, or electrical power, involved a change of the forms of matter to produce that force;—that to produce motion it was essential to use matter, and that virtually, in all cases, it must be destroyed as a useful agent. Hence the commercial question of cost, he conceived, was greatly in favour of steam, and adverse to the use of electricity as a motive power.

A discussion, which was commenced, was announced to be continued at the next meeting.

Mr. T. Allan, whose improvements in electric telegraphs have been recently mentioned, has lately occasioned considerable excitement in Paris by the exhibition, at the desire of the Emperor Napoleon, of his electro-magnetic engines, which, according to the *Mechanics' Magazine*, are unquestionably the most successful examples in existence of the application of electro-magnetism as a motive power.

The main feature of Mr. Allan's invention consists in the application of electric currents so as to form several electro-magnets in succession, by means of which several impulses shall be successively given in the same direction to a rod capable of being moved longitudinally to any extent which may be required. At the commencement of a stroke the first of a set of keepers upon the rod is placed sufficiently near to the first set of magnets to enable them to exert an available force upon it, and to move it through the space that separates them. Therefore, when a current of electricity is applied to this first set of magnets, they accordingly draw down the keeper to them, and move the rod longitudinally through the space just mentioned. The next keeper is, by this means, brought within the same distance from its magnets, and the current of electricity is at the same moment cut off from the former and applied to these, which thereupon draw their keeper to them, and move the rod through an additional space or distance equal to the first; and the other magnets and their keepers will respectively act in a similar manner in succession, and thus complete the stroke of the rod; after which the opposite rod will be operated upon similarly, the reciprocating motion thus obtained being converted into rotary motion by means of the connecting-rod and crank in the ordinary manner. Mr. Allan has also arranged a rotary engine upon analogous principles, and a writer in the scientific periodical just named states that he has seen it produce very excellent results.

#### RECENT PATENTS FOR ARTIFICIAL STONE.\*

No. 2,267. FREDERICK RANSOME, Ipswich.—*Improvements in the manufacture of artificial stone, and in rendering it and other building materials less liable to decay.* Dated 27th September, 1856.—This invention is applicable, first, to those descriptions of artificial stone which are compounded with sand, clay, and other mineral or earthy substances, together with soluble silica or a soluble silicate, and the invention consists in adding to the composition of such artificial stone a substance which will fuse more readily than the sand, and will run into and fill the pores of the stone, and thus render it more dense than when compounded without such addition. The substances which the patentee prefers to employ for this purpose are pumice-stone or a readily fusible glass. In preparing the artificial stone he prefers to mix the ingredients in the following proportions, by measure—Silicious sand, 80 parts; finely-powdered silica, 10 parts; solution of silica, or silicious cement, 5 parts, sp. gr. 1.700; powdered pipeclay, 5 parts; pumice-stone prepared in a way described, 5 to 10 parts. When he employs a readily fusible glass in the manufacture of artificial stone, he prepares the glass by fusing together in a reverberatory furnace or crucible the following materials—Silicate of soda, 100 parts, sp. gr. 1.400 parts; oxide of lead, 100 parts; and in preparing artificial stone he substitutes for the 5 to 10 parts of prepared pumice-stone in the mixture before mentioned, 5 to 10 parts of the fusible glass. The invention also consists in a method of rendering artificial or natural stone, bricks, and other materials used for building purposes, less liable to decay. For this purpose the stone or other material is coated or saturated wholly or superficially with a solution of a soluble silicate, and has afterwards applied to it a solution of chloride of calcium, by which an insoluble silicate of lime is formed in the body of the stone or other material.

2,282. GEORGE TOMLINSON BOUSFIELD, Sussex-place, Loughborough-road, Brixton, Surrey.—*Manufacture of artificial stone.* A communication. Dated 29th September, 1856.—This invention consists in a composition of matter to be used as a substitute for stone and bricks for building and engineering purposes. For this purpose the patentee takes of ordinary chalk from 80 to 85 parts, and of slaked lime from 15 to 20 parts, by measure. The ingredients

are well pulverised and mixed together with sufficient water to give the proper consistency for moulding. The paste thus produced is then moulded with a proper degree of pressure, to cause the particles to adhere together into any form suitable to the purposes designed. After coming from the moulds the blocks or tiles are allowed to dry a few days in the open air, and are then ready for use.

#### RECENT BUILDING PATENTS.\*

1339. J. NORRIS, Junr.—*An Improvement or Improvements in the Manufacture of the Cutting Tools employed in Nail-making Machines.*—A communication. Dated June 5, 1856.—In forming such cutting tools, the patentee employs a mixture of one-half of the best sterling iron incorporated with one-half of malleable iron; or equal parts of white and gray iron producing a malleable iron. The cutting-tool being cast in either of these mixtures, and the ends and edges being chill cast, the cutter is dressed or faced on a lap.

2056. EUGENE ARMAND ROY, JOHN ARCHIBALD HALL, and WILLIAM THOMAS BINNS, all of Camden-town, Middlesex.—*Means of ensuring Draught in Smoke Flues or Chimneys.* Dated 4th September, 1856.—The patentees use a fan on the screw-propeller principle, to revolve in the flue or chimney, or in the pot or cowl, so as to propel the smoke and air.

2063. RICHARD ARCHIBALD BROOMAN, Fleet-street.—*Improvements in Buildings and Parts of Buildings.*—A communication. Dated 4th September, 1856.—The object of this invention is to provide economical means of constructing roofs, roof-frames, and other buildings or parts of buildings in iron. The parts are made in pieces, and so that they may be easily set up, taken down, and carried from place to place.

2083. PRIER ARMAND LE COMTE DE FONTAINE-MOREAU, Rue de l'Echiquier, Paris.—*Making Artificial Stone for Statues and ornamenting purposes.*—A communication. Dated 6th September, 1856.—The inventor mixes argil with red ochre or iron ores, in the proportion of about one-fifth argil. This mixture is pulverised and sifted, and thrown into recipients prepared for the purpose. It is then sprinkled with acidulated water. The product of this operation resembles ordinary plastic clay, and may be moulded and manipulated by pressure, or by any other known means. When required to produce ornaments like porcelain handles, the ordinary hand process is adopted, the joints being imperceptible after the baking. The material thus prepared and moulded to the required form is passed to the drying chamber, and thence to the kiln, where it is submitted to a temperature at least equal to that required for fire-bricks. At this degree of heat the product undergoes a certain amount of vitrification, which gives to it a polish and bluish colour, between that of iron and polished slate, and at the same time a hardness of texture which enables it to be advantageously substituted,—first, for granite and marble for pavements, chimney-pieces, table tops, statues, &c.; secondly, baked earths for retorts, boilers, and vessels of all kinds employed in chemical manufactures, the composition being in no degree altered by the acids.

Gas.—M. Emile Kopp, of Paris, professor of chemistry, has provisionally specified improvements in the manufacture of gas, which consist in new arrangements of furnaces and retorts in which gas is produced, either from coal or other organic substances, in such manner that the preparation of gas, instead of being intermittent, becomes continuous; the furnaces and retorts being constantly heated to the required temperature, and never being empty. By means of suitable mechanical arrangement, such, for instance, as an endless iron chain and a piston, coal or other fuel is gradually and continually introduced into the retorts, passes slowly through them, disengaging gas and being converted into coke, which coke or other residuum is continually discharged, hydraulic occlusion preventing any undue escape of gas, which latter remains constantly of the same quality during the entire time of manufacturing.

2077. JOHN JUCKES, Dame-street, Islington.—*Stoves and Fire-places.* Dated 6th September, 1856.—In carrying out this invention, that portion of a stove or fire-place in which the fuel is contained is arranged to turn on an axis at the back, and it has a grating or set of fire bars in front. The basket or fire-place may be made of various forms: it is, however, preferred to be of a spherical form, with a door at the top and the bottom, which is composed of fire-bars or otherwise for the passage of air. When the fire requires fresh fuel it is put into the fire-place through the doorway, which for the time being is uppermost. The door is then to be closed, and the fire-place or

stove is to be turned half way round on its axis at the back, by which the fresh coal will come below the well-ignited fuel of the fire. The peculiarity of this construction is, that the axis is only at the back, and the fore bars are in front.—*Not proceeded with.*

#### ON THE APPLICATIONS OF BOTANY TO ORNAMENTAL ART.

At a meeting of the Edinburgh Botanical Society, on the 9th instant, Mr. George Lawson exhibited a panel carved by Mr. B. Reeve, representing in its side ornaments Polydium alpestre and Poystichium Lonicitidis. In connection with this study from nature, he called attention to the inexhaustible source of novelty in design which the vegetable kingdom presents, and which he hoped would be made more fully available than hitherto, for although "flowers have in all ages been used by the aspiring ornamentist, and have ever been the basis on which the science of ornament has stood," much still remained to be done. Even in our own day novelties are occasionally introduced by enterprising designers; still, how easy would it be to catalogue all the vegetable forms that have actually been referred to in design. Of the ninety-three thousand living plants (not to speak of dead species), how few have actually come into general use for this purpose! Dr. Lindley, and, more recently, Mr. Dresser have done much to elucidate this very subject of the relations of botany to ornamental art, and with such aids, the wall of separation that has so long existed between the botanist and the ornamentist will surely be speedily broken down. Mr. Lawson then referred to some of the authors who had been instrumental in drawing attention to this subject, alluding particularly to Pugin's "Floriated Ornament," and to various writers in the *Builder*, *Art Journal*, &c. He proceeded—It is to be kept in view, when the artist is recommended to study nature under the light of science, that this does not necessitate a naturalistic treatment of his subject. Attention to botany is even more essential to him who would create a design by the conventional treatment of natural forms, than it is to the naturalistic designer. It is what anatomy is to the painter of the human figure. It enables him to modify his leaves and flowers according to the requirements of his design, without overstepping the boundaries of truth, and originating a caricature, instead of adapting nature to his special purpose. It is a common error to suppose that the artist has merely to take natural forms as his starting-point, and give these a geometrical disposition, modifying them according to his taste. Truth to nature is necessary in all decorations intended for an educated eye, and especially so in an age of science. And the beautiful laws of form, and of colour, of number, and of arrangements of parts, that prevail throughout the vegetable kingdom, are necessary to be known by the artist who has high aims. This knowledge loosens him from the trammels of a mere copyist, and gives him a wide range of conventional treatment, while his work assumes the character of an exposition of principles instead of a slavish copy of details.

It is a well-known fact that many of the finest carved works, in both ancient and modern buildings, are direct studies from nature; and several modern writers have lately pointed out to designers, that it is to "natural forms geometrically disposed" that they must all look for new inspirations. "By repeated copying," says Pugin, "the spirit of the original work is liable to be lost: so in decoration, the constant reproduction of old patterns, without reference to the natural type from which they were composed, leads to debased forms and spiritless outline, and in the end to a mere caricature of a beautiful original. It is impossible to improve on the works of God; and the natural outlines of leaves and flowers must be more perfect and beautiful than any invention of man."

#### METROPOLITAN BOARD OF WORKS.

##### THE REGULAR LINE OF BUILDINGS.

At a meeting of the Board, held on Friday, the 24th ult. a deputation from the Board of Works for the Westminster district attended, with reference to the building recently erected by Messrs. Broadwood and Sons, in the Horseferry-road, Westminster. The particulars of the case will be recollected by our readers. The Board of Works having refused to sanction the erection, the duty of ordering the demolition of the work was cast, by the very objectionable arrangement in the Act, upon the District Board of Westminster. That body, for their own protection, took the opinion of counsel, and the following is the substance of the opinion so taken. Mr. Bovill, Q.C. to whom the subject was referred, says:—

"I am of opinion that the regular line of buildings mentioned in the 13rd section does not necessarily mean a regular line of buildings from one end of the street to the other end. Many portions of a continuous street or highway are commonly known and considered as separate

\* From the Engineer.

\* Gleaned from lists in the *Mechanics' Magazine*, the *Engineer*, &c.



streets, are distinguished by different names, and often situate in different parishes, and it is in my opinion sufficient to bring a case within the section of the statute that the buildings in any part of a continuous street or highway are of such a number and character as to assume the form of a regular line of buildings in the ordinary acceptation of the term. The language of the 13rd section, which speaks of the regular line of buildings in the street, and not of the street, seems to me rather to lead to that conclusion, and I think the meaning is made clearer by the interpretation clause."

He went on to develop the grounds upon which this opinion had been formed, which he said was one of some importance, not free from difficulty, and suggested that a decision should be obtained in a special case to be submitted to a court of law. An opinion was also obtained from Mr. George Pownall, surveyor, which agreed with the views taken by Mr. Bovill.

Mr. Mills (a member of the deputation) said they attended from the District Board to ask this Board to give them facility for obtaining the fullest information upon this subject; not for the purpose of taking down the building, or to give any further opinion as to whether Messrs. Broadwood had complied with the Act of Parliament, but to put them in possession of all cases the Board might have on this subject. In calling upon the District Board to carry out the law as laid down by the Metropolitan Board, they really thought it was beginning at the wrong end, and that the Central Board should have the power of carrying out their own orders.

The chairman said they set there to administer the law, and had no further jurisdiction in the matter than the Act of Parliament conferred upon them. They had no power to demolish the building in question, as that was a duty cast upon the District Board, and could not now discuss any alteration in the law. Any information that was possessed by the chief office would, of course, be at the service of the District Board.

#### RESTORATION OF THE BASILICA, TREVES.

The traveller who descends from the surrounding heights into the valley of the Moselle, is chiefly attracted by two grand structures—the *Simeon's Gate*, which, according to Kugler, is a Merovingian structure, whose huge stone blocks have become blackened by the long lapse of time; while the *Basilica* rears its bold but slender brick structure up into the air. There can be no doubt that this is a Roman building, and the so-called Roman Baths, which rise at a short distance from the present city walls, present the same building material, and the same style, and it becomes probable that the whole neighbourhood was once occupied by a complexity of similar buildings. This Basilica has been considered hitherto to have been a palace of Constantine, a theatre, or a hippodrome. It is Professor Steininger, the assiduous searcher of the antiquities of Treves, who has proved its real destination, namely, that of a basilica, and any one who knows the description given by M. Wackernagel, of the Basilica of Pompeii, and compares them both, will be assured of the correctness of that belief. The basilicas of the Romans served as courts of justice, and as a meeting-place for merchants; and when of late the modern accessories of the building were removed, and the interior of the fine building had become visible, this turned out to be still more evidently true. It is to be seen now, that of the original Roman structure, there only remains the semicircular tower called *Helenen*, or *Hridenthurm*, in which is the bold arch of 60 feet span, and the western longitudinal building, with the two rows of large arched windows, which are separated by strong pillars, and a portion of the eastern wall, which may have been demolished on the building of the archiepiscopal palace. The whole building is constructed of brick, combined by layers of mortar, and forms a square of 180 feet long, and 88 feet wide, its height being 100 feet. On both sides of the semicircular building, in which stood the seats for the judges, rise the two last pillars of the longitudinal walls, and form turrets for the staircases, which reach above the roof, which serves for a vault. The front, turned towards the present *Paradeplatz*, in which is the main entrance, has large niches instead of windows, in which statues will now be placed, and above the pediment the Christian emblem will be raised.

As the soil has risen, through the lapse of centuries, 10 feet, a staircase leads on the west side down to the port. The many fragments found in the rubbish show, that the floor of the main building was paved with marble and granite plates, forming various designs. This floor rested on small brick pillars, through which warming conduits passed. The floor of the tribunal also must have been transected by heating conduits. The walls of the circular building, as well as the niches therein, were nicely painted or inlaid with many-coloured pebbles, mosaic-like, which forms a very humiliating contrast with the barn-like rooms now called Courts of Justice. When the soil around the Basilica had been removed, of late, a splendid piece of mosaic was discovered, which

was older than the building, as the walls had been built into its mass.

The remains of this Basilica had been presented by the municipality to the King of Prussia, who ordered its restoration as a Protestant place of worship. It was confided to the care of M. Schnitzler, the architect, and M. König, the builder, and they have made it such a structure as may hardly be matched this-side the Alps. If we fancy the height and breadth of the building, whose interior is not divided by either columns or pillars into several naves—its whole splendour and majesty be once apparent. On each side four rows of windows admit the light, to show us the ornamentation of the interior, which is quite in accordance with the simple yet grand style of the building. Strange also have been the fates of this mystical, long-neglected structure. When the Franks had made an end to the Roman domination on the Moselle, the Basilica of Treves was converted into a King's Court (*Königshof*), in which resided the palatines of the monarch, the suzerains of the Church, and, in fine, the bishops themselves. In the beginning of the eleventh century it was converted into a fortress flanked by turrets and fosses, until it got lost amongst the indifference of succeeding ages.

#### THE PAVING TILES OF THE MIDDLE AGES.

At the second *Conversazione* of the Somersetshire Archaeological Society, held at Taunton, some mediæval tiles from St. James's churchyard were exhibited, and the following remarks by Mr. C. E. Giles were read:—

The clay manufactures of the Middle Ages have hitherto not been sufficiently investigated, and consequently are little understood: ancient examples should therefore be in all cases preserved in their original positions if possible, but otherwise in public Museums; and the facts connected with them should be carefully recorded. The tiles found in the churchyard of St. James, Taunton, are, I think, of interest, from the fact that the design or pattern on them is only superficial, or painted by hand, as in the case of china-ware. It has been supposed that the superficial colouring on clay was introduced into England through Italy from the East, in the reign of Elizabeth; but as tiles are said to occur of this kind, of earlier date, the supposition is perhaps doubtful. In this case the pattern on the tiles seems to be of a much earlier character of design than is usually found in Elizabeth's reign. There are said to be tiles of this manufacture in the Mayor's Chapel at Bristol. An examination of the floors of our remote country churches in this district would, I think, throw some light on the subject. In the larger churches the floors have been "beautified" in the eighteenth, and "restored" in the nineteenth centuries; so that for these historical interest at least has ceased. But I have some idea that many churches west of Taunton, including Tolland, still possess remains of their ancient floors, to the colours of which in late years, in some cases, has been added a rich natural green. It is, however, certain that tiles with superficial colouring did not form the staple manufacture of the Middle Ages. The common type was made in this manner:—A thin square of clay was partially dried in the sun, and then impressed by a stamp, having a design in relief. This produced a pattern in cavetto, into the hollows of which clay of another colour was afterwards inlaid. The permanence of the work was then secured by a thin metallic glaze, which also gave richness and tone to the whole. Sometimes the hollows were never filled at all, and in other cases the pattern, instead of being in cavetto, was in relief. The first was, however, the usual type of manufacture throughout Northern Europe. South of the Alps, incised stone or marble supplied the place of the clay tile; and for the pattern-coloured glass or precious stones, that of the coloured clay. There are examples of this kind in Canterbury Cathedral, and elsewhere in Northern Europe. Sometimes, after the glaze of the surface has perished, the inlaid pattern has fallen out. This seems to have happened in the case of the tiles found at Messrs. Stuckey's Bank. These seem to be of rather rude manufacture, and were probably the four tiles at the corners or angles of a floor, the pattern of which was a diaper, consisting of circles and squares, interlaced, and containing a

*fleur-de-lis* in the centre. Probably they are of early fifteenth-century workmanship. Their margins prevent the patterns from uniting symmetrically; but perhaps the general effect of the floor was little worse on this account—the colour, and not the pattern, being in such cases the primary source of interest, as in the case of the ordinary Turkey carpet, in which no one looks for a pattern; and while our Axminsters, Wiltons, and Kidderminster, the designs of which have been considered, rather than the harmony of their colours, are so distressing in their obtrusive roses and cornucopias—the incomprehensible and oft-repeated interlaced design of the old Turkey carpet seems never to weary, and the modern designs for tiled floors have very commonly proved failures, and almost in proportion to the symmetry and continuity of their patterns. Still, in the case of the tiles alluded to, the separation should not have been in the form of pattern, which is unmeaning if not continued: the relief should have been sought in colour. The tiles are evidently of rude manufacture. Tiles are now produced by pressure on dry clay, the agent being either steam or hydrostatic power, which is applied until cohesion results. The cuts in the back are to keep the tiles from shrinking, and to hold them fast in the cement.

Mr. Elliot, at the close, said, according to the *Taunton Courier*, it was doubtful, whether any tiles had been discovered in England, that present the features of the Norman style of decoration, the most ancient being apparently of the thirteenth century. Having briefly described the process of manufacture most commonly employed, he observed that it appeared probable that the origin of decorative pavement was to be sought in the mediæval imitations of Roman pavements. In almost every instance where the ornamental tiles had been accidentally discovered, or dug up on the site of a castle or mansion, there had been reason to suppose a consecrated fabric had once existed. Among the earliest specimens of glazed tiles might be mentioned the pavement discovered in the priory church at Castle Acre, Norfolk. They were ornamented with escutcheons of arms: they were coarsely executed: the cavities were left, and not filled in with any clay of different colour. Sets of four, nine, sixteen, or a greater number of tiles, forming a complete design, had been sometimes found; but examples of general arrangement were very rare and imperfect. In the ancient system a large proportion of plain tiles, black, white, or red, were introduced, and served to divide the various portions which composed the general design. In modern imitations, where that division of compartments had been neglected, the effect had been unsatisfactory, having the look of oil-cloth or carpeting. The frequent occurrence of heraldic decoration rendered them valuable as an evidence or illustration of the descent of property, as at Great Malvern, the bearing of the successive lords of the chase and manor were exhibited, and finally the royal arms of England, the lordship having, by marriage, reverted to the crown. At Tawstock, Devon, were the tiles stamped according to the ancient process, with ornaments evidently copied closely from ancient originals, and in high relief—one of them bearing a *fleur-de-lis*, the initials T. W. and date 1708. At St. Decumans, Somerset, there were similar tiles with raised patterns. Evidences tended, in unison with the general character of decoration displayed in the tiles of the fourteenth and fifteenth centuries, to show that they were of English manufacture. In 1833, a furnace of brick was discovered on Priory farm, Great Malvern, constructed for the purpose of baking such tiles, and containing fragments similar to those which exist in the neighbouring churches. A similar furnace was discovered in 1837, in the parish of St. Mary Wiltton, near Droitwich, formed like that at Malvern. Now, though they had not discovered a furnace at St. James's, they had got as near to it as may be: as the children say in their play, "you burn." They had got the tiles with the glaze running one into the other, with the evidences of cinder upon the surface.

#### Books Received.

*Examples of Building Construction.* By HENRY LAXTON. London: 19, Arundel-street, Strand. Volume for 1857.

MR. LAXTON's work, to which we drew attention on the appearance of the first part, has now attained the form of a volume consisting of eighty plates of large size. It is intended by the author as an *aide-memoire* for the professional man and the operative, and is, in fact, a series of working drawings to a large scale, exemplifying the arrangement and details adopted,



in carrying out the several branches of trade requisite for public and private edifices." The details are selected from buildings by Messrs. W. Young, J. and J. S. Gwill, H. Laxton, G. T. Robinson, Scott and Moffatt, J. Morgan, J. T. Knowles, Smith and Thurston, P. W. Wyatt, Sir R. Smirke, J. Shaw, Gandy Deering, Hudson and Lewis, Brooks, V. Arnold, J. K. Pennington, Asplund, and Whichcord, G. S. Clarke, Pennethorne, Grissell, J. Billing, Sir C. Barry, J. Thomas, H. K. Abraham, and others. The volume contains doors, windows, shutters, balustrades, cornices, roofs, gates, seats, staircases, coloured brickwork, and many other items, and will be found of the greatest service, both in the architect's office and the builder's workshop.

#### VARIORUM.

A SET of very useful tables, by Mr. C. M. Willich, actuary, has been published by Messrs. Longman and Co. the purposes of which will sufficiently appear from the title, which is as follows:—"Interest Commutation Tables; for changing at sight any amount of interest at 5 per cent. into the equivalent amount of interest at any other rate, varying from 2½ to 10 per cent. Also, a Commutation Time-Table, for changing the number of days at 5 per cent. into the equivalent number of days corresponding to any other rate, varying from 2½ to 10 per cent." From the annual report of the directors of the Watt Institution and School of Arts, at Edinburgh, it appears that this school, which is one of the oldest in the country, having been established in 1821, is in a flourishing state. The total number of students attending its classes in mathematics, natural philosophy, French, drawing, modelling, chemistry, &c. in the course of the past year was 543, while the number of tickets sold was 825, a state of matters which the report gives as "highly satisfactory." Except for French (155 tickets), the mathematical classes attracted the greatest amount of attendance (92 students, exclusive of full-course ticket-holders). For drawing, there were 47 special students. At the annual meeting, Professor Pillans gently protested against the examination of candidates for Government appointments on English university routine principles exclusively, as English students had thus an advantage over others which did not necessarily imply superiority on the part of the former, although it promoted their success under examination.—The *Scientific American* is a weekly illustrated paper which ought to be more extensively circulated in this country than it seems at yet to be. We observe in the advertising columns of the number for 28th March last, that a good field is said to be open to builders, painters, oil and paint dealers, cabinetmakers, founders, blacksmiths, and others, at Minnieger, in Minnesota, as to which information is offered by Mr. A. W. Macdonald, at the *Scientific American* Office, New York. In the number of the *Scientific American* under notice, there are illustrations of a saw-mill in which the saws are adjusted to the position of the log in course of cutting, instead of the log to the saws. Another shows the construction of a machine for felling trees by hand-power; another, an improved diaphragm pump; and there are other illustrations besides these. A correspondent announces the discovery of a species of canteleuche in many of the States.

#### Miscellaneous.

**WAGES AT THE PORTSMOUTH DOCKYARD.**—Sir Francis Baring, M.P. has paid a visit to this port, and received a deputation from the sailmakers and ropemakers belonging to the yard, complaining that they were not paid wages on the same scale as the men of other departments. They felt it as a great grievance, says the *Hampshire Independent*, that while shipwrights were receiving 27s. a week and painters 23s. they only got 21s. Sir Francis thought the best course was to send a petition to the Admiralty. An order has since been received at the dockyard that the ropemakers and sailmakers should receive 4d. per day in addition to their present pay.

**PAINT ON PORTLAND STONE.**—My method is this:—Get some lumps of well-burnt, fresh chalk, or grey stone lime: break them smaller (about the size of walnuts): dissolve some pearlsh in soap lye (or "slatsh"), which can be had of soapboilers: boil it, and add it to the lime. Cover it over with an old sack, or the like: keep stirring it up with a stick, and when slaked and mixed, apply it hot to the paint of a good consistence (a brush for this purpose of the finest part of what carpet-brooms are made of), broom bass, or the husks of a large cocoa-nut. As a caution, cover your face with crape, and put on a pair of thick leather gloves. Let the wash remain for a day or two if you can, and then apply the brush used before. If any part still adheres, apply the wash as at first; afterwards, if it requires, wash it off with the clear water of the mixture, or common water.—T. GOODLIFFE.

**STAMPED OR INCISED STUCCO.**—Mr. B. Ferrey has patented a process by which common rough stucco may be indented with sunk ornamental patterns on the surface as the plastering proceeds, and whilst the materials are sufficiently plastic to admit of the desired impressions or indents being made. We shall take an opportunity to say something more about it.

**INDIA-RUBBER PUMP VALVES.**—It seems to be a good idea to imitate, by means of an elastic tissue like vulcanised rubber, the action of the valves in that living pumping apparatus, the heart and blood ducts. This has to a considerable extent been effected by an ingenious Frenchman, M. Perreux, who has patented his invention both in France and England, as well as elsewhere. This valve has two thin straight lips, which gradually thicken and spread out wedge-wise into the form of the stump of a tube, so that when inserted and fixed, lips upwards, in the throat of the pump, the slightest pressure of the water from below opens the lips apart, thus allowing the water to pass, and again closing on the cessation of the upward pressure of water, so as to retain what has passed to the upper side of the valve whatever be the downward pressure, which only closes the lips the more firmly. There is, thus, too, a clear throat, as it were, for the water-flow, without anything to retard its passage, or much chance of getting out of order, as the ordinary pump valve is apt to do, even from the least trifle wedging up the hinge of it, so as to prevent its thorough closure. M. Perreux, it appears, was awarded the silver medal for 1856, at the French Exposition d'Agriculture, for his invention.

**THE WORCESTER RAILWAY LITERARY INSTITUTE.**—A public dinner to celebrate the establishment of this institution took place last week at Worcester. It originated with Mr. A. C. Sherriff, the general manager of the Oxford, Worcester, and Wolverhampton Company. During Mr. Sherriff's residence at York he had had occasion to note the benefits derived by between 500 and 600 men employed on the North-Eastern line from the establishment of a "Railway Literary Institution." In this school, knowledge on various subjects particularly connected with the railway departments was imparted, at a very small cost, to the men. Mr. Sherriff, on going to Worcester, regretted to find no similar institution existing on the local railway, and suggested to the directors the desirability of such a society being instituted. The directors of the Oxford, Worcester, and Wolverhampton Railway assisted Mr. Sherriff in his purpose, and his efforts have been attended with very answerable results. Although no appeal has yet been made to the public for pecuniary assistance, nearly 600 have been raised, chiefly by the directors and managers of the company; and the dinner referred to, and the establishment of the institute, are the more immediate results.

**CHIMNEY CONSTRUCTION AND THE "SWEEP" SYSTEM.**—The Midland Association at Derby for the Suppression of the Use of Climbing Boys in Sweeping Chimneys, claim our aid (which we willingly give) in calling public attention to the necessity of architects and others constructing chimneys in such a way that there may no longer be the slightest pretext for employing poor lads to ascend chimneys for cleaning. The mischief of badly-constructed flues is greatly exaggerated by a prejudiced public and by interested swaggers; but the mere calling of attention to the subject may do much to check an increase of the evil, for it is to be feared builders and others, in the provinces at least, think little of suffering humanity, as embodied in the climbing boys of this country. There is a law on the subject (section 6 of 3 & 4 Vict. cap. 85), but this is often evaded, because it is no one's business to look after the builders of new houses, &c. Absurd chimney-pots are often an obstacle, in using the sweeping-machine, tending to perpetuate the use of boys.

**THE POPULAR ASSISTANT SURVEYORSHIP.**—"A Candidate" complains indignantly, that, in the midst of forty applicants for this situation who filled the room and the passage appropriated to them while awaiting the deliberations of the District Board of Works, who had advertised in our columns for an assistant surveyor, a stripling drove up, with his uncle, an influential member of the board, and was ushered into a special apartment, whence, after a mere show of examination of some few of those applicants who did not go away on seeing how the election was plainly destined to be decided, Mr. Stripling came forth, and was forthwith appointed to the vacant office, as was fully anticipated by all the more experienced and less sanguine of those candidates who had no influential uncles on the board. Our correspondent asks, what was the use of advertising at all in such a case? In our opinion, if the case be fairly stated, it was not only useless, but a cruel mockery, so to excite the hopes and fears of nearly half a hundred, no doubt meritorious, professional men in such a way.

**THE LATE JOHN BRITTON AND THE WILTSHIRE ARCHEOLOGICAL SOCIETY.**—The following letter has been addressed by the Hon. Secretaries to each member of the Wiltshire Archeological and Natural History Society:—"Sir,—Some of the members of the Wiltshire Archeological Society are desirous of expressing their respect for the memory of their late Vice-president, and honorary member, John Britton. For this purpose, and at the same time in acknowledgment of his zealous and long-continued labours in illustration of the general antiquities of England, and more particularly of those of the county of Wilt, it has been suggested that some memorial be erected in the church of his native parish, Kingston St. Michael, which is now to be restored. Mr. Britton had been for the latter years of his life in receipt of a small annuity pension from the crown. With his decease this expired, and his pecuniary circumstances having been found to be limited, it is further proposed that a subscription be raised to purchase an annuity for his widow. These suggestions are respectfully submitted to your approval, and contributions towards both or either of them, to be distinguished as donations to the 'Britton Memorial' or 'Mrs. Britton's Annuity Fund,' will be thankfully received at the bank of Messrs. Locke and Co. Devizes." We understand that the Marquis of Lansdowne, Mr. S. Esteot, Mr. Sidney Herbert, and Mr. Poulett Scrope, have each subscribed ten guineas towards the accomplishment of the objects proposed.

**PAVING THOROUGHFARES AT BIRMINGHAM.**—A plan for paving second-rate thoroughfares in this town has been submitted to the local Public Works Committee. The system, though new to Birmingham, has been for some time past in operation in North Staffordshire and other towns in the midland counties, and it consists in a diagonal arrangement of vitrified bricks, the chief advantages of which are represented to be great durability and solidity, as well as economy of cost compared with that of pebble and Rowley-rag pavements. The expense of the new pavement, including the laying, it is said, would not exceed 1s. 6d. per superficial yard, or one half of the pebble paving.

**INSTITUTION OF SCOTTISH ENGINEERS.**—A numerous attended meeting of engineers, presided over by Mr. Robson, lately assembled in the Philosophical Society's Hall, Andersonian Institution, Glasgow, to receive and consider the report of a committee appointed relative to the establishment of an Institution of Engineers. A series of rules were discussed and agreed to, and it was decided that the society should be styled the "Institution of Engineers in Scotland." The former committee consisted of Professor Rankine, Messrs. Walter Neilson, James R. Napier, and William Ramsay. The committee was re-appointed, Messrs. Robson, D. More, Alexander, Rowan, Doxnie, and McOrie, having been added to it.

**ON DISINFECTANTS AT SOCIETY OF ARTS.**—On the 22nd April, the paper read at the Society of Arts, Adelphi, was "On Disinfectants," by Dr. R. Angus Smith, of Manchester. The author began by giving some account of the precautions taken in reference to this subject in ancient times. Having expressed it as his opinion that much of the knowledge possessed by the ancients on these subjects has been lost, Dr. Smith proceeded to discuss some of the various changes which take place in bodies, particularly fermentation and putrefaction, and, after touching upon many substances which had been used as disinfectants, he gave the results of some experiments made by Mr. McDougal and himself in reference to this subject. They found that of all bases magnesia was the best to use for the disinfection of manures, as the only one which gave an insoluble ammoniacal salt, and preserved the ammonia at the same time, whilst it was an agent also employed regularly by nature in the economy of vegetation;—that of all acids sulphurous acid was the best, and its power was at least equal to chlorine, but it had not the quality which chlorine possesses of decomposing ammonia; whilst, when it had done its work, it was either converted into a harmless solid, as sulphur, or, by combining with an alkali in the soil, became a sulphate, another agent used by nature. They combined the base and the acid, and found that by this means disinfection was nearly completed by the use of only a small portion of material. They had tried the carbolic acid from coal tar, a homologue of creosote, but had not been able to produce good results by it alone. When the sulphite acted there was still a small remaining smell, which the carbolic acid removed; they, therefore, added to the sulphite about 5 per cent. of carbolic acid, and so produced their disinfecting powder. Dr. Smith then gave some account of the successful use of this powder, particularly in the town of Leek, which had recently been attacked by an epidemic, and when the disinfectant was applied to the principal sewers and cesspools, the disease was found gradually to abate. A discussion ensued, in which Mr. P. H. Holland, Dr. Milroy, Messrs. Dugald Campbell, Robert Rawlinson, and the chairman took part.



## ACTION ON AN ACCOUNT FOR BUILDING A CHURCH.

—The case of Messrs. Pearson, builders, against the Rev. Wm. Coke, was heard at the last sitting of the Ross County Court. It was brought for settlement of an account for building the new church at Brelstone-green, Marston. For the plaintiffs, it was alleged that in July, 1854, Messrs. Pearson prepared drawings for the said church, and delivered a tender for the erection of the same. Mr. Nicholson, of Hereford, architect, afterwards prepared a specification, and Messrs. Pearson contracted to do the building for 525*l.* making an allowance of 40*l.* in that amount for old materials, but Mr. Coke pleaded the 40*l.* as a set-off against the amount of the contract. The sum of 53*l.* 10*s.* 10*d.* was paid on account of the original estimate, and extra work done. After some evidence and discussion, the judge said it appeared to him that Messrs. Pearson were entitled to 525*l.* plus the old materials, and if the matter was misunderstood by Mr. Coke, that was no reason why Messrs. Pearson should suffer. From the terms of the contract, Messrs. Pearson were entitled to a clear 525*l.* in money. Mr. Coke raised an objection, but the judge said he was bound by the mistake of his architect, if it was a mistake. The specifications included the old materials. He had no doubt whatever that Mr. Coke was under the impression that the 40*l.* were to be allowed off the 525*l.* Judgment withheld.

**DOVE-TAILED MASONRY.**—Provisional protection has been secured by M. Gustav Julius Günther, for a method of strengthening the construction of masonry by cutting building stones into such shapes as shall cramp together in various ways, so as to imitate a piece of solid rock in mass, even independently of cement or mortar. The principle is not new, and, indeed, M. Günther, to some extent, admits this, but we rather think it has been patented already: at all events, we remember noticing the model of a bridge constructed on a somewhat similar principle, which was exhibited (as a subject of a patent, if we mistake not) at the Great Exhibition of 1851. The same principle, it is obvious, is applicable to brick construction, to which allusion is also made in the prospectus addressed to capitalists by M. Günther, and has been adopted in more than one instance.

**SCULPTURED STONE MONUMENTS IN SCOTLAND.**—At a recent meeting of the Society of Scottish Antiquaries, held in Edinburgh, a paper containing descriptive notices of the localities of certain sculptured stone monuments in Forfarshire, namely, Benvie and Invergownie, Mais and Strathmartin, Monicfeth, Cross of Camus and Arbriolot, was read by Mr. A. Jerviss.

**THE SHEFFIELD CRIMEAN MONUMENT.**—The committee have made such progress in this movement, that it has been resolved to advertise for designs for the monument, the cost of which shall not exceed 1,200*l.* It is intended that the designs sent in shall be opened to the inspection of the public, previous to selection.

**WORKS AND PUBLIC BUILDINGS.**—The Commissioners of Works and Public Buildings expended in the year ended 31st March, 1856, 153,934*l.* for Royal palaces and public buildings; 81,377*l.* for Royal parks and pleasure-gardens; 124,945*l.* for the New Houses of Parliament; 13,158*l.* for the General Repository of Public Records; 5,554*l.* for Holyhead Harbour, &c.; 21,807*l.* for the salaries and expenses of the Office of Works, &c.; 64,962*l.* for the British Museum buildings; 21,407*l.* for Battersea-park; 19,658*l.* for Chelsea-bridge; 22,962*l.* for the Chelsea embankment and public roadway; 5,952*l.* for the Downing-street improvements, new public offices, &c.; 11,000*l.* for Buckingham House, in Pall-mall; 3,726*l.* for Windsor improvements; 200*l.* for the Nelson monument. The total sum expended was 604,707*l.*

**A SLIGHT DIFFERENCE.**—What can be said to explain the following tenders for the plumber's and painter's work, to be done to twelve houses, Leabridge-road, for Mr. Cluff? Mr. E. Williams, architect.—A. B.

J. Tuncliffe.....	2635	0	0
C. Crist.....	456	0	0
Allard.....	455	0	0
Johnson and Rowland.....	432	0	0
W. J. Thorpe.....	399	10	0
H. Howe.....	397	0	0
J. Gurdidge.....	392	0	0
J. E. Waldon.....	360	0	0
S. Leonard.....	350	0	0
R. Wiltshire.....	347	0	0
R. Dulham.....	337	0	0
S. Eaton (accepted).....	330	0	0
G. Wollaston.....	320	0	0
C. and W. Brooks.....	305	8	0
W. Knowles.....	296	0	0
S. Taylor.....	283	0	0
Shaw and Wood.....	251	10	0

**MONTROSE WATERWORKS.**—These works are nearly in a workable state. The contractors have made good progress with the works at Kinnaber, and the reservoir at Sunnyside. The well at Kinnaber is 22 feet deep and 25 feet in diameter. The buildings for the water-wheel and pumping machinery are finished; the wheel is 12½ feet in breadth, and 16 feet in diameter, working power, 20 horses. The water will be forced in a continuous stream into the reservoir, which latter is being built with stone sides and brick bottom, and will be 12 feet deep, and contain above 30,000 gallons. It is so situated as to enable the water to rise to the highest floor of the most elevated buildings in the town. The pipes to the town, which are laid, are nearly 3 miles, or about 15,000 feet, in length. They are connected with the old pipes and the reservoir at Lochside, which also they can supply.

**DUNDEE NEW HARBOUR WORKS.**—The contract for these works has been let to Messrs. Carslairs, Mitchell, and Co. of Kirkcaldy, for 36,138*l.* Mr. Over the harbour engineer's estimate was 39,998*l.* Of seven offers lodged by different contractors, two were above that amount and five below. Three of the tenders were within 500*l.* of each other. The lowest was that accepted. Mr. Carslairs, of Kirkcaldy, was the builder of the railway station and viaduct at Newcastle, and Mr. Mitchell, of Montrose, is also a railway contractor. One of the other six tenders was only a small sum above that accepted. The work estimated for includes the carrying of the main common sewer (which discharges itself into the present tidal harbour) out to the river at the south-east point of the river wall; underfooting the quay walls of the present tidal harbour; the new quay walls; scouring tunnels; masonry of the 60 feet wide new entrance lock; and filling up between the new walls, forming quays, with the earth taken from the new dock. The present east tidal harbour will thus be converted into a wet dock, as authorised by the new Harbour Act, and sanctioned by the Admiralty: the iron gates will be a separate contract. The completion of the north wall of Victoria Dock, with its lock, during the progress of the works now contracted for, would give an immense addition to the dock accommodation of the port. The contractors will commence their operations during the summer.

**THE WATER COLOUR SOCIETIES.**—Both societies are now open, and the collections are very satisfactory: we are forced, however, to postpone our notice of some of the more important works.

**ARCHITECTURAL ASSOCIATION.**—The dinner of the members of the Association and their friends will take place on Tuesday evening next, at 7 p.m., at the Albion, Great Russell-street, Covent-garden.

**REPORT ON CLOSETS.**—The Sunderland Sewerage Committee have reported to their town council, on "Answers from various towns respecting water-closets." The report states in the outset, that the committee had caused extensive inquiries to be made through their surveyor, among the fully drained boroughs and cities of the empire, relative to the influence of such closets; and it is remarked in conclusion, that the information, liberally furnished, "whilst it shows that in a few and exceptional cases the inconveniences connected with water-closets, of which so much has been said, have arisen, conclusively proves that they have been, when arising from the ignorance of those employing them, very temporary, and in many cases, that of Urbidge for example, so partial as to have hardly existed at all. The only cases in which they have been extensive or permanent, have been those in which the water supply has been inadequate or ill managed."

**NORFOLK AND NORWICH ARCHEOLOGICAL SOCIETY.**—The annual meeting of this society was held at the Guildhall, Norwich, on Wednesday in last week, the Rev. J. Bulwer in the chair, when the annual report was read, congratulating the members on the flourishing state of the society. The report was adopted, and other official business transacted. The secretary then read a paper from Dr. Hussenbeth respecting mural paintings, especially those discovered in the church at Lymington, Norfolk, in 1852. The chairman was rather surprised at the statement in the paper, that these paintings were done by itinerant decorators. He thought that was scarcely possible, for though the majority of them were rude, many of them were exceedingly well done, and showed high attainments in art. Mr. Fitch said he had received a communication from Mr. D. Gurney and Mr. Pettigrew, stating that the Archeological Association of England would hold a meeting here in August, under the presidency of Lord Albemarle. He (Mr. Fitch) was sure that he expressed the sentiments of the members when he said that they would give the association the same hearty welcome as had been given to the Archeological Institute, when that body visited Norfolk. A vote of thanks to the retiring secretary, Mr. Harrod, was then passed, and the meeting separated.

**MONUMENT TO THE LATE MR. ATTWOOD, AT BIRMINGHAM.**—It is intended to erect a monument in Birmingham to the late Mr. Attwood (of Currency celebrity, if we mistake not), and a sum of 800*l.* has already been promised to that end. Mr. Hollins, of Birmingham, and Mr. Thomas, of London, were to be invited to furnish designs or models for the monument, to be erected on a site not yet determined upon, the cost not to exceed the sum of 800*l.*

**SURVEYOR TO LOCAL BOARD OF HEALTH, MERTHYR-TYDFIL.**—Mr. J. W. Hatton has been re-appointed surveyor for the ensuing year, at a salary of from 150*l.* to 175*l.* per annum.

**CANADIAN RAILWAYS: STONE AND WOODEN BRIDGES.**—Another accident, similar to the one which recently occurred on the Great Western, at the Desjardins Canal, in Hamilton, though not accompanied by its appalling result, took place lately, at a place over the Muddy Fork, between New Albany and Salem, Indiana. Two passenger-cars were precipitated 15 feet into the water, by which one person was killed and two others were severely injured. The Great Western will be compelled to substitute stone and iron tubular bridges for the present wooden ones, said to be 236 in number. The Burlington suspension-bridge seems to be insecure. The *Hamilton Banner* asks, "Who is responsible for the safety of the suspension-bridges in the Burlington Heights over the Desjardins Canal? Is it true that it has been condemned as insecure by an engineer?" On the Grand Trunk, the bridges are all of stone and iron girders. The directors have given directions for a thorough and complete inspection of bridges; and Messrs. Shanley, Keeper, and Starke, the company's engineers, are engaged in that duty.

## [ADVERTISEMENT.]

## TO THE ARCHITECTURAL PROFESSION, BUILDERS, PROPRIETORS OF HOUSE PROPERTY, &amp;c.

GENTLEMEN,—It has come to our knowledge that, in several instances, persons have been deterred from using iron shutters through fear of being subjected to the trouble, annoyance, and expense that have been experienced by those who have been induced to adopt the revolving shutters of other makers, which have in some cases been mistaken for those of our manufacture, and thereby prejudicing our interest. We therefore feel it incumbent on us to state that since our first introduction of Revolving Iron Shutters, in 1836, we have fixed many thousands in all parts of the United Kingdom, and also exported great numbers, without a single failure, whilst, on the other hand, we have been frequently called upon to adjust and put into working order, and in several instances to remove altogether, the revolving shutters of our competitors, both of iron and wood, though but a comparatively very short time in use, and fix our own in their place.

Our shutters are fortunately too well known to require us to publish individual testimonials, but we confidently refer to any of the numerous parties we have ever supplied, amongst which will be found the Royal Exchange, most of the bankers, large establishments, and public buildings in London and provincial towns. As an instance, the eminent firm of Swan and Edgar, in Regent-street and Piccadilly, were the first to adopt them to a large extent; a great number were fixed by us for them eighteen years ago, which are now in perfect working order and efficiency, and we continue to guarantee them so at a very trifling annual expense. We also beg distinctly to state that every real improvement in revolving iron shutters has been effected by ourselves, or has become ours by purchase, for the purpose of being incorporated with the practical suggestions of nearly twenty years' most extensive experience, aided by the command of powerful and appropriate machinery. Of this nature is our new Patent Interlocking Curvilinear Shutter, which is suited for all purposes, particularly for mansions and private houses, being lighter, stronger, and cheaper than any other, and is effectually secured from rust by a patented process.

In conclusion, we beg to observe, that availing ourselves of the kind and extensive patronage so long afforded us, we have made such additions and improvements to our extensive works and machinery, as will enable us to reduce our prices in all cases to the level of any other makers', and at the same time maintain the well-known superior character of our works, and to execute all orders with which we may be favoured, with promptitude and despatch.

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# The Builder.

VOL. XV.—No. 744.



THE Exhibition of the Royal Academy, which opened on Monday last, though containing many beautiful paintings, is not equal, in the interest and merit of the works generally, to the exhibitions of recent years. The steady progress and the excellence of British art are sufficiently established as facts, to prevent our regarding the present evidence otherwise than as exceptional; and it may be to the advantage of artists, as of others engaged in intellectual pursuits, from time to time to allow an unusual interval to elapse between the production of their works: the mind is freshened by such relaxation, and mannerism is avoided. The chief of the painters who exhibit this year are Cope, Creswick, the two Coopers, Cooke, Dyce, Dauby, Egg, Frith, Frost, Sir J. W. Gordon, Grant, F. Goodall, Hart, Herbert, Hook, Horsley, Knight, Leslie, Sir E. Landseer, Mulready, MacIise, Millais, H. W. Pickersgill, F. R. Pickersgill, Poole, Patten, Roberts, Redgrave, Stanfield, Stone, and Witherington; besides Philip, Solomon, Rankley, Ansdell, Lintell, Linton, and others who have made a name, not in the ranks of the Academy. For the most part, however, these contribute a smaller number of works, and those less remarkable than they are accustomed to send. Cope repeats the subject of his fresco in the Peers' Lobby of the Houses of Parliament, in oil; and Mulready exhibits (138) "The Younger Brother," a picture painted for the Vernon Gallery, in pursuance of the will of the donor. MacIise's principal work in oil is (78) a picture of Peter the Great with his "rough retinue," working as a shipwright at Deptford, visited by William III. a painting marked by the artist's usual invention and elaboration, but which it is scarcely possible for any architect to examine without the impression of faultiness in the perspective; and whoever the observer may be, he may look long before discovering that the blow aimed by the stalwart figure with the adze, is not aimed at Peter but at the block of wood behind him. Errors in perspective and in the drawing of architectural forms, are more general than they should be; and though in figure compositions, some departure even, from the strict ground-plan, in perspective, may be justified on the score of gain by a compression of the interest, nothing can be justifiable which can mislead as to the artist's intention. *Painting*, as an art, would have stood even higher than it does, had there been a higher appreciation of *architecture* in the Academy, and the required facilities given for architectural study. It is impossible, however, to look at the works of David Roberts, without feeling that we are under a debt to him for some help which his works have given to the maintenance of public interest in architecture: though his general perspective, admirable light and shade, and colour, and his skilful grouping of accessory figures, fill the eye in spite of the inattention to delineation of details. His principal work this year is (41) "Interior of the Duomo at Milan."

The pressure which there is upon us just now, prevents any notice of some of the most deserving works in the rooms. Were it otherwise, the points as to the philosophy and principles of general art, which there are of

interest in the present position of architecture, connected with what is called Pre-Raphaelitism, would naturally lead us to that school with feelings different to the ordinary curiosity. Hunt, we may say, this year does not exhibit, and there are comparatively few other works of the kind referred to that would deserve notice. What are exhibited by Millais ought to afford instruction, whether by their defects or their merits; for, they show, fortuitously for the architect of our day, how narrow is the line that separates real excellence from caricature or exaggeration. In the picture by the artist just named, called "A Dream of the Past, Sir Isumbras at the Ford" (283), the beauty of childhood is exquisitely rendered, notwithstanding the enormous eyes of the little girl held on the horse's neck by the aged knight, whose countenance so well expresses the *chevalier sans peur* as *sans reproche*. Such a combination of forms of expression is indeed art of the highest class, and we almost forgive the wooden horse and some other portions of the work which are not true to nature.

The north room, which of late years has not been given up even in name to *architecture*, contains but a poor display of architectural drawings. Indeed, the most interesting works in it are a really extraordinary series of drawings, forty-two in number, by MacIise, illustrating the story of the Conquest. The architectural drawings are confined to the lower portion of three sides of the rooms. If we wanted an endorsement to our regret at the inattention to architectural forms—wherein it might be thought a new field lay open to painters in oil—it would be afforded by a work that occupies a prominent place, namely, (1025), "The Bellot Memorial," in which Greenwich Hospital is rendered in a style of delineation that might make an admirer of Wren or Inigo Jones indignant.—Several of the drawings are new presentations of old faces. The designs for the Memorial Church, at Constantinople, by Mr. Burgess and Mr. Street, are both shown in part; that is to say, of the former architect's design, there is the perspective view of the exterior enlarged, by Mr. E. S. Cole (1009); and of Mr. Street's, a south-west view (1012), and a view of the interior (1132). The latter architect also exhibits a south-west view of his design for the Cathedral, at Lille (1010). The towers seem to have been raised in the design, since it was exhibited in Suffolk-street,—at least, such is the impression from recollection—the design gaining thereby. If we are wrong, our error testifies to a fact that well might be borne in mind generally,—that a single perspective view is really incomplete for purposes of representation—because it shows, especially in the case of interiors, the appearance of the object from a single point, whilst the impression is usually derived from many points of observation. The practice of drawing in perspective, however, it need not be said, is an indispensable aid to good design. Mr. Street also has an interior view of his design for the Lille Cathedral (1015). For the same building, there is a design by Mr. J. L. Pedley (1092)—with the full cathedral plan, western spires of open work, and a square central tower—in which the general grouping is successful. Mr. J. T. Wood exhibits a drawing (1006) of "The Casa Stralla, Mondovi" (in Piedmont), as altered and re-arranged from his designs,—showing a building with plain Italian dressings and cornice-like strings, which may be those of the original building, but which too nearly resemble one another to allow any effect of proportion or breadth. The manner is one that, we apprehend, some English architects—in works which we have often referred to—have shown the capability to improve upon. With proper provision of leading features, any number of stories may be grouped in three general divisions—and three form perhaps the number that

produces the best effect,—whereas many recent English designs, like the example before us, fail from inattention to a due subordination of parts.

Mr. C. J. Richardson's "Suggested Entrance into Hyde-park," which he shows with houses that are being erected on the estate of the Earl of Harrington (1007), is considerably better than many of the park entrances of very recent date, where one wonders why poverty of thought should necessarily attend upon elements of effect such as disposition of ground-plan, and the details of piers and railings. The lodges of Greek character, of course—as well as the entrances at Hyde-park-corner—are better, and may be again appreciated as they merit. The author of the present design has, however, placed his equestrian figures in a direction crossing the line of route, in the objectionable manner of the statue over the archway of the Green-park; and some of his details are not good by standard of Italian precedent—which it is well to regard for some purposes of convenience—and do not suggest by their beauty, a particular reason for their introduction. The "Cambridge Asylum for Soldiers' Widows" (1008), which is now being completed by Mr. Ferrey, makes a good group of buildings in red brick and stone; and the same architect's "Design for a Bleaching Establishment" (1016), with few other features than are comprised in the simple arrangement of the buildings about an elevated centre and a tall chimney-shaft, and in the overhanging eaves and low-pitched roofs, realizes some of the chief qualities of architectural effect, which are neglected in many more elaborate productions.

The "Design for the National Discount Bank, Mark-lane Chambers, lately erected" (1032), by Mr. N. T. Randall, is scarcely equal to other recent buildings in the City in regard to freshness of invention; and the arrangement of the stories would be open to some of the observations which we have made above. Messrs. Wehnert and Ashdown exhibit (1026) a large view of Milford, Pembrokeshire, the property of the Hon. R. Fulke Greville, with the proposed docks and improvements. Mr. Teulon's "projected church," at Hastings, "as designed for the original site" (1033), is a cross church,—the tower, east of the transepts, terminating in an octagon and a tiled capping; and it has a western porch carried up, so as to be in effect a transept. The design exhibits some details of unusual character. Greater merit, however, is displayed in Mr. Teulon's "Small Brick Church, at Barringham, Lincolnshire" (1129), which, without buttresses, and with little more decoration than is got by *voussoirs* of dark bricks,—by simply raising a portion which is square on the plan a little above the general height of the walls, and covering with a pyramidal roof, into which the other roof joins,—realizes, like one of the designs already mentioned, more by its plainness than many another does by its elaboration. Mr. J. James's design for a congregational church at Cheshunt (1037), has a good tower, with a lantern and a tile-covered spire, that evidently owe something to published sketches from continental buildings. The design proposed for the rebuilding of Teddington church, by Mr. R. W. Armstrong (1046 and 1079), has long transepts, a tower and spire at one side, and a polygonal apse to the chancel, with gables to the windows. Mr. Sydney Smirke's contribution is a "Design proposed for the Reredos to the Choir of Lichfield Cathedral" (1083), where the panelling is intended to be ornamented with the mineral products of the diocese. It appears to be of later character than the structure, and seems too much a repetition of parallel lines with some minor details to which exception might be found. No. 1134 is an exterior view of the "Percy Chapel, Bath," by Messrs. Goodridge and Son, which it may be



recollected, from an illustration that we gave of it, has a large polygonal area in the centre of the plan, which is here shown carried up as a lantern, which again is terminated by a smaller lantern, with, as shown, somewhat too heavy a capping. Another of the works which we have illustrated is Mr. Horace Jones's "Sovereign Life Assurance Office" (1063), at the corner of Piccadilly and St. James's-street.

Mr. Falkener's contributions are, as usual, interesting and valuable. The chief of them is (1056) "Ephesus—a Restoration of the City," from plans and measurements taken on the spot, in which the theatre, the diameter of which Mr. Falkener states was 40 feet greater than the length of the major axis of the Colosseum, occupies the foreground—the Grand Agora or Forum, with a lake in the centre, being amongst the other interesting objects. Of a number of "Oriental sketches," one (1034) taken at Aiaslik, near Ephesus, represents the gate of the Mosque, near which is a circular tower, the shaft of which has a curious pattern in red on a white ground. He also shows an interior view of the Mosque (1036), and some of the curiously-shaped head-stones, in a sketch of a Turkish cemetery at the same place. Mention should be made amongst the views, of one good one of the "Amphitheatre at Pola" (1044), by Mr. J. Bell. The views, however, and some other matters of interest we must leave, many of them, unnamed, mindful of the other topics of interest that call for attention this week.

It is curious to remark the change that is being made in the treatment of Gothic architecture; with the object and intention of which, however, we can feel more satisfied than with the result. The now common pointed arches with the heads filled in with blank masonry, or merely pierced so as to leave large blank spaces, as shown in recent designs for domestic and municipal buildings, seem to us to afford not the best evidence of good use of the resources of the style, and in favour of the advantage of restricting attention so much to the models of the earlier periods. Venetian and other forms have been introduced into our modern English Gothic, to a greater extent than the merit of the forms would justify. This is seen, we think, in the predominance of pointed arches to windows in exteriors, even though the buildings be not arcuated internally, and in the use of singularly inelegant cusping (generally soffit cusping) to arches of great size, only trifoliated in the head, if we may so say. In some respects, we think Mr. Scott even could have done better than the design for the exterior of the Town-hall at Halifax, Yorkshire (1073), which has a tower, too, crowned with a roof and lantern-capping of disproportionate size; but we admire much, the design of the separate bays, and the interior generally. Of this last there is a view in No. 1067. The cuspidation here—on the principal arches of the roof—is in nowise large and clumsy. The arches themselves are filled in with quatre-foils, and are supported by hammer-beams bracketted from over the wall-shafts.

A work also of a modified Gothic style is Mr. A. Bell's "Little Dalby Hall, Leicestershire," of which the south front is shown in 1048. The coloured materials, we observe, are introduced in due subordination, and with judgment. Of similar character in intention is the "Town-hall at Cork, Ireland" (1090), by Mr. J. P. Jones. In the "Monument" about to be erected at Melbourne "in memory of the late Sir Charles Hotham" (1111), we can discern, we think, and can commend, Mr. Scott's object of novelty. The present design, however, we submit, wants qualities which are equally necessary. Whilst we are alive to the mistake sometimes made of condemning forms because of a far-fetched resemblance to something that is deemed vulgar, there really are particular structural forms, adapted to certain objects, which should not be repeated under different circumstances. The shaft in the design before us would be well suited for that of a Gothic candlestick, or a modern table-lamp; whilst in the large scale, the shaft—provided with regular capital and base—would have the fault of the recent English imitations of the Roman monumental columns, in being intended apparently for a weight very much beyond that which it is made

to support. Possibly the design may follow some ancient models; but the objection is not then removed. Mr. E. P. Anson's novel and successful "Eastern Corridor at Merchant Tailors' Hall" is shown in a view (1050). "The New Post-office and Electric Telegraph Station at Calcutta," of which Mr. M. D. Wyatt exhibits an exterior view, is designed in one of the Indian styles of architecture, with arcades in two stories—the arches tall four-centred pointed—with a large arch of entrance, bulbous domes, and an octagonal turret with balcony and clock. Two original sketches of a design for the Government Offices, in the Italian style, with superimposed orders, are shown in Nos. 1069 and 1070, and a study for the Foreign Office, by Mr. C. F. Hayward, of the same character of Gothic as we have been remarking upon, is shown in No. 1071. It has an open arcade on the first floor, and has considerable novelty in details. Two or three of the designs for the Liverpool Library and Museum are here represented by views.

Drawings of objects of decorative art there are hardly any; but the "Composition for a Ceiling" (1103), by Mr. J. Warwick, deserves to be mentioned for some details which are in good taste, and are well drawn. The festoons on a surface which is horizontal, of the Adam school, should, however, be avoided. Another ceiling, by the same hand (1107), has more of the Louis Quatorze element. Mr. J. H. Powell exhibits a design for stained glass for the great west window of Beverley Minster (1133). The subjects in the side compartments are carried across several bays, but are not out up disagreeably by the mullions. The only other drawing which we had marked for notice is "The Albert Bridge, Windsor" (1087), designed by Mr. Page. It is an iron bridge of one span, and the spandrels of the arch are filled in with circles and Gothic cusping. There are, however, a few houses, as one designed by Mr. R. K. Penson, and built in Cardiganshire (1084), with a square tower, and a round tower at the angle,—"*Arlé Court, near Cheltenham*" (1093), Gothic of a different character, by Mr. T. M. Penson, and some churches and chapels which we have not noticed. But, the present state of what once had some title to its name—the Architectural Room,—if it might afford a peg on which to hang observations useful at the juncture, would hardly bear out the claims which we have so often preferred for the ascription of merit to English architects.

#### ST. JOHNSTON, COUNTY DONEGAL, IRELAND.

The foundation-stone of a new (R.C.) church was laid here on Saturday, the 4th of April, by the Right Rev. Dr. Magetigan, R.C. Bishop of Raphoe.

The plan is that of a Latin cross, with porch and sacristy in addition. The entire length will be 109 feet 5 inches, and the breadth across transepts, which will only project sufficiently for the introduction of side altars, will be 56 feet 5 inches.

There will be a bell-gable over the chancel arch, and the height to the summit will exceed 70 feet.

The light will be derived principally through traceried windows at the extremities of the cross, and the roof will of course be open.

Over the chancel arch will be a representation of the Agnus Dei, the ground-work being ornamented with a scroll pattern. On either side of chancel arch will be brackets, supporting figures of SS. Peter and Paul. The transept arches will have plain single soffits, relieved with polychrome. All the masonry of the walls will be visible, pointed and coloured. The chancel walls, as high as the window-cills, will, however, be lined with freestone. The principals of the chancel roof will be arched, and the spandrels pierced with foliated circles. The nave roof will be on the trussed collar-beam principle. All the windows will have scissor arches.

The principal altar will be supported by eight marble columns, and will stand against a freestone reredos, divided into seven compartments, the central one rising higher than the rest, having a gablet crowned by a crucifix, beneath which will be the tabernacle.

The floor of the chancel will be laid with encaustic tiles.

The side altars will be supported on brackets, backed by three arched and gablet compartments: above the centre one, on the south side, will stand an image of the Virgin, and on the north side a figure of the patron saint. The font will be placed at the west end of the church, and will be constructed of native marble and freestone.

The architect is Mr. Edward W. Godwin, of Bristol.

#### ROME.\*

In our last article upon this subject, in the passage relating to the capture of the capitol and arx by Herdonius, p. 217, by a printer's error the word "Forum" was substituted for *forum*, thus destroying the sense of the argument.

Much of the ambiguity of the old writers in the use of the terms *Arx* and *Capitolium* may be traced to the changes that lapse of time produced in the destination of these objects of antiquity. The term *Capitolium*, originally applied to the temple and its precincts only, was afterwards used for the whole hill when the fortress became of less moment than the chief abode of religion,—in which sense it is found in the *Notitia*, and continued to be used throughout the Middle Ages. So did the term *Arx*, in its true sense applicable to the fortress only, become applied not only to the whole hill, but even to the temple itself, when the citadel had ceased to be maintained for military purposes. Those conversant with the works of Livy will recollect his frequent use of the terms in question, as indicating two distinct localities, though in close proximity,—as *De arce capta, capitolioque occupato—nuncii veniunt*: the two together meaning evidently the whole hill. Again, in the same writer, the term *Arx*, by poetic license, is employed in the sense of the whole hill,—as *Magna pars tamen earum in arces suos prosecuta sunt*. Again, the use of the *Capitolium* as a military station, as well as the *Arx*, is proved by such passages as *presidia in arce, in Capitolio, in muris, &c.* Hence the *Capitolium* itself was frequently designated *Arx Tarpeia*, or *Capitolina*, a phrase that has occasioned much confusion, though in such cases the distinctive appellation indicates that it was not the *Arx* that was referred to.

The preceding remarks show how loosely these terms were used, and in the language of the poets still further embarrassment of the question arises from such terms as *Mons Tarpeius—Rupes Tarpeia*, often used without any precise signification. In fact, it is by the context only that the value of these terms can be judged of, for the true secret of their meaning lies in all probability beneath the surface of the soil, and the spade may yet be destined to terminate a contest which the pen seems potent only to embitter. One more opinion we will adduce before leaving this subject to futurity for its solution. In the *Quarterly* for September last, is a review of Mr. Dyer's article, in which, what may be termed a fourth theory, is advanced, namely, that originally the *Arx* was north, the temple south; but in later times the *Arx* was disused and forgotten, and the temple sometimes usurped its appellation. The writer then gives a translation of the famous narrative of Tacitus, descriptive of the assault of the Capitol by the soldiers of Vitellius, and comments with much ingenuity upon the various points of the description, which he argues clearly indicate the southern summit, and upon which he places the temple or Capitol. Mr. Dyer, on the contrary, admits the attack to have been made on the southern hill, but uses it as an argument for placing upon it the primitive or proper *Arx*, which he maintains to have been the *Capitoline* fortress of Tacitus.

The remaining points of interest connected with the topography of the *Capitoline Hill* may be briefly adverted to. Of the buildings that constituted the *Capitolium*, the temple of Jupiter Optimus Maximus was the principal, comprising under its roof the cells dedicated to the kindred deities, Juno and Minerva, and among the numerous smaller temples that filled the sacred precincts, such as those of Jupiter

\* See p. 215, ante.





CHURCH AT ST. JOHNSTON, COUNTY DONEGAL, IRELAND.—Mr. Edward W. Godwin, Architect.

Feretrius, Fides, Mens, Venus Erycina, Venus Victrix, and others, the first mentioned was the most celebrated, as being the most ancient recorded temple in Rome. Tradition has assigned the height of Ara Celi as its locality, and Becker has pointed out that it is always mentioned as *in Capitolio*, and especially in the Marmor Ancyræanum, where it seems difficult to imagine the term used in a mere general sense. To these small temples or *ædiculæ*, Augustus added one to Mars Ultor, in gratitude for the recovery of the standards of Varus, and one to Jupiter Tonans, supposed to have been an edifice of a more stately character. Domitian also erected there a temple to Jupiter Custos, in acknowledgment of his preservation when the Capitol was burnt by the troops of Vitellius.

In addition to these, upon the same summit, were the Curia Calabra, where the pontiffs proclaimed the calendar for the month, and adjoining it the *Casa Romuli*, a straw-thatched hut, preserved in grateful remembrance of the founder of the city.

The open space designated as the Area Capitolina, seems to have been an elevated platform of considerable extent, in the centre of which stood the temple of Jupiter with its appurtenances, a sufficient space being left round it for the assemblies of the people, and even for the passage of chariots.

In the great work of Canina, the plan and general view of the Capitol, as he conceived it to have been in its perfection, with the Temple of Jupiter, crowned with sculpture, towering above its more humble satellites, conveys an imposing notion of the general effect of this favoured eminence, and recalls to our memory the Acropolis of Athens in its superior proportions. The other summit, occupied by the Arx, received but few additions to its earliest sanctuaries. Connected with the Temple of Juno Moneta was the *Officina Monetae*, supposed to have been the office of the public mint throughout the republican period, whence, in the empire, it was transferred to the neighbourhood of the Colosseum.

In the Intermentum, tradition has placed the asylum of Romulus, *inter duos lucos*, as told by Livy, and in the same situation, *inter arcem et Capitolium*, Annius Gellius places the Temple of

Vejois, one of the oldest deities of the ancient Latins.

The only considerable remains that have been found upon the Capitoline, are those of the Tabularium or Record Office. From an inscription we learn that it was erected by Quintus Lutatius Catulus in U.C. 676, at the same time that he restored the Capitol after its conflagration under Sylla.

One more point of interest in this hill is the Tarpeian Rock. Custom has hitherto assigned as the actual ancient place of execution an overhanging mass of cliff under the gardens of the Palazzo Cafarelli, on the west side of the hill. M. Dureau de la Malle, however, was the first to call attention to the fact that the passages in ancient writers describing the execution of Manlius and Cassius, clearly point to the place of punishment as visible from the Forum, and that, therefore, it must have been upon the eastern side, opposite to the Palatine. This view is now generally established, and the precipitous cliff beneath the Palazzo Mariscotti has been fixed on as the exact site of the memorable spot.

We now get to the Forum, the spot with which some of the most stirring events in Roman history are associated. To give a connected account of the Forum would require a consideration of its state under its several phases of kingdom, republic, and empire; but our limits will only permit a very cursory glance at a few points in its history, and for the arguments that illustrate the differences of opinion in its details, the reader must refer to the writings of their several exponents. Of the architectural monuments of the empire which were gathered round it as a centre, many remain yet exist to tell their own story; but of the edifices that surrounded the Forum in its earliest ages not one is to be found in its original state. Nevertheless, the fact of many of the works of the empire occupying the sites previously covered by those of the republic, furnishes so far a clue to the unravelling the mystery of the past. It is to M. Bunsen that we must ascribe the merit of having cleared a way through the confused and embarrassed statements of the early topographers, and by pointing out the periods of destruction and restora-

tion, afforded us a clear conception of its condition at several successive periods. The streets which either encircled the Forum or afforded outlets from it, were the Via Sacra, the Vicus Jugarius, and the Vicus Tuscus. Of these, the first was one of the most ancient and important streets in Rome. It doubtless derived its name from the sacred purposes for which it was used, certain offerings to Jove being borne along it monthly to the Arx. It was also the road by which the augurs descended from the Arx to inaugurate anything in the city below.

The Vicus Jugarius ran close under the Capitoline Hill from the south side of the Forum to the Porta Carmentalis, and is supposed to derive its name from Juno Jaga, the presiding deity of wedlock. The Vicus Tuscus, according to some authorities, was the quarter assigned in B.C. 507 to such of the vanquished Etruscans under Aruns as had fled to Rome, and desired to settle there.

To a few fixed points ascertained by the process of excavation, the position and limits of the Forum can now be laid down with something like certainty, and the following account by Mr. Dyer, will convey in a few lines the gist of the discoveries in question:—"We must not," says he, "look for anything like a regular Forum before the reign of Tarquinius Priscus; yet some of the principal lines which marked its subsequent extent, had been traced before that period. On the east and west these are marked by the nature of the ground; on the former by the ascent of the Velia, on the latter by the Capitoline hill. Its northern boundary was traced by the road called Sacra Via. It is only of late years, however, that these boundaries have been recognised. Among the earlier topographers, views equally erroneous and discordant prevailed upon the subject; some of them extending the Forum lengthways from the Capitoline Hill to the summit of the Velia where the Arch of Titus now stands; whilst others, taking the space between the Capitoline and Temple of Faustina to have been its breadth, drew its length in a southerly direction, so as to encroach upon the Velabrum. The latter theory was adopted by Nardini, and prevailed till very recently. Pisle (*Del Foro Romano*, Roma, 1818, 1832) has the



merit of having restored the correct general view of the Forum, though his work is not always accurate in details. The proper limits of the Forum were established by excavations made between the Capitol and Colosseum in 1827, and following years, when M. Fea saw opposite to the Temple of Antoninus and Faustina, a piece of the pavement of the *Sacra Via*, similar to that which runs under the Arch of Severus. A similar piece had been previously discovered during excavations made in the year 1742, before the church of S. Adriano, at the eastern corner of the *Via Bonella*, which Ficoroni (*Festigi di Roma Antica*) rightly considered to belong to the *Sacra Via*. A line prolonged through these two pieces towards the Arch of Severus, will therefore give the direction of the street, and the boundary of the Forum on that side. The southern side was no less satisfactorily determined by the excavations made in 1835, when the Basilica Julia was discovered; and in front of its steps another paved street, inclosing the area of the Forum, which was distinguishable by its being paved with slabs of the ordinary silex. This street continued eastwards, past the ruin of the three columns, or Temple of Castor, as was shown by a similar piece of street pavement having been discovered in front of them. From this spot it must have proceeded eastwards, past the church of *Sta. Maria Liberatrice*, till it met that portion of the *Sacra Via*, which ran in a southerly direction, opposite the Temple of Faustina (S. Lorenzo in Miranda), and formed the eastern boundary of the Forum. Hence, according to the opinion now generally received, the Forum presented an oblong or rather trapezoidal figure, 671 English feet in length, by 202 feet at its greatest breadth under the Capitol, and 117 feet at its eastern extremity."

The position of the Basilica Julia being thus ascertained, the details of the Forum and situation of many of the buildings surrounding it followed in a natural sequence. The situation of this basilica between the Temple of Saturn, which stood on the slope of the Capitol, and that of Castor and Pollux, being known from the Marmor Ancyranum, the latter must have been immediately beyond the Basilica, on the side farthest from the Capitol, and must either have been the temple near *Sta. Maria Liberatrice*, of which three columns are still standing or have stood between that and the Basilica itself. The known proximity of the Temple of Vesta to that of Castor and Pollux, and a combination of other circumstances, assign to it nearly the site of the modern church of *Sta. Maria Liberatrice*—a conclusion arrived at upon very different grounds by some of the earlier topographers. The fact of the discovery upon this spot early in the sixteenth century of honorary and sepulchral inscriptions in commemoration of vestal virgins, their privilege of sepulture within the city, and the probability that their place of burial would adjoin their sanctuary, led M. Fea, in 1827, though still holding the views of the Forum then prevalent, to place the Temple of Vesta on this site. The position of the equestrian colossus of Domitian, as described in the well-known lines of Statius, becomes now intelligible. It stood nearly in the centre of the Forum, with its back towards the temples on the slope of the Capitoline, on its right the Basilica Julia, on its left the Basilica *Æmilia*; while in front, and therefore at the narrow extremity of the Forum, under the slope of the Velian hill, was placed the Temple of Julius Cæsar.

A clear notion respecting the nature of the Comitium, and the relation it bore to the Forum, was first conceived by Niebuhr, and afterwards developed by Bunsen. "That the Comitium," says Mr. Bunbury, "was originally nothing more than an open space, in which the assemblies of the patricians, the *Comitia Curiata*, were held, seems to have been generally admitted; but by a strange misconception of a passage in Livy, which, beginning with Flavius, Biundo, was transmitted in succession through the whole series of topographers, down to Nibby and Burgess, it was supposed that it had been subsequently roofed over, and converted into a covered building. Yet not only does the passage in question, rightly understood, expressly exclude any such idea; but, as Niebuhr has justly observed, the occurrence of such

prodigies, as the falling of milk and blood, instead of rain, on the Comitium, and the growth of the sacred fig-tree on the same spot, all serve to show that it must have still remained an open, uncovered area. We are, indeed, told in very early times, that it was *inclosed*, but in terms which by no means necessarily require us to regard it as clearly distinct from the Forum, much less as constituting anything like a separate edifice. On the other hand, from the frequent mention of buildings, or other monuments, which are spoken of at one time as being in the Forum, at others in the Comitium; and still more clearly from a passage of Pliny, where he describes the sacred fig-tree as being in *foro ipso ac Comitio*, we may safely infer that it was a part of the Forum itself."

The inference from all this is, that the *lectum* of Livy alluded only to the temporary roofing of the Comitium, on the occasion of gladiatorial displays.

These circumstances have occasioned M. Bunsen to conclude, that the Comitium occupied the upper or narrow end of the space allotted to the Forum generally. M. Becker, who takes the same view, has also remarked upon the fact upon the earliest edifices,—those referred by tradition to the four first kings of Rome being found at this portion,—the remaining space being the Plebeian Forum, and served at first as a market-place, or for other ordinary purposes, and took no regular form until the reign of Tarquinius Priscus, who, according to Livy, first surrounded it with shops and porticoes. The theory of the German school is well told by Arnold. "From the foot of the Capitoline," says he, "to that of the Palatine, there was an open space of unequal breadth, narrowing as it approached the Palatine, and enclosed on both sides between two branches of the Sacred Way. The narrower end was occupied by the Comitium, the place of meeting for the *populus*, or great council of the burghers, in the earliest times of the republic; while its wider extremity was the Forum, in the stricter sense, the market-place of the Romans, and therefore the natural place of meeting for the commons, who formed the majority of the Roman nation. The Comitium was raised a little above the level of the Forum, like the dais or upper part of our old castle or college halls; and at its extremity, nearest the Forum, stood the Rostra, facing, at this period, towards the Comitium; so that the speakers addressed, not indeed the patrician multitude as of old, but the senators, who had in a manner succeeded to their places, and who were accustomed to stand in this part of the assembly, immediately in front of the senate-house, which looked out upon the Comitium from the northern side of the *Via Sacra*." The Curia Hostilia, or senate-house, built by Tullus Hostilius, was one of the principal buildings of the locality. From a remarkable passage in Pliny, to the effect that in early periods the hour of noon was marked when the sun, as seen from the Curia, stood in a line between the Rostra and the Græcostasis (*cum a Curia inter Rostra et Græcostasin prospiceret Solem*), Niebuhr pointed out that it must have stood upon the north side of the Forum. The preponderance of authority places the Rostra in the open space in front of the Curia, and, with reference to them, the sun at noon could only be observed from the Curia, if facing the south. The Græcostasis, which was an elevated area, was situate to the right, or west of the Curia. Varro, in describing the position of the Græcostasis, *sub dextra Curie*, speaks of one looking towards the south, which would bring the Græcostasis to his right; and this is further proved by the next passage, "*Senaculum supra Græcostasin ubi ædis concordie et Basilica opulenta*," meaning that the Senaculum lay above the Græcostasis, and towards the Temple of Concord, on the side of the Capitoline Hill.

To the same side of the Comitium may be assigned the Vulcanal, or *Ærea Vulcani*, an open space, of higher elevation than the Comitium, and looking directly upon it, and referred back to Romulus for its consecration. The relations between the Vulcanal, the Græcostasis, and the Senaculum have not been satisfactorily explained, but it is the conjecture of Becker, that the former preceded the latter, and formerly designated the whole area, of which the Græcostasis

and Senaculum each comprised a part. The opinion of Canina regarding the Comitium, is, that it extended along nearly all the south side of the Forum. The views of Mr. Dyer upon this subject are independent and novel; and according to the opinion of the writer in the *Quarterly*, have much to recommend them. After carefully weighing the arguments upon both sides of this question, he decides upon embracing neither, but removes the debatable spot to the north-west corner of the Forum, near the site of the Arch of Severus, making it, in fact, a part of the Forum itself.

The Carcer Mamertinus ascribed to Ancus Martius, is the only building extant referable, with certainty, to the regal period; the lower vaulted chamber, added by Servius Tullius, and called the "Tullianum," being doubtless that whose horrors are so forcibly depicted by Sallust.

Under Numa Pompilius, the Forum received a few improvements. Besides the little Temple of Janus, *index bellis pacisque*, he built his Regia or palace, as well as the celebrated Temple of Vesta, both the latter being at the south-east extremity of the Forum.

With the reign of Tarquinius Priscus, as we observed, the Forum assumed its first architectural features. On the slope beneath the Capitoline the remains of two temples had long been seen—the one showing three columns, the other eight. The former was generally known as Jupiter Tonans (albeit the temple so dedicated by the testimony of Augustus himself is placed in the Capitol, the pseudo-Victor alone placing it in *clivo Capitolino*—whence the blunder originated), the other, since the days of Poggio, as the Temple of Concord. The existence of a third temple adjoining the one assigned to Jupiter Tonans was revealed by excavation, and from the inscriptions found there, as before alluded to, the site of the real Temple of Concord was established beyond a doubt. This point being therefore fixed, it remained only to determine the names of the other two. According to Varro, the Temple of Saturn was founded by Tarquinius Priscus on the Forum, on the spot where the altar to Saturn stood. Upon these ruins, again, authorities are at issue. Bunsen, followed by Becker, gives the ruin of the three columns to Saturn; whereas Canina, approved by Dyer, gives to that temple the ruin of the eight. Bunbury sides with Bunsen.

The writers who mention this temple speak of it as situate at the lower part of the hill and beneath the Clivus. Thus Servius, *sub imo Capitolino*, and Festus, in *imo clivo Capitolino*,—thus was the *Milliarium Aureum*, *sub ædem Saturni*; and furthermore, the Marmor Ancyranum mentions the Basilica Julia as *inter ædem Castoris et ædem Saturni*. The objections of Becker are as follow:—First, that Servius mentions the Temple of Saturn as being *Juxta Concordia Templum*; and though the eight columns are near it, yet asserts they cannot be called *Juxta*. Secondly, the *Notitia*, starting from the Mamertine prison, names the three temples in the following order,—*Templum Concordie et Saturni et Vespasiani et Titii*. This argument would be conclusive could the *Notitia* be relied on, but its looseness of description is too well known to warrant the reliance. Thirdly, he gives the inscriptions to the three temples as recorded by the Anonymous of Einsiedeln, who must have seen them in their integrity, and who gives them in a continuous sentence, without breaks to divide the inscriptions, but comprising all the fragments extant, but in the reverse order to that given in the *Notitia*, as proved by that of Concord which now comes last, and about which there is no question. The inscriptions are given by the Anonymous, as follows:—"*Senatus populusque Romanus incendio consumptum restituit. Divo Vespasiano Augusto. S. P. Q. R. Imp. Cæsar. Severus et Antoninus Pii Felice. Aug. restituerunt. S. P. Q. R. ædem Concordie vastitate collapsam in meliorem faciem opere et cultu splendidiore restituerunt.*"

Now, it is in the dividing this inscription between the three temples that the most important argument lies, and Becker, by giving the words, *D. Vesp. Augusto* to the first, assigns the ruin of the three columns to Saturn, and that of the eight to Vespasian; whilst Canina, by giving the word, *D. Vesp. Augusto. S. P. Q. R.* to the second, reverses the order, and assigns



the three columns to Vespasian, and the eight to Saturn.

Adjoining the Temple of Saturn was the small *Atrium Opie*, mentioned in the *Fasti Amilernini*, and *Capranicorum*, and alluded to by Cicero, which served as a bank for the public money, and before it stood a statue of Silvanus and a sacred fig-tree.

The *taberna*, erected by Tarquin, consisted of butchers' shops, schools, &c. and were distinguished by the names *Veteres* and *Novae*, whence the long sides of the Forum derived their names, *sub-Veteribus*—*sub-Novis*, and a passage in Cicero fortunately determines their relative positions. The next improvement was the converting the butchers' shops into those of silversmiths, or *argentaria*, the earliest notice of whom we find in Livy's description of the triumph of Papirius Cursor (B.C. 305). It was by means of the *cloaca* of Tarquin that the Forum became drained, and it is probable that to this unromantic agency, the disappearance of the Lacus Curtius must be ascribed, rather than to the self-immolation of the Roman of that name. Ultimately the site of the Curtian lake was converted into a dry *pulex*, which, however, still retained its old name, and into this the people used to throw pieces of money, as an *augurium salutis*, or new-year's gift for Augustus. The way in which modern Cicero can administer to the appetite of those who doat upon the wonderful, is humorously described by Forsyth.

"On my first visit to the Campo Vaccino," says he, "I asked my valet-de-place where the Lacus Curtius was supposed to have been? 'Behold it!' cried he, striking with his cane an immense granite basin, called here a *lago*. 'Was this, then, the middle of the Forum?' 'Certainly!' 'Does the Cloaca Maxima run underneath?' 'Certainly!' 'And this was really the lago where the ancients threw the money?' 'Certainly!' Thus was the lacus of some ancient fountain (probably one of those which M. Agrippa had distributed through the streets) transferred by a *Cicerone's* wand into the Curtian Lake! And thus are thousands cheated by deception."

In the graphic and humorous passage from the *Cercusio* of Plautus, commencing "*Com-monstrabo quo in quemque hominem facile inveniat loco*," the first of the series of basilicas that afterwards adorned the Forum is mentioned, namely, the Porcian, commenced in the censorship of Cato. Though it stood close to the Curia Hostilia, its exact site is not certain; but both were destroyed by fire at the funeral of Clodius (U.C. 702). The next in succession was the Basilica Fulvia, founded in the censorship of M. Aemilius Lepidus, and M. Fulvius Nobilior, B.C. 179, and sometimes called the Aemilian, sometimes the Aemilian and Fulvian. It stood on the north side of the Forum, behind the *Argentaria Novae*, and close to the Basilica Portia. This Basilica was afterwards rebuilt by Lucius Aemilius Paullus, B.C. 53. A misapprehension of a passage in Cicero occasions a difficulty in reconciling this restoration with another alleged "*Basilica Paulli*" of still greater magnificence; the situation of the latter not being solvable, as only one Basilica Paulli is mentioned by ancient authors. The Basilica Sempromia, erected by T. Sempromius Gracchus, B.C. 169, constituted the third of these edifices. It stood on the south side of the Forum, behind the *Taberna veteres*, probably some way back upon the Vicus Tuscus. The fourth and last Basilica of the republican period was the Opimia, erected by L. Opimius, close to the Senaculum.

#### THE EXHIBITION OF COMPETITION DESIGNS FOR THE GOVERNMENT OFFICES.

WHATEVER differences there have been as to the management of the competition for the Government offices, or whatever opinion may be forming as to the result, we may safely say that nothing so remarkable as the scene of Westminster-Hall during the first three days of this week, had been ever known of by architects. On Monday last, when the designs were first displayed to the public, it is believed that 10,000 persons visited the exhibition; on Tuesday,

when the crowd was somewhat less, 7,000 were present; and on Wednesday the numbers again reached to 10,000. The body of London architects seemed each day transported *en masse* to Westminster. It is a source of much satisfaction to us that this amount of interest in the exhibition is being taken by all classes. Every object that is desired for the advancement of our art will not immediately follow; but the public appreciation of architecture will be advanced nevertheless.

Such is the extent of the collection; such the amount of architectural *matériel* in "Designs 1, 2, and 3," in plans of all central London, or of "the space bounded by a red line;" and in drawings, models, reports, and specifications in different languages; such is the work of examining 200 and odd designs,—some with two drawings and some with forty; such the trouble of trying to read what is placed too high, and disentangling one set of drawings from another, that many days may be spent in breaking ground for the study of the designs. It may now perhaps be seen and understood better than it has been before, what is the quantity and amount of thought and labour which architects give to even ordinary competitions, and how great should be the corresponding devotion of time and skill, to the decision on merits,—points which, strange as it might appear, we have had to say that architects—may even competitors—in previous cases, did not show that they had due apprehension of.

There are in all 218 designs, according to the official statement, but amongst these there is considerable variety, as to nature of subject and comprehensiveness. First, as might be expected, some architects have entered into the competition for the block plan only. Another portion have sent drawings for one or both of the offices only, viz. the Foreign-office and War-office—the subjects for "Designs 2 and 3." A third portion have grappled with both the general and the particular schemes mentioned, making them more or less capable of being worked out in union. The numbers under this sort of classification, in each head, can only be found by analyzing each set of drawings, but we think the three classes would be about equal.

The whole area of the hall, except a narrow way to the law courts, and along the ends, is given up to the exhibition. The space thus allotted is divided, longitudinally, into four alleys, and a *days* at the end; and cross divisions, with the requisite openings, are placed at certain distances. The inconvenience expected from this arrangement, as to the crowd, is not felt,—and as to the light, there is no cause for complaint. It may, therefore, appear that we are disposed to find unnecessary fault, if we intimate that, in other respects, the arrangements are not what we should have desired. And we are compelled to say this, even after having heard of opinions from competitors, directly opposed to our opinion. But, as we have often presumed to say, committees and judges are not the only persons who have yet to grasp facts as they are. It is true that—excepting that it would have saved us some hours, if the different sets of drawings had been encircled with a strip of red cloth, and if numbers had ranged consecutively (numbers 50 and 51, for instance, being now at opposite ends of the hall, in different alleys).—we may gladly allow that as much has been done by the Office of Works, as existing covered space in a central locality admitted of. But we must repeat,—one of the plain objects for competitors is to ensure to themselves that their drawings shall be exhibited where they can be seen. Without this there can be no advantage from competing. Of course, the decision cannot even go on merits. The majority of competitions which have occasioned dissatisfaction would have owed it alone to the fact that the committees had no place to arrange drawings for their own inspection. The points, therefore, which we have ventured to urge upon our professional readers, have been, that whilst there might be great advantage to be gained by competitions, the prospect worthy of the exertion was in some way connected with exhibition, and that it was undesirable to embark in competition, without that point at least clearly stipulated and understood.

Now the principal view in set No 116, in

the Hall, with the motto beginning "*Nec minimum merueri decus*," is placed so high up that its details, which are apparently of great beauty, and are of course most important even in the general effect, cannot be distinguished. Again, the general plan in No. 96 ("*Pense à bien*"), we looked at for a quarter of an hour, without being able to find what was the proposal as to the bridge routes. The real intention is, *inter alia*, to remove Hungerford-bridge altogether,—and we believe this design is the only one in the exhibition that has such a proposition. Surely—without our entering into the merits of the plan—such a feature of the design is to be taken into account in balancing merits and defects. As to Westminster-bridge,—great attention is necessary to see whether competitors change the site or not; for, independently of any line with approaches from Parliament-street or Whitehall, there are several sites, so to speak, varying only a few feet from one another. There is the site of the old bridge; there is that site *plus* Mr. Walker's addition to the piers, which some of the competitors have taken (mystified by the plans, which were very incomplete as to the bridge); there is the site of Mr. Page's intended bridge, *i. e.* the site of the old bridge with an addition on the up-stream side; and there is the site, *per se*, of that addition, which it has sometimes been suggested, as indeed by us, might form the whole bridge; as well as there are various lines that swerve a little in crossing. It is important surely to know—and it is a question of feet—exactly what use any such competitor proposes to make of the foundations put in lately; whether advantage is taken or not of the points as to the approaches, which constitute the advantage of Mr. Page's line on the up-stream side; or, on the other hand, whether the foundations completed are proposed to be removed. For instance, some of the foreign competitors place their increased width to the original site, on the down-stream side,—perhaps without *knowing* what had been done,—but such things involve points that should not have been doubtful on the drawings. Further, there are other plans, the arrangement of which cannot be done justice to, from the absolute impossibility of reading the writing with the unassisted eye, standing on the ground. As one instance, we may notice the important plans of the design No. 99, *ΔΔΑΑ*. From such circumstances, the duty and responsibility of the judges' office will be very great.

The circumstances, in other points, correspond with what it did not require any great prescience to see must arise. If we refer to what we said in October and November last, on the offices, and in December and in our first number of this year, on the subject of Westminster-bridge, or to what we have said at other times, it would not be in self-gratulation, but to place in the true light the case of the profession—as interested in common with the country and the Government, in the objects of the scheme,—the advancement of art, and the efficient organization of public business. We spoke of the unnecessary hurry in which the project was being pressed forward; we argued that *information* was even needed before the objects to be attained by "*particulars*" or "*instructions*," could be set in the right light; that these "*instructions*" must be such as could not interfere with the logical and sequential order of ideas essential to the conception and realization of any work of art and intellect, and that they must not be such as would trammel freedom of selection, or suggestion, or lead to an alternative between, on the one side, depriving the country of the best ideas that could be brought to bear upon the subject; and on the other, unfairness in the decision. We objected to the rigid demarcation of a boundary until the block plan had been decided upon, and more especially to the selection of any sites for particular offices, as tending to interfere with suggestions as to the whole; but the red line being marked on the plan which accompanied the instructions, we wondered that it should enclose a site of such irregular form, and at one part leaving Richmond-terrace standing. We ventured to say that the problem left as to the block plan, was one for which there could be few modes of solution, and that consequently the 500l. would be far



beyond the value of the project that might become entitled to that premium.

The merit of the block plans generally, as exhibited, is small. Parliament-street is widened: the War-office and Foreign-office are shown in the positions required, and the data are thus given for the whole. The only suggestions for the grand object of concentration that are really valuable are in those drawings where the designer has gone far more carefully into the design, than by a mere block-plan. The author of No. 99 above mentioned, thus makes the existing front of the Treasury the *datum* of his group. The author of No. 116 perceives that two objects, not necessarily connected with one another, were attempted to be served by the "block plan,"—namely, the London street improvements, and the general concentration of the offices; and if he is right, the "instructions" in that particular, have led to much waste of labour. The site of Richmond-terrace many of the competitors do not hesitate to appropriate. Of those designs which treat the London improvements, a large proportion do not present any important variations on what have been canvassed and discussed for years past.

The sites of the bridges that we referred to in our article on Westminster-bridge, are generally observed. With reference to the question of the site for Westminster-bridge, we believe the numerical preponderance of opinion is decidedly in favour of the retention of the site. About one-third of the designs seem to make no reference to the bridge whatever. Of those plans which do contemplate the removal, a considerable number show by the new position the very great disadvantage of the change,—unless the bridge were wanted, and could be kept for the sole use of the offices themselves.

These and many other points, however, will require our attention in subsequent notices. For any matured opinions as to the designs for the Foreign-office and the War-office, in which the chief interest of the collection may be found, there has been no time. Having only a day in advance of the crowd of Monday allotted to us, it has been impossible even to see the bulk of the collection. The architecture of the designs will, however, be found to include more of novelty and beauty than has been displayed in drawings for many years. The English architects do not suffer as some would have said they might, beside the architects of other countries. Of these last there are many, and the number of foreign styles suddenly brought before us is considerable.

The names of forty or fifty of the chief competitors are not in anywise secret. The names of those who, it is supposed will be judges, are also very freely reported. The exhibition will at least do this,—it will leave lasting influences upon the architects who are so assiduously studying it, and the valuable results will be seen in our buildings, as in the amenities of the profession for years to come.

The days of exhibition are now only Monday, Tuesday, and Wednesday, from ten to six, and Saturday from twelve to six; and unless the exhibition shall be kept open longer than first intended, it can hardly by the day of closing, be seen in the manner which is desirable for either study, or adjudication.

In another number we shall enter more into particulars. Meanwhile we should be glad to receive any copies of the reports.

#### THE TWO WATER-COLOUR SOCIETIES.

EACH of these societies will afford a pleasant morning. Although there may be nothing superlatively superior to what has been seen before, there is scarcely a work in the two collections that may not be looked at with pleasure. At the Old Society there are 317 pictures, the majority of which are already purchased. On the private-view day alone, the sales amounted to about 2,600*l*. Mr. F. W. Burton's picture, which occupies the place of honour, "Faust's first Sight of Margaret," is an unquiet and theatrical composition, though very admirable in other respects. Mr. Topham's "Zouave's Story of the War" is one of the features of the collection. Mr. John Lewis has one of his Eastern interiors, "Harem Life" (302), a little less elaborate than usual, but still a marvel of minute execution. Mr. Carl Hag takes a high position both in numbers and degree of merit: his "Sabine Lady" (273) is a charming work, and will

have many admirers. "The Evening Hour" (178), where we have an Italian peasant piping at eve, and looking mistily into the future, is full of beauty and feeling. Oakley, Riviere, and John Gilbert, have good specimens of their art. Mr. Nash has an excellent architectural portrait of "Bramshill, Hants" (188), and Mr. Read a good interior of "Milan Cathedral" (193). "Kilgeran Castle" (3), by C. Branwhite; "Scene in Glen Nevis" (11), by T. M. Richardson; "Val St. Nicholas" (45), by J. D. Tarding; "Convent of L'Addolorato del Sasso" (98), W. C. Smith; "Schloss Elz" (105), W. Callow,—are all very excellent landscapes.

The exhibition of the new society consists of 354 drawings, including many works of high merit, from which purchases were made at the private view to the amount of nearly 900*l*. No. 97, "A Public Letter-writer in the remains of the Theatre of Marcellus, Rome," is the most admirable of several excellent works contributed by Mr. L. Haghe. The scribe sits within a vault dimly illuminated by an artificial light: the tone is delicious,—the sleeping man perfect. "A Guard-room" (329), and "Cromwell and Ireton" (317), by the same artist, will not escape notice. Mr. Henry Warren's large picture, "A Street in Cairo, with a Marriage Procession, as seen from the Shop of a Dealer in Wearing Apparel and Arms" (218), is a very interesting picture, conveying truthfully the scene intended. Mr. Corbould has expended much time and thought on "A Scene at a Prussian Fair" (82), which is full of character, but can scarcely please the judicious. In others of his subjects he is more successful. On the score of subject (234), "A New Pupil for John Pounds," by E. H. Wehnert, stands first in the gallery. The cobbler, John Pounds, it will be remembered, was the founder of Ragged Schools, and Mr. Wehnert shows him surrounded by the children he has coaxed in from the streets to teach. The execution is not equal to the intention, but it is nevertheless a picture which should be preserved. Mr. Mele has made an advance. Mr. Absolon is thinner and more papyry than usual. Mr. Vacher has some exquisite Italian and other landscapes,—see, for example (111), "The Environs of Mesilah;" and Mr. Bennett is as vigorous as usual in (211), "A River Scene," and others. The best landscape, however, in the collection is exhibited by Mr. Edmund Warren, "Glen Sannox, Isle of Arran" (226), which shows a most careful study of nature. His "Trysting Tree" (119), too, is an admirable drawing.

#### BYE-LAW AS TO THE FORMATION OF NEW STREETS IN THE METROPOLIS.

METROPOLITAN BOARD OF WORKS.

THE following bye-law has been approved by the Right Honourable Sir George Grey, bart. one of her Majesty's principal Secretaries of State, pursuant to the Act for the Better Local Management of the Metropolis, and was published the 1st day of May instant:—

"1. Four weeks, at the least, before any new street shall be laid out, written notice shall be given to the Metropolitan Board of Works, at their office, No. 1, Greek-street, Soho, in the county of Middlesex, by the person or persons intending to lay out such new street, stating the proposed level and width thereof, and accompanied by a plan of the ground, showing the local situation of the same.

"2. Forty feet, at the least, shall be the width of every new street intended for carriage traffic: 20 feet, at the least, shall be the width of every new street intended only for foot traffic. Provided that the said width, respectively, shall be construed to mean the width of the carriage and footway only, exclusive of any gardens, forecourts, open areas, or other spaces in front of the houses or buildings erected or intended to be erected in any street.

"3. Every new street shall, unless the Metropolitan Board of Works otherwise consent in writing, have at the least two entrances of the full width of such street; and shall be open from the ground upwards.

"4. The measurement of the width of every new street shall be taken at a right angle to the course thereof, half on either side from the centre or crown of the roadway to the external wall or front of the intended houses or buildings on each side thereof; but where forecourts or other spaces are intended to be left in front of the houses or buildings, then the width of the street, as already defined, shall be measured from the centre line up to the fence, railing, or boundary dividing, or intended to divide, such forecourts, gardens, or spaces from the public way.

"5. The carriage-way of every new street must curve or fall from the centre or crown thereof at the rate of three-eighths of an inch, at the least, for every foot of breadth.

"6. In every new street the curb to each footpath must not be less than four, nor more than eight inches, above the channel of the roadway, except in the case of crossings, paved or formed for the use of foot-passengers; and the slope of every footpath towards the curb must be half an inch to every foot of width, if the footpath be unpaved, or not less than a quarter of an inch to every foot of width, if the footpath be paved.

"7. In this bye-law the word 'street' shall be interpreted to apply to and include any highway (except the carriage-way of any turnpike-road), and any road, public bridge (not being a county bridge), lane, footway, square, court, alley, or passage, whether a thoroughfare or not; and a part of any such highway, road, bridge, lane, footway, square, court, alley, or passage.

"8. In case of any breach of the regulations contained in this bye-law, the offender shall be liable for each offence, to a penalty of 40*l*.; and in case of a continuing offence to a further penalty of 20*l*. for each day after notice thereof from the Metropolitan Board of Works."

#### SOUTHWELL MINSTER.

CHAPTER HOUSE.

In Mr. G. G. Scott's excellent lecture on "Medieval Architecture," lately delivered at the Royal Academy, and published in the *Builder*, he points out the great advantage to be gained by a continuous and patient study of such of the examples of our ancient architecture as come within our reach, from the humble parish church to the stately cathedral. At the same time, he, in a measure, condemns all hasty and careless sketching, and, as a rule, very properly so; but still there are times where nothing more than a hasty sketch (it need not be a careless one) can be obtained,—and even this has its value, if it only adds, to the common stock, some fresh form of tracery or moulding. Again, this hasty sketch may be the only record of an equally hasty visit to some place inconvenient to reach, and which may, therefore, never be seen again; and it so happens that many of our finest examples of English architecture are not easily to be got at,—such as Tewkesbury, Beverley, Ripon, and Southwell—all exquisite specimens, but all, more or less difficult of access. Let us take Southwell, for instance, and see what sort of a pilgrimage must be undertaken. Suppose the platform of the Great Northern Station at Newark reached: then there is that other station from whence you shall be conveyed to Southwell: in your anxiety to reach this, you hardly dare cast a look at the fine church, and the remains of the old castle. Useless speed! You will most probably find that you have to wait something like two hours for the next train; so there is nothing for it, but to walk back into Newark and make a closer acquaintance with the church,—no bad alternative; seeing that it is one of the finest in England. After this, another walk, and a short ride on the iron road, and you reach the so-called Southwell station. Still, the place itself is two miles off; but a pleasant walk is no hardship, especially if the reward is to be so great,—for Southwell Minster is really what Rickman describes it,— "a large and magnificent edifice," combining Norman, Early English, and Early Decorated, all of the finest description. The north porch and some of the doors are excellent specimens of the former period: the choir and transepts, particularly the east end of the former, have Early English work, that can hardly be equalled; and there are some ornamental portions of a later character, such as the stalls and sedilia, of peculiar beauty: it is said that the latter were for a long time carefully cased up by heavy and unsightly woodwork, and that their existence was only discovered by one of the choir boys climbing to the top of the unsightly erection, and by his weight bringing it to the ground: the result would be looked upon with more pleasure if the visitor was not obliged to hear that the freak cost the boy his life.

But perhaps the most attractive part of the building is the chapter-house, a specimen of Early Decorated work, upon which, internally, almost every form of ornament has been lavished in the most abundant profusion. Here, indeed, no hasty sketching would do, nor would it be possible: the forms are so peculiar and so elaborate, that nothing short of the most careful study would be of the slightest service. Although the room is small, a month might easily be spent there; and even then, only skilful fingers and the most untiring industry would produce any great results.

While staying at the village inn (for, after many hours' travelling, it is no shame for a man to be hungry), looking through one of the local guide-books, I met with the following sentence, taken from some old author,— "The minster is large and heavy, and of no particular beauty." Now, Rickman says, "it deserves the study due to a cathedral;" and, so far as my own observation goes, I am inclined to agree with the latter authority; but still I would advise all who can do so to judge for themselves, for the above few notes, together with the accompanying sketch of the Chapter-house from the north, are the only results of a hasty visit to Southwell Minster, a visit to be repeated as soon as circumstances will permit, because of the great beauty of the place.

W. CAVELLER.





SOUTHWELL MINSTER: CHAPTER HOUSE.



## THE ART-TREASURES EXHIBITION.

MANCHESTER has certainly done a great thing. She has gathered together, at no small outlay of time and risk of money, such a collection of works of fine art as the world has never before seen under one roof, and from which good, in an educational point of view, must result. The Exhibition was opened by Prince Albert on Tuesday, the 5th inst. with much pomp, fair weather, an elegant assemblage, 10,000 strong, and, as a general result, complete success. The original paper of suggestions on which the scheme was founded, and which has just now been printed for the first time, was signed by Mr. Peter Cunningham and Mr. John Deane, both of whom have assisted in carrying it out to its present position. Doubts were at one time felt as to the willingness of owners to lend such works as were desired; but, with an admirable spirit, the art-treasures of the United Kingdom have been poured out at the feet of the committee, without fear or stint. The corporation said, in their address to the Prince:—

"The encouraging example afforded by her Most Gracious Majesty and your Royal Highness in thus zealously supporting an exhibition originating in a desire to instruct and gratify the people has been emulated in the noblest spirit of liberality by the possessors of art-treasures throughout the kingdom, and the promoters have thus been enabled to congratulate themselves on the splendid realization of their purposes which is presented in the imposing spectacle around us."

And the Prince referred to the point in his reply both to the corporation and to the executive committee. To the latter he said,—"The building in which we are assembled, and the wonderful collection of these treasures of art, as you so justly term them, which it displays, reflect the highest credit upon you. They must strike the beholder with grateful admiration, not only of the wealth and spirit of enterprise of this country, but also of that generous feeling of mutual confidence and goodwill between the different classes of society within it, of which it affords so gratifying a proof. We behold a feast which the rich, and those who have, set before those to whom fortune has denied, the higher luxuries of life—bringing forth from the innermost recesses of their private dwellings their choicest and most cherished treasures, and entrusting them to your care, in order to gratify the nation at large; and this, too, unhesitatingly, at your mere request, satisfied that your plans were disinterested and well matured, and that they had the good of the country for their object."

Our readers already know something about the building, but some additional details will probably be looked for. It has been erected upon a plot of land about 17½ acres in extent, situated at Old Trafford, a distance of two miles from the Manchester Exchange. The plot is bounded upon one side by the Manchester South Junction, Altrincham and Bowdon Railway, in connection with which convenient and commodious stations have been provided, affording direct entrance into the building. Upon the other side of the building are the grounds of the Botanic and Horticultural Society, and arrangements have been made for easy access in either direction. The accessibility of the site, by rail or by highway, is remarkably convenient. The Exhibition Building covers an area of 16,000 square yards, or three acres and 280 square yards; and the cost of the erection is stated at about 30,000*l.*: the total pecuniary liability already incurred, by the Executive Committee, in the building and arrangements for the Exhibition, amounts, it is said, to above 80,000*l.* The whole of the edifice, with the exception of the entrance-front, is constructed, externally, of corrugated iron sheets, fixed to cast-iron up-rights and roof principals: the interior is lined with wood, and covered with paper-hangings.

The building itself is, in external form (disregarding some projecting buildings at each end) a parallelogram, of about 3½ squares of its width; that is, it is three and a half times as long as it is broad. The exact dimensions of the square are 656 feet in length, and 200 feet in width. But its length is increased by the two projecting portions of the east façade, flanking the grand entrance; and at the other end by the farthest rooms of the water-colour gallery. Each of these end buildings adds 24 feet to the entire length of the whole, so that

the extreme length from end wall to end wall is 704 feet. The east façade, in which is the principal entrance, has been greatly altered since its original design. Originally it represented three bold circular-arched roofs, connected, by lower intermediate buildings, with ridge roof. The two lateral arches cover the picture galleries: the central arch roofs over the 56 feet central aisle of the great hall, and the two ridge roofs cover the side aisles of the hall. But owing to a line of offices being carried northward in a line with this façade, and the railway corridor being also attached to it in a line southward, the façade is now composed of—palace 200 feet, railway corridor 150 feet, and offices 96 feet; in all presenting a front 446 feet in length. The entrance-front, which shows three large arches, is of cream-colour bricks, with red brick dressings and panels up to the spring of the arches: the face of the arches themselves, filled in with glass, are of wood, pointed cream colour, and red to correspond with the lower part. It is not very handsome,—indeed, to speak the truth, it is squat and ugly.

The internal form, so far as it can be seen at once, say from the centre of the transept, is that of the Latin cross, but reversed as to the cardinal points of the extremities; the upper end or summit of the cross being the west end.

The dimensions of the principal divisions of the building are the following:—

	Feet.
Length of great hall .....	632
Extreme width of hall .....	104
Length of north and south transepts .....	200
Width of transepts .....	104
Length of each range of picture-galleries .....	432
Width of each range of ditto .....	48
Length of water-colour gallery .....	200
Width of ditto .....	24
Length of smaller ditto .....	104
Width of ditto .....	24

The general construction will be understood by describing a section through the main part of the building. The central portion of the section will be the Great Hall, 104 feet across: this is divided by rows of coupled columns (at distances longitudinally of 16 feet apart) into three spans, the middle span formed by arched principals of wrought iron, without any cross tie-rods, springing from the tops of the coupled columns, and rising in a semicircle to the height of 56 feet 6 inches at the crown, the span being 56 feet across. The two sides are each spanned by a hipped roof of 24 feet across. On each side of the Great Hall are picture-galleries of the width of 48 feet, covered by a semicircular roof, the principals of which are trussed by tie-rods and struts. The height of the crown of the roofs to the picture-galleries is 50 feet 6 inches. The height of the coupled columns in the Great Hall is 28 feet 6 inches.

The organ has been built, specially for the purpose, by Messrs. Kirtland and Jardine, of Manchester, and has been placed at the service of the executive committee for the period of the exhibition. The organ-case has been executed by Mr. George Jackson, of Brazenose-street, from a design by Mr. E. Salomons, architect to the executive committee. The centre, above the key-board, is occupied by a screen, 11 feet 6 inches wide, of silvered pipes, decorated with a diapering in colours. Above, there is an enriched band, supporting a number of trumpets, in gold and silver, arranged on the radial lines of a semicircle. The effect of this is not very good. On each side of the screen there are circular towers, 3 feet 8 inches in diameter, of gilded pipes, 9 inches in diameter; the pipes passing through the enriched band, and terminating in decorated coronets. Beyond, and slightly recessed, from the line of the towers, are screens of pipes according with those in the centre, but of less size; and, at the angles, there are other towers of pipes. The whole screen rests on a plinth and subbase, 4 feet 6 inches high. The case is, in the whole, 36 feet wide, by 26 feet high to the top of the centre trumpets; and it is 18 feet 6 inches deep, a narrow passage being left between the back and the wall. The work of the screen has been done principally in carton pierre.

The first-class refreshment-room is approached by passing out of the north transept and along

an open colonnade surrounding a court 104 feet long by 100 feet wide. The room is 96 feet by 72 feet; but, at the south-east corner, a space 38 feet by 24 feet is partitioned off for retiring-rooms, &c. The second-class refreshment-room is at the south-east corner of the Palace, adjoining the main building and the railway corridor, it being entered through several doorways from the latter. The extreme dimensions are 132 feet by 72 feet; but 24 feet of the width is cut off, and devoted to retiring-rooms, &c. of which the supply is abundant.

Very extensive cooking arrangements have been made, including a kitchen 50 feet long and 25 feet wide. The newspapers say that Mr. Donald will be able to supply 100,000 persons daily; but inasmuch as, after four or five thousand persons had been supplied on the opening day, we found little obtainable but some polished bones of lamb, we must conclude that matters are not yet complete.

The decoration of the building internally was entrusted to Mr. Crace. The sides of the central hall are decorated with a maroon paper, having a cornice in gold and colours, with tablets, in blue, upon which are inscribed the names of the artists whose productions hang beneath. The semicircular roof is divided into panels, the divisions consisting of the iron principals, and the longitudinal ribs of timber. The compartments (picked out with a faint border-line of crimson) are an aerial grey. The ribs are of a light tea-green, or rather greenish stone colour, with an ornamental edging of a light cream or vellum tint, and the faces are decorated alternately with Vitruvian and Grecian ornamentation. Upon the lower edges of the principals there is a rosette ornament, and on the face of them alternately a guilloche and the tau. The coupled columns (coupled, by the way, as an afterthought, to obviate a weakness) are of the same tea-green colour, relieved with gold. We must confess to liking this part of Mr. Crace's work less than the side aisles, the Oriental Court, and some other parts. The colour of the columns is gloomy and mean, even with the sun upon it,—and that luminary does not always shine in Manchester.

Down the nave on each side are groups of statuary, mostly by modern artists, placed with admirable taste. Some more specimens are needed to continue the line to the further end. Beyond the statues on each side are large cases containing the General Museum, a collection of rare value, commending itself to the attention of architects, even more strongly than the paintings; while against the wall on each side are placed cases of smaller objects, carvings, cabinets, and other artistic and costly furniture. In going through these do not miss the head, in low relief, by Donatello, or Torregiano's bust of Henry VII. On the right hand, or north side of the nave, the main cases contain the Bernal and Soulaiges collections; while those on the south side are filled with the loans of private individuals and corporate bodies,—glass, china, porcelain, metalwork, and ivories. These specimens are not yet catalogued or labelled: this is done their value and the great interest attaching to them will not be felt. Their value in a money point of view is enormous. The case of old china, for example, English and French, was priced, in our hearing, by a well-known importer, at 100,000*l.* This is probably not above the mark, for some of the vases would probably sell for 2,000*l.* apiece! The case of Gothic plate is very remarkable, containing specimens from the pre-Norman Dunvegan cup, alluded to by Scott in "The Lord of the Isles," to the sixteenth-century cup ascribed to Cellini, and belonging to the Earl of Warwick. Look at the fine collection, in another case, of Italian knockers [take a lesson, Birmingham], and that beautifully-worked steel casket of architectural design. The carved ivories are numerous and wonderful, from diptychs and triptychs of the thirteenth and fourteenth centuries, and Mr. Hope's crozier, to the more sensually beautiful flagons of the seventeenth century. The case of Oriental china, with its delicate tints, should serve to revive the love for it which has been lessened by *Sèvres* ware and Majolica. The vase from Sicily, sent by Mr. Edward Falkener, the architect, and attributed to the eleventh century (!), should be investigated.



The whole of the museum has been gathered and arranged under the direction of Mr. J. B. Waring; the cases have had the special care of Mr. Chaffers.

On reaching the end of the nave next the transept, a collection of armour and of weapons will be found, arranged, under the direction of Mr. Planché, by Mr. Pratt, scarcely to be rivalled. Lost to some extent in the large space, and injured by separation, the collection demands the study of all who are interested in the subject. To say nothing of the suits in series, the helmets from the earliest period of English history, notice the Roman-British shield in the Meyrick collection, that ivory saddle of the time of Henry VI., the cross-bow of the same period, and the exquisitely-wrought and inlaid halberd on the other side, said to have been given by the Pope to Henry VIII.

In the south gallery, at this end, there are about fifty architectural drawings, not yet labelled or catalogued; some are very unworthy, and the whole, if mistakenly viewed by a foreigner as an exponent, would give a wrong impression of the present state of the architectural art amongst us. Of the photographs and the admirable collection of engravings illustrating fully the history of the art, we must speak another time.

The walls of the nave hold the British portrait gallery, 337 pictures: the galleries on the south side contain the works of the ancient masters, arranged by Mr. Scharf, 1,098 in number; and the galleries on the north side, paintings by modern masters, the English school, about 600 in number. We may not now, however, say more of this extraordinary collection, but shall return to it at an early opportunity. Suffice it, that all who find delight in works of art, would know the riches possessed by England, and would avail themselves of the most complete means of study ever afforded, must visit the Art-Treasures Exhibition at Old Trafford.

#### THE LAST VISIT TO THE OLD READING-ROOM, BRITISH MUSEUM.

On the 8th of September, 1838, not quite a score of years ago, this useful place of study was thrown open to the readers; and, during that time, much valuable information has been gathered from the enormous mass of books which forms our national library and laid before the public.

The growth of the British Museum has been rapid since the days when the late Mr. Disraeli and two or three others were all who availed themselves of the books and manuscripts which were stored in Montague House, and the changes since then have been great. The number of readers who now use the library annually is upwards of 30,000.

In 1836, two years before the opening of the old reading-room, the library of printed books consisted of 230,000 volumes. In 1851 it consisted of 470,000 volumes, or at the rate of 16,000 volumes a year on an average. It is probable that the increase of books added to the British Museum will, as education advances amongst the masses of the people, both at home and abroad, be much more than 16,000 volumes annually; but even at that rate, the library, in 1900 (forty-three years hence), will contain 1,270,000 volumes.

In 1851 the library occupied 51,050 feet, or very nearly 10 miles of shelves: at the end of this century the shelves will extend nearly 30 miles, or 10 miles farther than from London to St. Alban's.

The old reading-room was thought a fine thing a few years ago; but lately complaints have been constantly made of want of light, want of space, and want of ventilation. Notwithstanding all these faults, a long attendance had caused us to consider the place with something of the same feeling which is experienced for an old and valued friend; and, notwithstanding the beneficial change which has been prepared, it was with some regret that we left the old room for the last time.

Most of the well-known faces which are familiar to the visitor here were in their accustomed places; but the other attendance was not so numerous as usual. All the volumes, with the exception of the catalogues, had been moved away, and the place had an uncomfortable and desolate appearance, something like premises which have been swept by the sheriff. The eye wandered round the empty shelves to well-remembered spots formerly occupied by books of reference. The readers looked bewildered and uncomfortable, and many who had before highly valued the advantage of having access without any trouble whatever to the well-arranged volumes in the reading-room,

more than ever appreciated the use of this department of the British Museum.

Books were written for as usual, but did not come to hand with regularity, and many tickets were returned instead of the volumes wanted, marked "New Reading-room." Numerous clergymen and others, anticipating the fortnight's closing, rushed hurriedly in, and in many instances were disappointed in obtaining the materials they required. Other persons, who had neglected to have their cards of admission renewed at the proper period of each six months, attended in considerable numbers for the purpose of obtaining fresh tickets. Many regular visitors to the reading-room had not had new cards for years past, and some were lost, and much dissatisfaction was caused by the necessity of old readers being asked to apply for fresh introductions. Mr. Panizzi, who is, on all occasions which have come under our notice, kind and considerate, gave instructions that all who chose to call at the old room, and could be recognised by the attendants, should be spared further trouble.

At the time appointed, the readers slowly departed, and the alarm of the clock, and the cry of "All out," was heard here for the last time, and the old reading-room, like Montague House and the green fields and lanes adjoining it,—old Smithfield market, and other once well-known portions of London,—has become a thing of the past.

When we contrast the snugger occupied by the elder Disraeli and his few companions with the old reading-room, and then the new room with the old; old Smithfield market with the modern one; and the buildings erected for public and other purposes half a century ago with those which are now being reared in all directions, we see evidences of the advancement of this great metropolis, and find good grounds for hope as to the future.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Annual General Meeting of the Institute was held on Monday evening, the 4th of May, at eight o'clock,—to receive the Report of the council on the state of the property and affairs of the Institute, and an account of the funds, together with a balance-sheet of the receipts and disbursements; to elect officers of the Institute, and examiners under the Metropolitan Building Act, for the ensuing year; and for the general despatch of business. Mr. A. Ashpitel, Fellow, presided. The following were elected:—

PRESIDENT—Earl de Grey. VICE-PRESIDENTS—Messrs. J. B. Bunting, G. G. Scott, and J. J. Scoles. HONORARY SECRETARIES—Messrs. O. C. Nelson and M. Digby Wyatt. HONORARY SECRETARY FOR FOREIGN CORRESPONDENCE.—Professor Donaldson. ORDINARY MEMBERS OF COUNCIL—Messrs. A. Ashpitel, H. Baker, H. Clutton, St. James's, Owen Jones, T. H. Lewis, J. Clarke, H. Currey, E. C. Hakewill, F. Marrable, and J. Pennington. TREASURER—Sir W. R. Percher, bart. HONORARY SOLICITOR—Mr. W. L. Donaldson. AUDITORS—Fellow, J. P. St. Aubyn; Associate, C. F. Hayward.

Of the interesting review of the doings and sayings of the past year, contained in the Council's report, we must take note in our next number.

#### COMPETITIONS.

**Worcester Cemetery.**—At a meeting of the General Health Committee, held on Tuesday in last week, Mr. Clarke, whose design for the chapels has been selected by the Town-council for adoption, attended with an alternative design, which showed but one archway instead of two in the connecting building between the two chapels. The committee agreed unanimously to recommend the alteration to the council for adoption.

**Oldbury.**—The ratepayers of this town, in vestry assembled, have rejected the design of Mr. W. Bourne, of Dudley, for the chapels, &c. for their new cemetery, and intend inviting competitions. The Burial Board had accepted his plans, and procured tenders for the same; but it appears that their proceedings were not in accordance with *Vox populi*.

**Derby Baths and Wash-houses.**—The competition for these buildings has been settled. There were twelve designs sent in, which have been open for inspection to the members of the Town Council for three weeks past. The Building Committee recommended the design under the motto "Nota Bene," for the first premium, and that with "Con Amore" for the second. This recommendation has been unanimously adopted, and we understand the works will be immediately proceeded with. Upon opening the notes with the respective mottoes, the first was found to be that of Messrs. Giles and Brookhouse, of Derby; the second, that of Mr. Oliver, of Sunderland.

**The Liverpool Wellington Monument Competition.**—A competitor complains loudly of the conduct of the committee. He says,—"I found my drawings, to all appearance, wilfully dirtied and

defaced—walked upon, and nail-holes made through the face; returned in a reckless roll, with the ends twisted and open, tied hard with a bit of twine at each extremity; two shillings to pay, and a circular, stating they had been forwarded, but without one word of thanks, or information as to the result of the competition. Such treatment, I am sure you will agree with me, is unbecoming a committee of gentlemen."

#### PROVINCIAL NEWS.

**East Dereham.**—The local Corn-Exchange Company, last week, had a meeting in the Corn-Exchange, to consider the expediency of building a suite of public rooms on the ground next Church-street, adjoining the present erection, when it was unanimously resolved to build on the site without delay, and the directors were authorised to raise the additional capital required to carry out the project.

**Cambridge.**—The want of adequate public rooms in Cambridge is leading, it appears, to the formation of a "Public Rooms Company," under favourable circumstances, with a capital of 17,500*l.* in 3,500 shares at 5*l.* each, for the purpose of erecting a series of buildings, comprising a grand hall, with suitable rooms attached, for balls, dinners, and entertainments; and also baths, swimming and private; washhouses, hotel of the first class, &c. A freehold site, according to the local *Chronicle*, has been secured in a central position, namely, at the head of Jesus-lane, where the Hoop brewery, the free library, &c. now stand.

**Dudley.**—The new County Court buildings in this town are let to Mr. W. Nelson, builder, for 3,400*l.* (the next lowest being 4,150*l.*), and the works are to be commenced immediately. The accommodations consist of public office 33 by 18, court 53 by 28, chief clerk's office, registrar's offices, consulting rooms, judge's rooms, keeper's apartments, &c. The architect is Mr. Reeves, of Guildford-square.—Part of the workhouse is being roofed in, but it will be some time yet ere the place is ready for the reception of its inmates. The front wing, board-room, &c. have the foundations only in, while the schools are not yet commenced.

**Burnham (Bristol).**—National schools have been erected in this parish, at the sole cost of Mr. Reed, a parishioner, and were opened last week, when 224 children of both sexes attended. The site and building cost 907*l.* odds, and the Council on Education contributed 200*l.* for fittings, boundary walls, &c.

**Wombourne (Staffordshire).**—It is proposed to build new schools and master's residence here, and at a meeting of the vestry last week, the design of Messrs. Bidlake and Lovatt, of Wolverhampton, architects, were unanimously adopted.

**Lichfield.**—At a meeting of the Lichfield Corporation last week, the design of the same architects was decided upon for the Museum and Free Library building for this city.

**Retford.**—New National Schools are about to be built at East Retford, which is certainly not before they are required, as the present building is totally unfit for educational purposes, and has no provision for a girls' school. The new building is intended to accommodate about 180 boys and 120 girls, and is to have a teacher's residence attached. The designs, as prepared by Mr. William Kerby, of East Retford, architect, have been approved by the "Committee of Council on Education," and are in the Gothic style.

**Shrewsbury.**—Meetings are being held for the purpose of promoting the erection of new schools for St. Chad's parish, capable of accommodating 800 children.

**Alfreton.**—The new Town-hall, erected at the cost of Mr. William Palmer Morewood, has been opened. It stands on a site adjoining the George Hotel, and is a plain structure, containing assembly-room, with sessions court and offices, and other apartments for business, either public or private. The rooms on the ground-floor are intended to be used as offices, &c. and two wide staircases lead to the large room above. This room is 50 feet long by 30 feet high. The roof is of open wood framing, with arched ribs springing from stone corbels: the woodwork is stained and varnished, and white-celled plastering between the rafters. On the east side are six windows with stone heads and sills. Mr. Wilson was the architect, and Mr. Josh. Evans, the contractor.

**West Hartlepool.**—The foundation-stone of national schools was laid here last week. The schools are to contain room for the tuition of 750 children, viz. 300 boys, 300 girls, and 150 infants. The amount of the respective contracts for the completion of the buildings is 2,375*l.* and the site is the gift of the West Harbour and Railway Company.

**Carlisle.**—It has been determined to erect in Chapel-street a new dispensary, at a cost of about 700*l.* including 80*l.* for a site.



## CHURCH-BUILDING NEWS.

**Cambridge.**—The vestry of St. Mary's Church is being removed to make way for the erection of a new chancel. It is proposed to remove the Doctors' Gallery, and re-arrange the body of the church, so as to increase the accommodation. The requisite means, however, have not yet been collected.

**East Dereham.**—The chancel of the parish church has recently received some additional embellishment from the Rev. W. C. Wollaston. The open roof has been displayed by the removal of the unsightly ceiling; Early English windows substituted for those of a more debased style; and a window by Mr. Wailes, as a memorial to the late Mrs. Wollaston, now completes the series of painted windows in this portion of the church. The vestry is said to have authorised the removal of a building in the churchyard, by which the burial-place of St. Withburga, an object of local interest, will no longer be hidden from view.

**Greenstead (Colchester).**—The church here has been re-opened, after being closed nine months for the purpose of restoration and enlargement. It was falling into a dilapidated condition, and was of too diminutive a size to afford adequate accommodation. The edifice has been enlarged and improved, at the cost of 800*l*. The alterations comprise the addition of a new south aisle to the church, which besides has undergone complete renovation. The aisle is parted off by an arcade consisting of five arches. The external walls are of Kentish rag, with black cement, and the porch, windows, doors, and buttresses, of Caen stone dressings. The sittings, in lieu of pews, are plain open benches, capable of holding a congregation of 300 persons, or more than double the number this old Norman church would before accommodate. The building operations were entrusted to Messrs. Grimes and Sons, builders; and Mr. G. Lukin, mason, Colchester. In altering the church the workmen discovered in the walls of the chancel a piscina, and Easter sepulchre.

**Newbury.**—Plans for the improvement of Thatcham Church are about to be taken into consideration.

**Maidstone.**—The foundation-stone of the new church of St. Philip, intended for the accommodation of the inhabitants of the Stone-street district, at Maidstone, was laid on Friday in last week. The church is in the Transition style of the latter part of thirteenth century. The present contract extends only to the erection of a nave, 82 feet long by 32 feet wide, and a chancel. There are to be no galleries, and all the seats are to be open. The roof timbers are to be exposed. The porch (on the north side) and bell-turret are to be of oak. The building has been so arranged that transcripts can be added at a future time, when the church will afford accommodation for 800; till then, it will give room for rather more than 500. Towards its erection, the Earl of Romney contributed the sum of 500*l*.—inclusive of the cost of the site, besides a large quantity of building materials. The contract for the building has been taken by Mr. Thompson, of Maidstone, who has stipulated to complete the work by the 1st of November next.

**Cranbrook.**—Some time since the members of the Independent Congregational Church in this town purchased a piece of ground situate in High-street, in order to erect thereon a new church. The edifice will be a Gothic structure, accommodating about 400 persons, and together with school-rooms and site will cost about 1,500*l*. The foundation-stone was to be laid on Wednesday of this week.

**Ramsgate.**—A chantry chapel has just been commenced at St. Augustine's, Ramsgate. It is erected by Mr. Kenelm Digby, from designs by Mr. E. Welby Pugin. The exterior is built of flint, with Whitby stone dressings. The interior is of Caen stone and alabaster, enriched with Galway, Derbyshire, and Parbeck marbles.

**Chiseldon.**—At the picturesque village of Chiseldon, Wilts, the little church is about to be embellished with what is moreover a marked specimen of the parishioners' good taste and regard for propriety. The parish clerk, named Nash, having served about fifty years to the satisfaction of all and credit to himself, has gone to his last home. A stained-glass window has been put up to his memory.

**Tunstall.**—All the pews of the present church being rented, and the free seats being filled by school children, several of the leading families of Tunstall have come forward to aid the incumbent in his design of erecting a new church, intended more particularly for the working classes. Mr. Edward Wood, of Porthill, has announced to the incumbent his intention of giving 500*l*. towards the object in view.

**Tipton.**—The opening services of the Regent-street Tabernacle, Prince's-end, Tipton, closed on Tuesday in last week. The chapel has been erected by the Methodist New Connexion body, and is calculated to seat 440, exclusive of 120 children, who are accommodated in wings attached to the main building. The principal feature of the building is an octagon, having

an open-timbered roof, consisting of sixteen principals, with curved braces, &c. supporting an octagonal lantern, 17 feet 6 inches in diameter. The seats are arranged round the octagon amphitheatrically, five tiers in depth, each tier rising 16 inches. The building is in the Gothic style, and has two three-light windows in front and back bay, the tracery of the latter being filled in with stained glass, representing the Dove descending. In this window the tracery is flowing Middle Pointed. There is a vestry, classroom, &c. attached to the chapel, the schools being detached. The contract for the chapel was 995*l*. exclusive of the gas and heating, the latter of which is effected by steam. The builder was Mr. J. Peacock, and the architect Mr. W. Wigginton, of Dudley.

**Kidderminster.**—The contracts for the erection of the new church at Kidderminster were signed on Tuesday in last week, by Mr. Wullon, the contractor. The church is Gothic, from the designs of Mr. Gilbert R. Blount, of London, and consists of nave, aisles, and chancel, with sacristies, tower, and spire.

**Winterbourne.**—A new church, says the *Gloucester Chronicle*, will be shortly commenced in the parish of Winterbourne, between that village and Frenchay. A clergyman, a resident in the neighbourhood, is to pay the cost.

**Chalford.**—We are asked to say that the total cost of the works contemplated at Chalford Church is calculated at 700*l*, not 1,700*l*, as stated.

**Clifton.**—The necessary steps, preparatory to the commencement of the building of the tower of Christ-church, have been taken, and an appeal for public support in the work will shortly be put forth. A committee has been formed to carry out the undertaking.

**Taunton.**—A competent person, says the *Exeter Gazette*, has undertaken to rebuild St. Mary's tower, Taunton, for the sum of 6,500*l*.; and as 3,000*l*. have been subscribed, it is proposed to ask the parishioners to contribute 2,000*l*. in ten annual rates of 2*s*. 6*d*. in the pound, and other means will be adopted for raising the other 1,000*l*.

**Merthyr Tydfil.**—On the 30th ult. the new church for the district of Cyfarthfa, Merthyr Tydfil, was consecrated by the Bishop of Landaff. The edifice is a cross church, of the Geometric Decorated period, and consists of a lofty nave, with clerestory, chancel, side aisles, transept, chancel aisle, vestry, west and south porch. It is built of a species of purple rag stone, from the neighbourhood, with Bath stone dressings. The vousoirs of the arches are alternated with light blue Penant sandstone, and the dark rag. A bellry at the west end is crowned by a spirelet. The west end is lit by a large rose window, of Geometric tracery. The arches of the nave are supported on Bath stone columns, alternately circular and octagonal, with carved capitals. Bands of polished slate are introduced in the columns, with good effect. All the interior dressings and arches are of Bath stone. The pulpit and reading-desk are of Menai deal, stained and varnished, with Bath stone diapered panels. The communion and pulpit railings are of iron, and the communion is paved with Minton's tiles. There are galleries in the transepts for children. The whole of the woodwork is stained and varnished; the pews open seated. The church accommodates 600 worshippers: its cost was about 2,700*l*. The land was given by Lord Dynevor and Mr. Richards. The building was commenced by Mr. Daniels, of Aberavenny, and completed by Mr. P. Rees, of Merthyr. The architect is Mr. James S. Benest, of Norwich. A parsonage will also be shortly commenced, close to the church, and it is in contemplation to build schools in connection with the district.

**Llantillo Crossenny.**—The parish church of Llantillo Crossenny, situated in a picturesque part of Monmouthshire, on the old road from Aberavenny to Monmouth, having become greatly dilapidated, a landowner, Colonel Clifford, M.P. for Hereford, has, at his sole expense, completely renovated it. The edifice was re-opened for divine service on Thursday in last week. The original type has been followed in such alterations as were requisite, as in the insertion of three new windows in the south aisle, and a new western doorway in place of mean modern ones. The interior has had the stonework cleaned from whitewash, the modern ceiling removed, and the timbers repaired and exposed to view. The nave and aisles have been re-seated with moveable open benches. The restoration has been effected by Mr. David Lewis, of Raglan, builder, under the superintendence of Messrs. Pritchard and Seddon.

**Welsh Frankton.**—The first stone of a new church has just been laid in the village of Welsh Frankton, near Ellesmere, by Mrs. Wright, of Halston. The plan of the church comprises nave and chancel, with vestry to the north, and a south porch. There is also a stone turret at the west end of nave, surmounted by a spire. Accommodation is provided for 190. The style of the building is geometrical; the material Cefn stone; and the roofs will be covered with

Staffordshire tile. A burial-ground, with boundary wall, and lich-gate next the road, are also to be provided. The cost of the whole will be about 1,600*l*.

**Bicton.**—The chief stone of a parsonage-house for the chapelry of Bicton was laid on Monday in last week. The design was furnished by Mr. E. Haycock, Jun. and the contractors are Mr. H. Thomas, of Shrewsbury, and Mr. J. Evans, of Collocot. Col. Wingfield has contributed 100*l*. towards the work, and Mrs. Wingfield 50*l*.

**Bordesley (Birmingham).**—The Holy Trinity Chapel, Bordesley, has been decorated and reopened. The walls are white, the ceiling a blue, that part over the altar being ornamented with gold stars. The panels in front of the gallery are alternately oak and ultra-marine blue. Painted on the oak panels are white scroll bands relieved with blue, and on these are inscribed, in old English letters, quotations from Scripture. Following the curves of the upper windows are other bands, with passages from Holy Writ: these are bordered with floral designs in vermilion, green, and blue. The reredos is covered with Gothic ornament and symbolic characters in various colours. The iron pillars supporting the galleries are painted blue, and the gas stands, which are brass, and similar in design to those at the Music Hall, are partly blue. The high, old-fashioned pews have not been removed and open seats substituted. The architect employed was Mr. Cranston.

**Manchester.**—The Jews of Manchester have lately become divided into two sects, one holding to tradition, who have just laid the corner-stone of another new synagogue, so that two new synagogues are at present in course of erection in this city. The one now under notice is to be in York-street, Cheetham-hill-road. The chief entrance will be at the west end, facing York-street, and will be approached by a flight of twelve steps, at the top of which will be a loggia, 24 feet wide by 12 feet deep. In the north and south fronts will be two other entrance-doors, leading to the staircases to the galleries, in addition to two others leading into the worship-hall, or, laterally, into ante-rooms, of which there will be two, supplied with lavatories, &c. The worship-hall will be 56 feet 6 inches wide, from north to south, and 72 feet long from east to west. It will be furnished with seats to accommodate 372 persons, besides ninety boys or pupils, there being also sixty free sittings. In the centre of the east end will be a recess, formed by projecting pilasters, to contain the ark, which will be enclosed with doors made of polished mahogany, and covered with a curtain, in the usual manner. The galleries, which will be set apart for women, will extend along three sides of the building, and will contain 156 private and sixty-four free sittings, besides accommodation for seventy girls. They will be erected over a Doric entablature, supported on pilasters, which will extend round the four sides of the hall. Over the whole will be an entablature of the Corinthian order, supported on columns, and separating the ceiling into three large divisions, the centre one of which will be raised about 5 feet above the others, so as to form a clerestory, which will be lighted by eight stained-glass windows. The ceiling will be formed into panels, and in the centre of each of the four central panels will be placed a gas "sunlight" for lighting the hall, there being also single burners under the galleries. Underneath the hall will be a basement story, divided by moveable partitions, into a number of rooms, adapted for committee meetings or other purposes. The exterior of the synagogue will be of the Italian style of architecture; the west facade, fronting York-street, being the most ornamental portion. The centre will consist of Corinthian columns, forming the entrance to the loggia; and there will be wings enclosing the staircases with attached pilasters, the whole supporting a Corinthian entablature. In the central part there will be a balustrade, but the two wings will be surmounted with domes. The whole of the front of the building will be constructed with polished stone; but the north and south sides will be faced with bricks, with stone dressings for the windows.

**Lancaster.**—A Roman Catholic church, or cathedral, is about to be erected at Lancaster, its site being on the Moor-road, contiguous to the new schools and convent. The foundation-stone of the church, which is to be dedicated to St. Peter, was laid with much ceremony on Wednesday in last week. Mr. B. G. Paley, of Lancaster, is the architect of the church, the style of which is the Geometric. Its tower and spire will rise to a height of 240 feet, and the other portions of the building will be on an equal scale.

**Burythorpe.**—Subscriptions have been opened and responded to for the purpose of pulling down the present church of All Saints', Burythorpe, and building a larger Early English structure on its site. The church has become too small for the requirements of the congregation, and is in a ruinous state.

**North Shields.**—The consecration of that portion



of the North Shields burial-ground which is devoted to the Church of England took place on Saturday in last week. The new burial-ground is situated on the west side of Preston village, about 1½ mile from North Shields. The quantity of land purchased by the burial board was 33½ acres, but of that only about 28 acres are enclosed as a cemetery. The ground was laid out and levelled under the direction of Mr. Fenwick, the borough surveyor. The principal entrance is in Hawkey's-lane, where stands the superintendent's house. A gravel-path, 25 feet in width, running due east and west, divides the ground into two equal parts; that on the right-hand (the north side) being consecrated for the Church of England, and that on the south unconsecrated. The chapel, lodges, and entrance-gates were designed by Mr. Johnstone, of Newcastle. The contractors for the chapels were Messrs. Scott and Reed; for the lodges Mr. Foggin; for entrance-gates, Mr. Schooler; and for the boundary-walls, Messrs. J. and M. Robson, of North Shields.

**Newcastle-upon-Tyne.**—The consecration of that portion of the new cemetery constructed by the Burial Board of All Saints, which has been set apart for the Church of England, took place on Wednesday before last. The cemetery is in Jesmond-road; and is the first of four cemeteries which the burial board of this town will ultimately open for public use. The whole purchase of land for the purposes of the All Saints' Cemetery consisted of 12 acres, situated nearly opposite to the already-existing Jesmond Cemetery. Of these, 10 acres have been appropriated for burial-ground—five on each side; the other 2 acres being set apart as building sites. The eastern side is appropriated to the Church of England. The ground has been purchased at a cost of 500*l.* per acre. The chapels and offices were designed by Mr. John Green, architect; and built by Messrs. Gibson and Wilson. They are stone structures, including, besides the two chapels, a superintendent's house, bellry, tool-house, and dead-house. The entire outlay for the new cemetery, including the cost of the land and amount of the contracts, has been 10,068*l.*

#### SCOTTISH BUILDING NEWS.

**Edinburgh.**—It was "overtured" by the Free Synod of Angus and Mearns, at their last meeting, that the ensuing General Assembly of the Free Church of Scotland, at their next meeting, should adopt measures for the erection, as speedily as possible, of an Assembly-hall in Edinburgh, for the meetings of the Supreme Court of the Free Church.

**Brechin.**—Mr. John Smith, of Andover, in America, lately contributed 1,500*l.* towards the erection and endowment of schools in his native town, Brechin; and has since announced that, in order to make the building ornamental as well as useful, he is to give other 200*l.* chiefly for a belfry and clock, and that his brother, Mr. P. Smith, and his partner in business, Mr. John Dove, both also natives of Brechin, are to give 200*l.* each, to aid in the erection of a teacher's dwelling-house. The directors of the scheme intend to engraft on the institution an industrial character, especially for behoof of girls.

**Alloway.**—Funds were raised some time ago to build and endow a new church for the parish of Alloway. Operations have just been commenced for the erection of the new building. The site is in a field opposite to the interesting ruin immortalized in "Tom O'Shanter." The estimated cost is 1,750*l.*

**Berwick.**—The intention to erect a new church in this town has been announced (since his defeat) by Captain C. W. Gordon, the unsuccessful candidate at the late election at Berwick. A site is now being sought out for the building.

#### PROCEEDINGS UNDER THE METROPOLITAN BUILDING ACT.

*Builder fined for not giving Notice.—Party-walls.*

At the Clerkenwell Police-court, on the 30th ult. Mr. Catbush, a builder, was summoned by the district surveyor of South Islington for having commenced an addition and other work at the back of No. 45, Midday-street, without previously giving two days' notice: he was also summoned for irregular work. In the former case, the builder quoted in defence sec. 44, which provides that, in cases of "emergency" work may be done, provided that before the expiration of twenty-four hours, notice be given to the district surveyor; and he said that he had given the notice within that time. The "emergency" was, that having let the house, had he not done the work he might have lost a tenant. The district surveyor maintained that the word "emergency" in the Act provided only for a pressing necessity or case of danger; in which the magistrate, Mr. Tyrwhitt, agreed. Moreover, it was shown by the builder's own witnesses that the notice was not given within twenty-four hours after commencement. The magistrate fined the builder 40*l.*

but, with the concurrence of the surveyor, the sum was afterwards commuted to 20*l.*

In the second case the irregularities complained of were, that the existing wall of the washhouse of No. 46 had been made use of as a party-wall, wherein the chimney-back and a part left for a copper-flue were only 4½ inches thick instead of 9 inches. Further, part of the enclosure of addition at the back was formed of weather-boarding, and part of 4½-inch work. The district surveyor stated that the first summons would not have been taken out had the irregularities been rectified. He further said, however, that works were done to such an extent in his district without notice being given to him, that he was unable to see the requirements of the Act carried out. The builder was ordered to amend within fourteen days from the 30th of April, paying the costs of summonses.

Much time was spent in making the points clear to the magistrate, who went into both cases with great patience, and pointed out how much better it would be were such matters referred to a professional tribunal.

#### Books Received.

*How to Farm Profitably, particularly on stiff, heavy Clays.* By Mr. SHERIFF MECHI. Longman and Co. London.

As a coadjutor in the rather tardy settlement of the somewhat vexed question,—"What are we to do with our town sewage; and as a general and agricultural benefactor," who can make many "blades" grow where only "one grew before," Mr. Sheriff Mechi merits the loan of the public ear, while teaching the farming portion of that public how to multiply ears of another order. In this pamphlet it is Mr. Mechi's purpose to dissuade the public mind of the notion that his farming is merely an expensive hobby, and that it is not for substantial pecuniary profit, as well as for practical example, that he works. The fact is, as he assures his readers, that for several years he has been deriving a most gratifying return for his expenditure, a return of a very enduring and continuous character; but the world does not believe it, only giving him credit and thanks for kindly losing money by his experiments to oblige the country. The agricultural and other classes ought to be grateful to Mr. Mechi for something else than this, even though his endeavour to show how the country could grow all its own supplies of corn and meat were not so successful as it seems to be. If ever there be such a grand development of agricultural manufactures as there has been of those of cotton and other fabrics in this country, it must be by some such means as those Mr. Mechi is adopting; and we cannot but regard him as one of the most advanced and enlightened of the pioneers who are cutting out a clear and open way to this most desirable end.

The chief points in the pamphlet under notice are the inculcation of the principle that, without drainage and manuring, little besides the old jog-trot rate of reproduction can ever be done in farming operations; eternal ploughing, harrowing, and digging being of little use without these grand stimulants; and, above all, that, in agricultural, as in other matters, a capital must be invested before an interest or profit worth speaking of can be got; that, in fact, the real test of economy in farming is the cost-price per quarter, per ton, or per lb. of the farm produce. When the *Builder* was younger than it now is, and when we had not heard so much about agricultural science as we have since done, we urged the very same principle in nearly the same way,—ever insisting that agriculturists should not consider the amount of the sum spent, so much as the amount realized.

#### VARIORUM.

Amongst educational books received, is one by Mr. J. Blain, late vice-principal of the Winchester Training School (Longman and Co. publishers), titled, "The Rationale of Arithmetical Teaching Exemplified in a full Exposition of the Principles of Numeration, and the Four Elementary Rules; with Remarks on Teaching Arithmetic." We quite agree with Mr. Blain, that children in general are made to begin slate arithmetic too soon; and any treatise designed to obviate this evil merits a trial, as this little treatise does.

#### Miscellaneous.

**PRESERVATION OF PLANTS AND LEAVES.**—In answer to your correspondent, who inquires the best mode of preserving plants, so as to retain their colour and form, I may state, that the plan I have followed for several years is that given in Withering's "Botany," page 39. I should, however, observe, that in some plants I have been unable to retain the colour perfectly for any great length of time.

H. W. P. I.

**MANAGEMENT OF LANDED PROPERTY.**—A course of sixteen lectures, on "Agriculture and the Management of Landed Property," is to be delivered at King's College, by Mr. J. Lockhart Morton, as a justification of himself for dealing with such an important and comprehensive subject. In his first lecture on the 27th ult. Mr. Morton stated that for twelve years he had been engaged in the management and improvement of landed property. During that period he had been occupied, not only in studying agricultural theories, but there was no system of manual labour pursued on a farm in which he had not taken a part. He mentioned this to show that he was not a mere essayist, but a practical man. Mr. Morton then proceeded to show the necessity for landed proprietors having in their service duly-qualified agents. An agent might be a chemist, a geologist, or a practical farmer. Chemistry, geology, and practical experience in farming were severally desirable; but would a knowledge of either of them be sufficient to qualify a man to be the agent of an estate? The lecturer thought it necessary that theory and practice should be combined, and that, in the choice of an agent, practical knowledge was indispensable.

**THE IRON AND COPPER TRADES.**—In the iron trade sales have taken place, of late, at prices 10*s.* per ton below those which prevailed at the time of the quarterly meetings. Copper has also fallen to the extent of a penny per pound. On the announcement being made at Birmingham, a meeting of the metal rollers was held, at which corresponding reductions were agreed upon in the prices of brass wire and tubing, and the following is now stated by the *Birmingham Journal* to be the general scale of prices.—Manufactured copper, 1*s.* 2*d.* per lb.; best selected, 129*l.* per ton; tough cake, 126*l.*; yellow metal sheathing, 1*s.* 0*d.* per lb. The reduction on brass wire is one-half penny per lb.; rolled metal and brass tubes, three farthings; copper wire and copper tubes, 1*d.* per lb. Following this, the brassfounders have issued circulars announcing an advance in their discounts of 5 per cent. (2½ net); and apart from the direct, the indirect effect upon a great variety of trades will be such that it will not only be a very seasonable relief, but tend to stimulate trade generally, at a time when something of the kind was wanting to give it an impetus towards healthy action.

**SALE OF THE PANOPTICON, LEICESTER-SQUARE.**—The Panopticon, which cost in all upwards of 100,000*l.* was sold last week to Mr. E. T. Smith, the lessee of Drury-lane Theatre, for 11,000*l.* the reserve price fixed by the Master in Chancery.

**SLATE ENGRAVINGS.**—It is stated that M. Caruana, historical painter of Valetta, in Malta, has discovered that slate is superior to wood for engravings. It is easily worked, he alleges, reproduces the finest lines with remarkable exactness, and resists longer than wood the action of the typographical press, so that several thousand copies of a design can be struck off without producing any sensible difference in the quality of the impression.

**REMUNERATION OF ARCHITECTS.**—I notice in your paper of last week the observations made by Mr. Godwin with reference to the remuneration of architects, and I highly approve of all that was said upon the subject. It becomes more necessary every day to uphold the honour of the profession, seeing, as we do, that there are members who do all they can to degrade it, by so readily responding to the calls of committees, corporations, and other persons who insult the profession by asking architects to devote their time, mind, skill, and scientific knowledge for an insignificant reward, barely enough to pay for the paper. Whether or not these bodies are ultimately benefited, is beyond the question: be that as it may, so long as there are architects who will condescend to enter into an expensive competition for a paltry consideration, so long will there be great and small bodies, public and private, eager to take advantage of their folly. I see by an advertisement that architects, builders, and others are invited to send designs, specifications, and estimates for alterations and repairs to be done for the corporation of Hertford, the reward to be *Ten pounds*, it being understood that the successful architect is not to calculate upon being employed; and by the particulars issued, if he be, he is to work under the superintendence and to the satisfaction of the borough surveyor. If, however, he is not to carry out his plans, which may have cost him 20*l.* he must be content to sacrifice the difference. Now, I would take the liberty of suggesting to the very liberal corporation of Hertford that they would only act properly by at once desiring their borough surveyor to prepare plans for the alterations, and not seek to rob the profession of their brains for nothing. If, however, they have not sufficient confidence in their own man, let them employ some one in whose scientific attainments they can depend.—I am, I hope,—AN honourable MEMBER OF THE PROFESSION.



**YORK SCHOOL OF ART.**—The annual meeting of this school was held last week. Mr. J. P. Brown Westhead, M.P. presided. The report stated that the number of students who had paid fees in the school during the past year had been on an average 108, who had paid the school fees (independent of 216 free students during four months in the year), while the average of the previous year was 96. The free classes for working men have resulted in the permanent establishment of a class for mechanical drawing, which was considered to be the kind of drawing particularly suited to the needs of working men, and which has proved to be one of the most flourishing classes in the school. The balance-sheet showed a balance against the institution of about 40%, and the chairman announced himself a donor of 10% in liquidation of the debt. He also promised to become an annual subscriber, and offered to pay the cost of sending some of the pupils to visit the Manchester Art Treasures Exhibition. Mr. Swallow, the master of the school, read a statement to the meeting, giving some account of improvements he had effected, with the approval of the committee.

**METROPOLITAN TOLL REFORM.**—A joint committee of owners of public and private carriages was held on Wednesday last week, at the Craven Hotel, Mr. H. Ingram, M.P. in the chair. In opening the proceedings, the chairman combated the many objections that have been raised to the abolition of toll-bars, which he viewed as nuisances of so grave a character, that he considered the meeting perfectly justified in calling on the general public to assist them in their object. Mr. J. E. Bradfield gave a rapid outline of the agitation from the time it was first mooted in 1825 to the present date, and showed that the Metropolitan Roads Commission, instead of keeping to their promise of reducing turnpikes within ten miles of London, had increased them. Of 123 miles of road in and round London, 113 were tolled, and eleven toll free; and while the repairs of the 112 miles cost about 35,000*l.*, or about 340*l.* per mile, the repairs of the eleven miles cost about 15,000*l.*, or about 1,400*l.* per mile, and these roads, which were in the centre of London, were paid by the people in the suburbs. Appropriate resolutions were unanimously passed in favour of the abolition of metropolitan tolls, and of an appeal to the public for funds.

**GAS.**—The Uttoxeter Gas Company held its annual meeting on the 23rd ult. It appeared from the report, that the reduction last year of the price of gas had been attended by increased consumption and profit, and that although a new gasholder had been required, a dividend of 5 per cent. could be paid to the shareholders, leaving still a balance in hand. In 1857, just fifty years ago, the streets of Paris were lighted with 4,223 lamps; on the 1st of January, 1857 we find these superseded by 14,330 gas-burners. In 1857, each lamp, all expenses included, cost 2*d.* per hour, or 27*d.* per night, taking eleven hours as the average length of time; in 1857 the cost, all expenses included, is 1*d.* per burner, with an intensity of light seven times greater than that of the oil lamp. The total number of gas-burners in Paris, streets and houses included, is upwards of two millions; the total length of all the gas-pipes laid down is 195 leagues.—Mr. Scheller, of Vienna, proposes to obtain a greater yield of illuminating gas from a distillatory process, as heretofore, for a given period, and when the gas given off begins to fail in its illuminating power, conducting into the retorts a suitable quantity of the tar given off in the earlier part of the process, or during a former operation. Or, collect the tar into a still, vaporise the volatile parts, and conduct these to the retorts, the heat of which will quickly convert them into a rich gas. By this means the poor gas will be enriched at the expense of the hitherto valueless gas-tar.

**THE CAMP AT ALDERSHOT.**—There have been fresh fires here and more damage done. The fears we expressed, after visiting the camp long ago, and the caution we gave, have been justified at some considerable expense to the country!

**LIVERPOOL ARCHITECTURAL SOCIETY.**—The fifteenth fortnightly meeting of the session was held on Wednesday last week, Mr. S. Huggins, president, in the chair. Mr. Horner directed attention to drawings of three designs given in by Mr. Macbride for the Londonderry Monument, to be erected at Newtownards. He also requested attention to a drawing by the same artist, of the Liverpool Wellington Monument. This latter had been executed to show, in some degree, at least, the impolicy of combining a pillar with a statue in a monumental structure.—Mr. Verelst then proceeded to read an "Olla Podrida, on the various subjects of the ozone of cheapness, public monuments, the naming and numbering of streets in large towns, professional practice, cements, comparison of English and foreign cathedrals, and composition."—The next paper read was "On the Timber Trade of Liverpool," by Mr. A. Rimmer.

**THE CLEARED SPACE AT ST. PAUL'S CHURCH-YARD.**—A deputation from the Royal Institute of Architects was to have an interview, on Friday, 8th inst. with the Metropolitan Board of Works, respecting the preservation for the public use and enjoyment of the area recently cleared at the south-eastern angle of St. Paul's Churchyard. The Improvement Committee of the City Corporation were also to send a deputation to the Board on the same day, on the same subject.

**ENGINEER FOR PRESTON WATERWORKS.**—The Town Council of Preston, as the Local Board of Health, have appointed Messrs. Park, Son, and Garrick engineers to carry out their waterworks. The appointment was made unanimously. "I'll have been known for some months back," says a local paper, "that they were to have the work; yet the Council advertised in Preston, London, Liverpool, and Manchester papers for an engineer; induced many persons to make application for the office; and then the committee, without condescending to open the testimonials of the applicants, recommended that our townsman should be appointed. When the advertisements were first proposed to be issued, it was then known what a course was unnecessary, as it was then known what the result would be; yet the announcements were issued, just to give the appearance of having submitted the office to competition. We think such a course scarcely fair,—holding out hopes which there was no intention to realize."

**LICESTERSHIRE ARCHITECTURAL AND ARCHEOLOGICAL SOCIETY.**—A general meeting of this society was held on the 27th ultimo. Mr. T. Newinson exhibited a rubbing of the well-known brass of Abbot de la Mare, from St. Alban's Abbey. Mr. Thompson read a short paper on the "Chapel of Wyggeston's Hospital," with a view of calling attention to the building, which is threatened with destruction. At the committee meeting afterwards held, it was decided that the usual annual meeting and excursion of the society should take place at Ashby-de-la-Zouch, on the 5th and 6th of August.

**THE ENGLISH CHURCH IN SWITZERLAND.**—An attempt is being made to build a new British chapel at Berna. The sum of 1,500*l.* is required for the purpose. An account for the "Fund for the proposed chapel at Berna," has been opened, we hear, at Court's, where subscriptions can be paid.

**BATH FINE ARTS SOCIETY.**—The fourth and last meeting of this society for the season has just been held, with the usual full attendance of visitors, and with more than the usual supply of works of art. The whole suite of Assembly Rooms is now not more than sufficient for the purposes of the meetings.

**MCDUGALL'S DISINFECTANT POWDER** consists of sulphate of magnesia for better soil of magnesian limestone, lime in addition being an improvement, with 5 per cent. of carbolic or phenic acid (a sort of creosote of coal tar).

**THE LIMNSTER, CHARD, AND CREWKENE LABOURER'S FRIEND SOCIETY.**—This society have awarded their prize of 7*l.* for a design for a three-bed-roomed cottage, as well as their prize of 5*l.* for a design for one with two bed-rooms, to Mr. T. W. P. Isaac, of Bath.

**TUNNEL THROUGH MOUNT CENIS.**—The Sardinian Government has just concluded the preliminaries of a contract with the Company of the Victor-Emmanuel Railway for the passage and tunnelling of Mount Cenis. The sum of forty millions having been deemed sufficient for completing the tunnel and galleries to complete the plan as previously sanctioned, the Government has consented to take twenty millions on itself, and the company an equivalent sum.

#### TENDERS

For extension of north wing of St. Pancras Workhouse; Mr. N. B. Scott, architect. Quantities supplied taken out by Mr. C. J. Shoppee:—

Dales .....	£2,169 10 0
Wishire .....	1,843 9 0
Axford .....	1,743 0 0
Rudkin .....	1,624 0 0
Mann .....	1,600 0 0
Dennis .....	1,595 10 0
Hill .....	1,569 0 0
Rove .....	1,539 0 0
Hack and Son .....	1,537 0 0
Bennett and Sass .....	1,521 0 0
Batesbury .....	1,459 0 0
Palmer .....	1,449 0 0
Frow .....	1,388 10 0
Purkiss (accepted) .....	1,387 0 0

#### TO CORRESPONDENTS.

Mons. S.—T. R. S.—J. P.—E. L. D.—Palmyra.—J. H. (under our pen)—T. C. (under A. Z.—T. B. A. G. H.—H. H.—W. and N. A. W.—T. G.—J. E. R.—R. R.—Profructa.—H. B. H.—A. Maile Mason.—T. P.—J. B. N.—H. D. G.—R. F. C.—Querist.—G. E. R. (next week).—J. L. F.—W. Z.—R. and H. T.—W. H. C.—A. Computer.—T. G.—E. A. A.

"Books and Addresses." We desire to decline pointing out books or finding addresses.  
NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

#### ADVERTISEMENTS.

**TO PARENTS AND GUARDIANS.**  
**A FELLOW OF THE INSTITUTE** of BRITISH ARCHITECTS, ten years in practice at the West-end, and CAPABLE to do office for a PUPIL. Address, F. I. Office of "The Builder."

**TO ARCHITECTURAL DRAUGHTSMEN.**  
**AN ASSISTANT WANTED,** accustomed to perspective, and a good colourist; acquainted with mechanical drawing, with sketching, and with the use of Mr. SKIDMORE, Exeter Hall Coffee-house, on TUESDAY, the 11th instant, from TWO till NINE p.m. If by letter, enclosed, to Mr. SKIDMORE and SON, Coventry. Terms 2*s.* per week.

**APPRENTICESHIP, in the Marble and Stone Carving and Modelling.**—A person well established in the above line, and having a good run of general business, is desirous to meet with a perspective, steady youth as an APPRENTICE. A premium will be required.—Unexceptionable references can be given.—Address, M. N. Office of "The Builder."

**TO ARCHITECTURAL ASSISTANTS.**  
**REQUIRED, the Services of an ARCHITECTURAL ASSISTANT.** He must be thoroughly acquainted with the details of his profession.—Reply, by letter, stating terms and references, to BIDLAKE and LOVATT, Architects, Waterhampton.

**TO GLASS PAINTERS.—WANTED,** a COLOURING MEN, and ORNAMENTAL GLASS PAINTERS, and ONE or TWO FIGURE PAINTERS, of ability.—Apply to N. W. LAYBURN, 30, Southampton-street, Strand.

**TUNSTALL LOCAL BOARD OF HEALTH.**  
CLERK OF WORKS.—Wanted immediately, a thoroughly practical man as CLERK OF WORKS for the New Market Hall, Tunstall; one who has been accustomed to iron roofing preferred. Applied only, enclosing references, may be made to Mr. RALPH HAYLES, Surveyor to the Local Board, Cole ridge, Staffordshire Pottery.—By order, JOSEPH LOWNDEN, Clerk.

**WANTED immediately, a MAN TO WORK** a ROLLING-MACHINE, he must be thoroughly competent, and capable of making the iron.—Apply at 2, Manor-terrace, King's-road, Chelsea.

**TO ART WORKMEN.**  
**WANTED, FIRST-CLASS HANDS** in building, joinery, and plastering, &c.—Apply to Mr. S. H. KAY and SON, Wythe-street, Strand.

**WANTED immediately, a MASON'S FOREMAN,** to take the charge of a country yard. He must be competent to carry out church restorations, to execute Gothic carving, and apply by letter to S. W. Foster, 10, White, St. Mary's, stating age, terms, and qualifications.

**TO PARENTS AND GUARDIANS.**  
**WANTED, as an APPRENTICE** to a BUILDING, a respectable and well-educated Youth, with a knowledge of the routine of a builder's office, will be combined with the practical department of the business.—Apply to W. SANDS, 1*st*, Currier-street, Chancery-lane, London.

**WANTED, a good ARCHITECTURAL DRAUGHTSMAN.**—Apply to J. W. and J. HAY, St. George's chambers, Liverpool.

**WANTED, a good SHOP FOREMAN** in the JOINER'S DEPARTMENT; one who has a thorough knowledge of his business, including structures and handiwork, and a competent and sober countenance. A steady man, with good references, required.—Apply to Messrs. GRIGGS and SONS, Builders, Northgate, Colchester.

**WANTED, a TOWN TRAVELLER** in the Wholesale WINDOW GLASS Trade.—Apply, by letter, to E. C. No. 10, St. Martin's Church-yard, Southwark.

**WANTED, a FOREMAN to a FACTORY.** A previous knowledge of the business is not essential, as being able to write and keep the accounts of the work. He will be required to reside in the factory, and to be a steady man, with good references, required.—Apply by letter, stating age, to A. M. Z. Messrs. Jones and Canton, 47, Eastcheap.

**SMITHS AND TURNERS.**  
**WANTED, a HANDY SMITH,** who can turn at the lathe, fix up smith work, good fireman, and shepherd of a small flock. Apply by letter, stating age, how long employed, and wages, to F. K. No. 1, York street, Covent-garden.

**WANTED, immediately, a JOURNEYMAN PAINTER, GRAINER, and PAPER-HANGER,** to whom good wages will be given, and constant employment. Good references will be required.—Apply to Mr. SMITH, Pen-ter, 1, B-street.

**WANTED, in a small Building Establishment, a YOUNG MAN as CLERK.** He must have some knowledge of Architecture and Construction, and be conversant with the several branches of the Building Business, and competent to measure and value bills. A good handwriting, and unexceptionable references as to ability and respectability, are indispensable. As the advertiser attends much to the business himself, he does not expect to pay highly for the same, since he requires—A person, by letter or post-paid, stating age, &c. and all other particulars, to W. G. 32, York-street, Regent's-park, N.W.

**TO COOPERS AND OTHERS.**  
**WANTED, as UNDERFOREMAN** in a CEMENT MANUFACTORY, a Young Man who has worked in a cement works. He will be required to undertake the inspection of the works, and to make himself generally useful. One need apply to the proprietor for a satisfactory reference. Character—Application to be made, in the first instance, by letter, addressed Mr. C. J. HILTON, Cement Manufactory, Faversham, Kent.

**TO GRAINERS AND WRITERS.**  
**WANTED immediately, a good Hand,** to whom constant employment will be given. Wages 3*s.* per week.—Apply to JOHN FARRINGTON, 13, Sineat-street, Lincoln.

**WANTED, a Person to fill the Office of INSPECTOR OF NUISANCES, and as an ASSISTANT to the SURVEYOR to the SANITARY LOCAL BOARD of Health.** Salary, 2*l.* per annum.—Applicants, with testimonials, may be sent to the SURVEYOR, in the order of the Board, by order of the Board, on May 3, 1857. EDWIN WITCHELL, Clerk.

**TO ENGINEERS, IRONFOUNDERS, CONTRACTORS, AND OTHERS.**

**WANTED, by a respectable Man, aged 36,** agricultural machinery, whistles, RE-ENGAGEMENT, as CLERK, &c. in either of the above departments; or Collector of Rents to an estate, or to be properly acquainted with the current price of materials, &c. &c. of the same. Security given. A free ALPHABET, care of Mr. Holt, Stanmore, &c. 2, Dunsin-place, Camberwell-green.



# The Builder.

VOL. XV.—No. 745.

**C**ROWDS continue to visit Westminster-hall, to inspect the competition designs for the proposed Government Offices in Parliament-street, and the plans for improving the neighbourhood generally. The judges have been appointed, offices have been taken for them, and the greatest excitement prevails amongst the competitors. The tribunal consists of the Duke of Buccleuch, Earl Stanhope, Lord Eversley (the late speaker), Mr. Stirling, M.P. Mr. David Roberts, R.A. Mr. Burn, Fellow of the Institute of Architects, and Mr. I. K. Brunel, member of the Institution of Civil Engineers. The fact that the Duke of Buccleuch possesses a mansion immediately adjoining the site to be treated, about to be enlarged or rebuilt, and that Mr. Burn is his architect, may lead some to assert, by and by, that predilection for certain arrangements affecting personal convenience has weighed in the decision. All the judges, however, are understood to be men of the highest integrity, and if they fail in making a correct selection, it will not be through want of will to do what is right. The task is one of great responsibility, and, properly performed, will involve immense labour. Let us hope that the judges are prepared to give that patient attention to the matter which it demands.

When we talk of the difficulty of the task, we speak from personal knowledge: none can judge of it but those who have made the attempt to master the various propositions set forth with pen and pencil by the various competitors. The intimation in our pages last week, that we should be glad to receive copies of any reports sent in with the designs, has brought upon us an overwhelming pile of papers, to say nothing of the correspondence on the subject, a small selection from which will be found in our present number. The reports will be looked at as they are needed.

We alluded in a previous article to the fact that the authorship of a large number of the designs was perfectly well known: since then, the anonymous has been for the most part abandoned; competitors of any position felt that they were disadvantaged by remaining unknown, while the works of contemporaries were mentioned with the names of their authors; and the result is that throughout the Hall reserve has disappeared, and the authorship of nearly every design of note is known and publicly recognized. Thus to name half a dozen noticeable designs to which we shall not arrive in the course of the present article,—No. 69 is given to Mr. Knowles, 76 to Mr. Lamb, 77 to Mr. Garling, 99 to Mr. E. M. Barry, 112 to Mr. Robert Kerr, 116 to Mr. Scott, 144 to Mr. Cockerell, and so on.

Omitting for the present any general observations, we now proceed to notice some of the various designs; but before doing so, we would appeal earnestly to the Government on behalf of the large body of architectural assistants, and of the working classes generally, and ask that the Hall should be allowed to remain open till dusk, instead of closing as now at six o'clock. There are hundreds who cannot by any means reach Westminster-hall until after six o'clock, who are yet most anxious to see the designs. We have received many pressing letters on the subject, and would strongly urge that the request should be granted. We again express a

hope, too, that the Exhibition will remain open longer than was first intended.

The author of the design No. 6, marked "Bramante," contributes a street plan, a block plan of the Offices, and a design for the Foreign-office. He retains the present site of Westminster-bridge, adopts the site of the Horseferry, and widens Hungerford-bridge. He is one of those who boldly appropriate the site of Richmond-terrace. Thus he is able to get two similar blocks of buildings at opposite sides of the new street—which takes the place of Parliament-street in nearly all the designs. He also proposes to remove Dover House and the Horse-guards, and to construct, about the middle of Whitehall, a place, oblong or oval in plan, opposite the Banqueting-house. The style of architecture which he adopts is that of Bramante, with the addition of high curved roofs.

No. 7, "Roma," is a design for the War-office and Foreign-office, which, as in most of the designs, are joined in one building. The plan exhibits large inner halls, lighted from above, with corridors around, giving access to the several apartments. In decorative character the design may be called Greco-Italian of the modern German school; indeed, the building, externally at least, is an adaptation from well-known works on the continent. Square masses at the angles are surmounted by peristyles; and a larger peristyle crowns the centre,—a statue being placed on the middle of each of these portions of the building. The entablature is surmounted by a range of ornament, formed chiefly of griffins or chimere.—No. 9, with the motto "The Ides of March are come," appears to be a veritable German design, but of a different character. The author contributes a block plan, in which he retains the site of Westminster-bridge, and a design for the War-office and Foreign-office, in which the Gothic style, or what may be called a poor German version of it, is chosen. Groined ceilings are introduced throughout the rooms.

No. 12, marked A C, includes a general street plan, a block plan, and longitudinal section through the Offices, and complete sets of drawings for the War-office and Foreign-office. The author appears to be a Frenchman. The general plan would provide some of the best possible arrangements for street communication conjoined with architectural effect; but displays an amount of disregard for existing lines of thoroughfare, such as no English competitor would have dared to venture upon,—the Strand and Cockspur-street being, we think, almost the only routes that are unaltered. With reference to the short time allowed for the designs, it may be well to refer to what this competitor says of his own case. He received the programme on the 25th of November, 1856; then spent six weeks in various studies; passed a fortnight in London, and had but six weeks left to finish his design in the midst of other engagements. His general arrangement (disregarding the present Board of Trade, which he preserves, like most of the competitors) is as seven blocks of building, symmetrically arranged, or on what the professors call a good "academic" plan, around a "Place du Gouvernement," crossed by the Whitehall extension, or new Parliament-street. On the major axis of the plan, so to speak, or dividing equally the eastern portion of the ground, is the line of a street joining the place with a new site for Westminster-bridge. The latter forms the datum for the whole distribution. That datum, however, may be a false one,—for, it appears to be chosen under the misapprehension that a change of site was dictated to the competitors. The mistake leads the author to the conclusion that Great George-street would be unnecessary, and, therefore, to obtain absolute symmetry of plan, he has one proposed arrangement covering the site of that street

with a portion of the buildings. The suggested site for the bridge, also, as in all the plans where a similar position is shown, has the effect of increasing the inconvenience of the traffic which it was one object to divert from the Offices, a point which will be found treated of in our articles of Dec. 18, 1856, and other dates. The Treasury, with an official residence in a semicircular projection, occupies the chief position, and is joined by covered ways to the Foreign-office and War-office on one side, and to the Privy Council and other offices on the other. The several buildings are shown detailed into apartments, in the "block plan." The style is a plain version of the now prevalent revival of the French "Renaissance." The general street plan, we may say, as much as the English plans, recognizes our plea for the provision of three carriage routes. It provides the Horseferry-bridge, and one with approaches from Charing-cross, but removes Northumberland House for one of those approaches. Indeed, there are six ways radiating from the *été du pont* of the Charing-cross-bridge, in this design,—viz. two, right and left, on the embankment; one north, cutting through the Adelphi, or thereabouts; the one across the site of Northumberland House; one to the Horse-guards; and one to Parliament-street, opposite the angle of the War-office.

A contrast to the character of the last-named design is afforded by the next work to it, No. 14, with the motto, "Non omnia omnibus congruunt," which seems to be the work of a German architect. It is a design for the Foreign-office, and has arch-headed windows, with mullions and Gothic tracery, panelling to the masonry, and shafts to the angles.—The author of No. 16, "Light, Air, and Convenience," has a general plan, and designs for the Foreign-office and War-office, in two similar blocks, with road and archway between. He proposes, in addition to other bridges, one near to the Houses of Parliament, south; but the most curious feature of the plan is the proposal to fill up the middle of the Thames, and form a garden, confining the water-way to two canals, one on each side. As plenty of "stuff" would be wanted for filling in, an observer suggests that the looked-for comet might be laid down: that, however, would set the Thames on fire. On the sheet of the general plan referred to, the author has written the words,—"Pure air and exercise ~~versus~~ dirty water."—The author of No. 17, with a monogram of the letters, Z and B, has some capital drawings to a good Italian design, with superimposed orders. His designs generally include a street-plan, a block-plan, and a design for the Foreign-office. He preserves the present site of Westminster-bridge, and provides another bridge with two approaches from Charing-cross,—but appears to contemplate the removal of Hungerford-bridge, a suggestion which it thus appears is not peculiar to the plan mentioned in our last. No bridge is shown at the Horseferry. Amongst his other improvements are the opening a way from the Strand to the Mall in the Park (as shown in many of the plans), the enlargement of the National Gallery, which most of the competitors apprehend rightly, should remain on the present site; the erection of a building for the Royal Academy south of Trafalgar-square, near the Park entrance; and a road north to Oxford-street from the west side of Trafalgar-square, past the end of the National Gallery. The general division of the offices is into seven large and other smaller blocks; and we may here again observe as to the majority of cases, that—first by the intersection of Parliament-street, and afterwards by the dictation practically made by the irregular site—absence of variety and suggestion, and want of the desired concentration in the offices, are far too greatly characteristic of the block plans. The plan of



the Foreign-office is arranged with two internal courts and corridors; but some of the latter are defective as to light, a disadvantage which also is found, to a great extent, in of the designs generally. The orders here, three in number, are of engaged columns and pilasters; and large arch-headed windows to the first floor, the Vignola cantilever cornice, and a balustrade with tall pinnacle-like terminations to the pedestals, are amongst the other features. The principal front has a projecting centre, and in other parts narrow divisions breaking out; and has an arched carriage porch. No. 18, "Veniant et Spectentur," again like other designs for the two offices, has them in one, with a carriage-way through. The War-office has a great central court, roofed over with iron and glass, and having galleries round; but in the Foreign-office, corridors are provided. Here, again, there is a deficiency of light. Superimposed orders and arcades form the decorative features.

The names of the competitors so far in our list, do not appear to be generally known. But in most other cases the authorship of the designs is either apparent on the face of the drawings, or, as we have already said, is generally spoken of in the Hall. There can be no advantage, therefore, in our omitting names in this place. Indeed, it must not be forgotten, carrying out what we have said as to advantage from an exhibition, that the benefit does not accrue under the system of mottoes.

The excellent designs numbered 20, and marked "Corona," have strong points of resemblance to the town-hall at Leeds. Their merit is both in the plan, and the decorative treatment. The drawings consist of a block plan, sketches of all the buildings proposed, and complete drawings for the War-office and Foreign-office. The author appears to preserve the present site of Westminster-bridge, but extends his plan over the site of Richmond-terrace. We should also observe that the parade at the Horseguards is shown enclosed, on a symmetrical plan. He groups the offices mainly in three symmetrical blocks. One of these, which may be described as in the form of the letter I with the addition of a semicircular piece at the top, is appropriated to the War-office and the Foreign-office. These form one design externally, though there is a separation on plan, by reason of the usual carriage-way across. The grand principle of distribution in the plan of each office, consists in the arrangement of the rooms round large inner halls, lighted from the top, with the three stories of rooms next the hall, set in,—each of the upper stories, 10 feet from the one below it,—leaving room for the corridors or galleries, on recessed stages. Thus, freedom of communication and good light, it is supposed, would be provided better than in the ordinary arrangement, and with a more economical use of the ground. The author shows that in the section of a building 130 feet across, by the suggested arrangement, a width of 30 feet would suffice on the ground level, for the area, or the distance between the opposite sides, and the whole of each remaining 50 feet could be appropriated to large rooms; whilst on the old principle, even with a total width of 140 feet, as 40 feet would be required for the area or court, both in the ground story and for the whole height, and 10 feet would have to be taken from each 50 feet in the middle of that distance for corridors, there would be both more ground taken up, and less accommodation provided; or to get the same accommodation on the ground story, with required area, the whole dimension would have to be made 160 feet. In other words, as he says, the arrangement with 140 feet requires one-thirteenth more width of ground; and that with 160 feet provides the desired accommodation, with an excess of ground over the chosen arrangement, of three-thirteenths. The decorative character of the design is that of the Roman style: the Corinthian order, with elaborate enrichments being used. The porticoes are recessed and without pediments, and the attics are broken to form masses at the angles and intermediate points, for the support of sculptured trophies. The War-office has three porticoes at the end, with a grand flight of steps in the middle; whilst at the Foreign-office end, the residence is in the semi-circular projection,

enclosed by a balustraded area, with tall candelabra on the piers. The other Government offices are shown treated in the same style. The defect of the design is one arising from the provision of two stories in the same height of columns: windows being introduced in such positions as involve disadvantages in the use of porticoes and likewise a certain detracting from the appearance of a portico itself. This point, as to the portico as a feature in a design, is one which we have heretofore treated of. The style, however, is selected on the plea that it emphatically is one permanently exhibiting monumental character; whilst, other opinions of it we have heard expressed, to the effect that it does not exhibit the character appropriate to offices. Both in plan and decorative character, however, the design is one of great merit.

No. 19, with the motto, "Honos alit artes," is a design for the Foreign-office and the War-office in one block, and is the work of a foreigner. The plan has a semi-circular projection to the north, which is objectionable as shown, by requiring a similar curve in the line of the street. The style is the Greco-Italian practised in Germany. In the present design, many of the details are novel to English eyes, and perhaps suggestive; but good proportions are little regarded—some mouldings being enormous in size; and in grouping there is a want of relation between the centre and the wings. To the first floor there are square openings, each filled in with four columns with regular entablature returned at the ends, forming a loggia before the actual window. Some of the other windows have dressings diminishing upwards. A range of statues without pedestals is placed along the cornice. There are several examples in the exhibition, of this German school of taste: invention is exhibited in them, or in their originals—the buildings of Schinkel, Klenze, and others—and much could be learned from them; but they should be looked at with discrimination.

We have some difficulty in following the order of the numbers, so disordered is the rotation in the hanging; but we come to No. 21, "Confido Conquiesco," a design in the old style of builders' architecture, which is one of a lot in the collection, such as acquire a sort of curious and historic interest from the growth of good art of which there is so much evidence in the works around them. Of the class referred to is No. 22, with the motto "Only I," the ornament of which might have been designed by a writing-master, or professor of penmanship, rather than an architect; also No. 24, "Bapheia," in which the general plan (where the site of Westminster-bridge is retained) has had the chief attention, and where the War-office and Foreign-office are in a version of Gothic; and No. 28, "Labor Omnia Vincit" where there are as many as twenty-four drawings carefully mounted, but exhibiting corridors unillumined, and orders and window-dressings of the worst character and proportions. No. 29, "Circum Tecta," a design for the War-office, seems to be on the model of Soane's Board of Trade, with the addition of a portico and cupola; whilst No. 31, "In spe laboro," copies the style of Gibbs, having two stories treated with major and minor orders. One thing is demonstrated by the present exhibition, alike by the good and the bad of the designs, namely, the impolicy of ever going back and attempting merely reproduction of models. No. 26, "Nothing like trying," a design for the War-office, neatly lined in in brown ink, might be noticed for the peculiarity of its treatment, the style being like the Florentine castellated, and the entrance being at the angle, through an arcaded porch, somewhat Byzantine in character, between massive towers. But No. 25, "All's well that ends well," a design for the War-office, shown in a neatly-outlined set of drawings, which might pass for the work of a foreigner, deserves more attention. The plan has the principal staircase reached from the grand entrance in the centre, two open courts, and corridors round, joining at the angles to circular staircases, which are well lighted. The principal elevation has three stories besides the basement, the windows of which last appear in the design, and has an elevated centre and two advancing wings.

Each of these portions has three main divisions or bays, marked by pilasters, piers, and vermiculated rusticated masonry, varied in design. The centre bay is deeply recessed and arched over at the top, with sculpture in the tympanum; and an open loggia or porch is introduced in the ground story, to the entrance. The top story derives its chief character from a small order of columns and pilasters. The style is the later or highly-enriched Florentine, but with traces of the study of modern works on the Continent. The window-dressings are carefully studied. The other elevations are differently treated, but are equal in merit to the one we have noticed.

No. 32—"Laboro et oro," exhibits a block-plan, and a design for the Foreign-office and the War-office, together. The design is Gothic, with pointed arched and tracered windows, a rich parapet, and stepped gables, which have, what appears, the defect of not according with any breaks in the front.—The author of No. 34—"Au bon droit," shows a street-plan, a general block-plan, and a design for the Foreign-office and War-office, in one, or with only arch-ways and a carriage-drive, as the separation. He retains the site of Westminster-bridge, and places a bridge at the Horseferry, and one at Charing-cross. One of the approaches to the latter appears to require the removal of Northumberland House, a measure which would be unneeded by the plan referred to in our article of December 13, and shown in many of the designs. We even think the removal has not obvious recommendations. The author would also remove St. Margaret's Church, a proposition which, though it has the advocacy of Sir Charles Barry, is, we apprehend, one that it is not desirable to set upon. Several of the competitors, however, propose this alteration. The plan of the War-office in No. 34, shows the rooms and corridors arranged round a quadrangle; whilst the Foreign-office has a central hall, 84 feet 6 inches by 78 feet, covered over, and with stairs leading up from it. The residence is next Charles-street, and it has a dining-room, 59 feet by 25 feet, and other apartments. The style of architecture is the French palatial. There are three stories; the two upper ones having coupled columns and broken entablatures, arch-headed windows, and truncated, or high Mansard roofs, curved as to the centre pavilion, with dormers and sculpture. The doorway wants prominence. The Foreign-office has nearly similar features, with a campanile of superimposed orders, inclosing a staircase, at the north-west angle. The drawings have great resemblance to some, numbered 54, attributed to the Messrs. Habershon, which have the same motto.

No. 35, with the motto, "Thou hast covered my head in the day of battle," is a Gothic design for the War-office and Foreign-office, joined; and both from the evidence which is on the face of it, and from report, owes much to Mr. Ruskin. Mr. Woodward alone, or in conjunction with Sir Thomas Deane, has, however, some of the credit of the architecture. As in the majority of designs, there is an archway in each of the opposite sides for a carriage-way through. The War-office portion in three stories and an elevated basement, forms three sides of an internal quadrangle. The entrances and principal stairs are in the centre of the portion of the plan on the Parliament-street side; there are open courts at the angles, and internal corridors, which, perhaps, are rather deficient in light, along the other sides. The Foreign-office with residence form an oblong block, with internal courts, and a staircase in the centre. It has three stories, and a mezzanine in one part, in addition. Windows, with pointed arches, and shafts coupled in the thickness of the wall; a range of windows, circular or multi-foil, in the basement of the War-office; and of square form, with shafts, in the corresponding position of the Foreign-office; stairs at the angles, which are marked externally by stepped openings, and raking lines in the fronts; high truncated roofs to square portions of the plan; dormers; a recessed porch; the alternate *voussoirs* of arches marked by darker-coloured materials; enriched strings and bands; and generally a profuse application of sculpture in



relief—on piers and spandrels—are the prominent characteristics of this design. Much of the ornament is of great beauty, and displays remarkable fertility of invention. It consists either wholly of figure subjects in a series, or detached, or of figures and foliated ornament intermingled. One elaborate subject fills the *tympanum*, or space between the pointed arch and a sub-arch, segmental in form, which is over the entrance to the quadrangle. In the façades, generally, the ornament is most elaborate near the base of the building, in accordance with one asserted principle,—which, however, to us, appears inconsistent with the impression of an aerial lightness and beauty conveyed obviously in many cases by the appearance of elevated position, as in the case of some of the peculiar forms in Gothic architecture itself, as the crocketed spire, and the battlements, pinnacles, and flying buttresses of most elaborate character, which often enrich the top of the tower. The sculptured ornament, too, here, however good in itself, is scattered about, so that there is a deficiency of the special architectonic character,—the framework of lines, and the order in masses,—which most conduces to the effect of sculpture itself. Much of the ornament might have been thrown on the wall, as Turner is said to have begun to paint a picture by throwing his colours against the canvass. Still the ornament deserves careful examination.

In No. 36, with the motto "Industria," the author moves the Middlesex end of Westminster-bridge a little to the north, needlessly, and with some disadvantage as to the angle on the other side, at the junction with the Bridge-road, which results. He makes the change, merely to get a piazza or place, about eight times the size of New Palace-yard which would form the angle of his new place. He would put the Law Courts south of the Houses of Parliament. A better suggestion which he makes in common with others, is for the prolongation of the Haymarket southward to the park. The design for the War-office and Foreign-office is Italian, with three-quarter columns; and there is a cupola which groups ill with the main front.

No. 37, "*Populus arrium vinculo conjungen-dis*," a neatly drawn production of foreign origin, comprises a detailed block plan and drawings for the Foreign-office. The style is Italian, with Mansard roofs, pilasters, and rusticated angles, and arches enclosing windows with Italian dressings. —No. 39, marked "Perseverantia No. 1," shows the Foreign-office and War-office in one block; and the plan has what is called a "columniated gallery of communication," 370 feet long and 20 feet wide, which, unless the author is calumniated by us, would be inadequately lighted from the ends of certain internal courts. Externally, the Italian style is attempted. There is a range of arches springing from ill-proportioned columns, and an ugly dome, which terminates in something that resembles a Corinthian capital supporting an obelisk. The distinction which there is between productions of the class to which this design belongs, and those of *architects*, was never so well defined as it is in this exhibition: "our architects," indeed, may now claim a very high place both for technical skill and taste. Amongst the latter class we may well include the author of the design under the number 41, with the motto "Pro Regina et Patria Semper," said to be Mr. Rhind, of Edinburgh. He has two alternative street plans, in which he proposes considerable alterations about Whitehall; and he has projected a design for the whole of the offices,—those on the west side of Parliament-street being in two similar groups (of which one contains the Foreign-office and War-office), joined in the street and in the park front by colonnades on steps. It appears that he would complete the new Westminster-bridge, and add another bridge with an approach from the middle of Whitehall,—contemplating, also, one at the Horseferry. He would remove the Horseguards to the north of the parade—the site of the Admiralty,—and also Dover House and the present Board of Trade and Treasury buildings, and would form gardens on the site gained, and also on the present site of the parade. He also would remove St. Margaret's Church to improve the area thereabout. The plan of the Foreign-

office and War-office has a great central court, surrounded by colonnades, or porticoes, having three ranks of columns along two of the sides which give access to the corridors of the Offices. There are also two other open courts in each Office. As to external character, the design shows in the principal view a pleasing group of Italian features, including arcades and colonnades, loggias, and receding upper stories, set between square masses rusticated at the angles and carried up above the general height as towers with Italian cornices and roof coverings. In one part, a fourth story is added between the towers, and forms a good central mass.

No. 42, with the motto "True," and the device of three arrows crossed, is obviously by Mr. John Shaw, and is in his peculiar style founded on that of Chelsea Hospital, or rather of Sir Christopher Wren, with elaborate ornament added. In the present case, we should also say, he would intend to use only stone. The War-office and Foreign-office appear as two similar buildings externally, with a gateway in each front, between. One building has the corridors lighted through the floors. Much attention has been given to the internal arrangements, which are shown in good sectional drawings. In the exterior, we should say, square masses are carried up as towers, with quadrangular domical roofs, at all angles of the buildings; the details of the rusticated piers and pilasters are well studied; and the building is covered by a Mansard roof, with dormers, and a railing at the top. The chimneys, as single shafts, are ranged along the front, over the external walls. —No. 44, "Pro Grege," includes a street plan, general block plan, and designs for the War-office and Foreign-office. The large plan shows that the author proposes to keep the site of Westminster-bridge, to widen Hungerford-bridge, and to place a bridge at the Horseferry. In the War-office he provides an open arcade to the ground story and a portico on the first-floor, reached by the terrace over the arcade, and a hall and staircase in the centre, surmounted by a dome. The corridors are well lighted from two large open courts. In the Foreign-office the same general principle of plan as to the courts, is carried out; and the decorative features are varied by the more prominent use of columns with broken entablatures, and by the introduction of two small towers.

No. 45, which bears the motto, "*Le Beau dérive du Vrai; Le Vrai en Architecture c'est l'Utile*," we shall probably not be wrong in giving to Mr. Hector Horeau. The drawings are too slightly coloured to be seen properly; they, however, exhibit a general street arrangement (by a plan and view), a block plan, and designs for the Foreign-office and War-office united. In the general plan, the radiation of streets from one point gives some resemblance at first to the plan in No. 12; but the site for Westminster-bridge is retained—widened, however, on the down-stream side; and the author removes Hungerford-bridge, spanning the river thereabouts by a single arch; whilst he contemplates also a bridge at the Horseferry. He also appears to remove Northumberland House, and many of the conventual buildings about Dean's-yard. The two Offices are united by buildings of less elevation, and have a great central court; whilst each Office has two courts with corridors. As in many of the French plans, convenience and effect are served by cutting off the angles of rooms and quadrangles. The architecture of the design is a plain version of the French style, with Mansard roofs, pavilions, and dormers.

Such is the arrangement, or derangement of the exhibition, that we know not where some of the numbers are, and may therefore have to omit naming many designs from that cause alone. Of No. 47, "*L'Espérance*," which we come to next, we have only noted that the author proposes a skew-bridge from the middle of the ground, with curved approaches. But No. 49, a design for the Foreign-office, by a German, deserves to be looked at for its details, which are Italian, of the modern German version. The author shows a fountain-court, roofed over with ornamental iron-work and glass. Blocks of buildings at the angles are carried up; there is an open loggia of arches, decorated with fresco paintings on the first-floor, and a belvedere story in the

centre. Small plain arch-headed windows are used; and there are plain pilasters to the principal story, bearing Persian figures in the story above.

No. 50 has the motto "No Corridors," which the author, Mr. Truefitt, has adopted to express the distinctive feature of his arrangement for the Offices. The rooms in each Office, he proposes should be ranged round a halls, with galleries, giving access to the rooms. He has some peculiar proposals, also, in his street plan and general block plan. Preserving the site of Westminster-bridge (though showing an alternative site north of Richmond-terrace), and widening Hungerford-bridge, and having a bridge at the Horseferry, he differs from the other competitors by leaving Whitehall, and Parliament-street, as suitable for cart-traffic, nearly as at present; and with the view of giving a proper approach on state occasions, and opening a vista to the Victoria-tower, he forms a distinct way from Trafalgar-square, west of the Horse-guards, to a circus which he places opposite the centre line of Westminster-bridge. The parade he forms, west of this "way," on a regular plan; and the Foreign-office and War-office he places at right-angles to each other, and perhaps not exactly as the instructions required. The Foreign-office residence is detached, and looks somewhat small. The Italian style, without columns, is adopted for the decorative character. The design appears to have suffered from a cause—but for which it should constantly be recollected, the evidence of architectural talent in the present competition would have been even greater than it is,—we allude again to the inadequate time allowed by the "instructions." As to No. 50, in which the leading idea as to lighting was good so far that it avoids the mistake of many of the designs, it is curious to hear the passing criticism of the British public—traceable, we believe, not to the defects of the design, but merely to something which happens to disatisfy in the colouring of the plans. It is one evil of competitions, that architects who look to them for employment, have to embark in so many, that due study of some one subject is in danger of being neglected.

No. 51, with the mottoes, "Urban" and "Non Nobis Solum," to designs for the street arrangements, block plan, and the Foreign-office,—we need only refer to as showing a skew-bridge with approaches from Whitehall and Charing-cross, and tending towards a point in the Bridge-road.—No. 55, a German or French design, with the motto, "The fair, the truth, the utility" (we always quote literally, the blunders whether of English or Latin notwithstanding; and of the latter sort there are many), is a design for offices, with many of the *minutiae* of contrivance in plan to which we lately referred. One of the courts appears to have galleries at the ends, which are joined by a bridge. The decorative treatment, in a version of the Italian, is deserving of notice.

No. 57, "Westminster; V. R." comprising a street plan, a block plan, and designs for the Foreign-office and War-office, makes a slight alteration in the Middlesex end of the bridge, and proposes that the Park front of the Offices should be in the form of a crescent,—the Foreign-office residence to occupy one half and the Admiralty the other half; and makes various alterations in the street arrangements.

No. 52, with the motto "Hope" in a triangle and circle, by Mr. Lane, has a well-studied plan for the War-office and Foreign-office, occupying three sides of the oblong, with the residence detached in the middle of the other side. The quadrangle is approached by a gateway from Charles-street, opposite the back of the residence, through a range of connecting buildings one story less in height than the portions at the ends; which last, like the residence, are well provided with courts, and inner halls and staircases; whereby the corridors are better lighted than those in many of the designs. It is to be regretted that the merits of the arrangement are not shown by sections. The design is in the Italian style. There are arch-headed windows in the top and bottom stories, and there are architraves and pediments to the other windows; and some novel details are introduced.







## TUNBRIDGE WELLS.

OPERATIONS have been commenced for the erection of the proposed new St. John's Church, on the Lew. The erection of the proposed church on the Calvary estate will also, we believe, soon commence, so that Tunbridge Wells will have the advantage of two additional churches. It is to be hoped they may prove ornaments also in an architectural point of view. If those who own property and regulate the affairs of places of resort like Tunbridge Wells were wise, they would take care that every step made should tend to the improvement and adornment of the town. Some substantial shops have been recently built. On the 1st of May, when we happened to be in this pleasant place, that part of the well open to the wayfarer (the water of which, by the way, is of most literary character, having the taste of modified ink), was littered with pieces of paper, sticks, and other rubbish. If the show be made of keeping a part open to the public, it should also be kept clean and wholesome in appearance.

The "High Rocks," the most attractive sight in the neighbourhood, want a little artistic care. A very beer-shopy aspect has been given to part of this beautiful morsel of wayward Nature by some vulgar erections and perverse arrangements. It is to be regretted that Penshurst, hard by, is only to be seen on one day in the week—Sidney's Penshurst,—

"Than whom no greater, braver man,  
His own delightful genius ever feigned,  
Illustrating the tales of Araby,  
With courteous courage and with loyal loves."

THE LATE THOMAS SEDDON, ARTIST.  
THE SOCIETY OF ARTS.

At the second *conversazione* of the present session, held on Wednesday evening, the 6th, the pictures and sketches of the late Thomas Seddon were collected for exhibition under the superintendence of the committee for the "Seddon Subscription Fund," and of W. M. Rossetti, the Honorary Secretary. The paintings are still to be seen at the Society of Arts.

Mr. Ruskin delivered a very interesting address with reference to them. In the course of it he said, as to the purchase by the nation of Seddon's picture of Jerusalem, he believed that some objection had been taken to the idea of placing this picture in the national collection of paintings, because it was said that they sought to bring it forward as a unique picture, or as one so admirable that they were never likely to look upon "its like" again. For his own part he differed from that view. It was not because he considered it remarkable, but because he considered it not remarkable, that he wished this picture to become the property of the nation: he regarded it as the type of a class of pictures and of works which might be understood and imitated by other men, and the understanding of which would be advantageous to the nation in future. In like manner it had been said that it was sought, as it were, to canonise Seddon as a saint—immortalise him as a hero—that they wished to bring forward his death as a martyrdom to the cause of painting. But it was not so. The death of Seddon had nothing remarkable or extraordinary in its character, but was merely a type of a class of deaths which were being continually offered up to the nation by great and good men, but which, in this case, a concurrence of pathetic circumstances justified them in bringing before the public notice. The simple sacrifice of life had in it nothing unusual: it was, on the contrary, a melancholy thing to reflect how continually we all of us lived upon the lives of others, and that in two ways, viz. upon lives which we take, and upon lives which are given. It was a terrible expression to use—this of taking life—but it was a true one. We took life in all cases in which, either for higher wages, or by the compulsion of commercial pressure, men were occupied without sufficient protection or guardianship in dangerous employments, involving an average loss of life, for which life we paid thoughtlessly in the price of the commodity which, so far, was the price of blood. Nay, more than this, it was a well-recognized fact that there was scarcely an art or a science in the present day, in which there was not some concomitant circumstance of danger or disease, which science had not striven to abate proportionably with the endowments to advance the skill of the workmen. And thus, though we had abolished slavery, we literally bargained daily for the lives of our fellow men, although we should shrink with horror at the idea of purchasing their bodies; and if these evils, arising partly from pressure of population, but more from carelessness and cruelty in masters and consumers, from desire of cheapness, or blind faith in commercial necessities,—if these evils went on increasing at

the rate it seemed but too probable they would, England would soon have to add another supporter to her shield. She had good right still to her lion, now more than ever; but she needed, in justice, another, to show that if she could pour forth life-blood nobly, she could also drink it cruelly: she should have not only the lion, but the vampire. These remarks applied to what was only too justly termed the taking of life; but in other cases lives were given, as by the active and enterprising explorer of unknown regions, and the brave and devoted soldier and sailor. These sacrifices we might accept, if the cause in which they were offered was a just one. He had to bring before them that evening an instance of such a sacrifice, and to explain and justify its cause.

At the close Mr. Ruskin proceeded to narrate the establishment by Seddon, with the co-operation of Mr. Nevill Warren, of the North London School of Design for Workmen, in Camden-town, the principal superintendence of which devolved upon Seddon himself, conjointly with the satisfaction of the other arduous claims upon his time, attention, and hard labour. His great exertions during that period of his life, it was believed, impaired his constitution, and were regarded as the primal cause of the failure of his health in Syria, and his dying there. Mr. Ruskin then entered into a recital of the labours of Mr. Seddon in his last great work of "Jerusalem," and concluded by appealing to the Society and those present to aid in doing justice to a great artist by the recognition of his genius.

## PARTIES FINED UNDER THE BUILDING ACT.

ON Wednesday, the 29th of April, a person calling himself a journeyman ironmonger was fined 2*l.* at the Mansion-House, for putting up a stove for trade purposes, in the northern district of the City, without notice to the district-surveyor, the prosecution being conducted by the Metropolitan Board of Works, through their solicitor.

The next day, Mr. Norton, a carpenter, in Long-lane, Bermondsey, was fined at the Southwark Police-court 2*l.* for erecting an earthenware funnel for carrying smoke from a copper furnace, and 1*l.* for the erection of an addition to a house, in each case, without such notice to the district surveyor.

In both the first two cases penalties had also been incurred, under sec. 21, for work done contrary to the rules of that section, but were not pressed for.

## ESSEX COUNTY LUNATIC ASYLUM.

The engravings in our present number illustrate the Essex Lunatic Asylum, completed not long ago under the direction of Mr. H. E. Kendall, jun. The design was obtained in a private competition of ten selected architects, the invitation going from the committee of visitors, who offered the work to the author of the best design, 100*l.* to the second best, and 50*l.* to the third.

This was in 1849; and, in July, 1851, the committee accepted Mr. G. Myers's tender for the execution of the works, which were then commenced, and were completed in July, 1853. The outlay, on the certificate of completion being given, was as follows:—

Building and fittings .....	£58,940
Engineering ... ..	6,085
	£65,025

The asylum accommodates 150 patients. On the architect giving it up complete, it was arranged and prepared for the patients by Dr. Campbell, the medical superintendent, under whose management it is at present conducted. It is erected at Brentwood, on the Eastern Counties line, about 18 miles from London: 86 acres of ground are attached to the asylum: the purchase-money for the latter was 8,000*l.*

The building works comprise the asylum, its offices, and out working offices, the chapel, and residents' house, &c. the whole occupying, within the boundary walls, an area of 8 acres of ground in extent; together with a large gate-lodge, a bailiff's house and farm buildings, a large engine and boiler house, with drainage for every building throughout.

The engineering works include the reservoir, steam-engine and boilers, pump work, tanks, the hot and cold water services and supply, fire mains, the warming and ventilating throughout, gas fitting, steam cooking-apparatus, besides the general fittings of stoves, baths, lavatories, water-closets, bells, the drying closet, and fittings of brew-house, washhouse, &c.

The asylum stands due east and west: the latter aspect being more genial and quiet is given up to the

patients' wards and airing courts. The resident's house looks east, and forms the entrance to the asylum: removed from the public road about 300 yards, it includes the residence of the physician superintendent, the steward, matron, and assistant-surgeon, all being distinct, with separate staircases to each: it contains also accommodation for the house-porter and domestic servants, a large committee-room and clerks' room, visitors' room, a room for the chaplain, the patients' reception-rooms, male and female, kitchen offices for the superintendant and steward, a large central entrance hall, and entrance arcade, &c. From the house, passing round the kitchen offices, and to the right and left the patients' wards are approached by cloisters or galleries of communication, paved with Staffordshire tiles, blue and red, laid aris wise. The roofs are open-timbered and stained: the door and window openings are of stone, some being filled in with quarried glazing, and some left open with ornamental iron work fixed therein. At the termination of these corridors, right and left, immediate access is obtained to all the wards and infirmaries of the main building devoted to the patients, the females occupying the wards or wing to the left, the males the wing to the right. There are seven wards and two infirmaries on one side, and six wards and one infirmary on the other side, together accommodating 450 patients, 150 in single, and 300 in associated, rooms. The whole of the west front is given up to the undisturbed use of the patients, having an uninterrupted view of the extensive and beautiful scenery around, with free access of air and sun, &c. The building extends in length from south to north, forward 800 feet, a longitudinal line; only broken just sufficient to allow of thorough light and ventilation at the ends of the galleries. The infirmaries advance in front on either side at the junction of the wards; and the convalescent wards recede or return from the front line on either side eastward, centralising the residents' house, kitchen, offices, and chapel. The ward galleries are 12 feet wide and 13 feet high: they all have large oriel and bays, the day rooms thrown open to them, and windows at each end. The ceilings are arched, and fire-proof, constructed with hollow hexagon-shaped bricks. The floors are boarded throughout the wards and infirmaries, except in the case of two of them for the unclean patients, where they are paved with Staffordshire tiles, red and blue, ornamentally arranged. The windows are of cast-iron fancy patterns, the casements opening outwards above the transoms; but the frames being double, when open, one of them remains in position unglazed, so that ventilation is obtained, combined with safety: this principle and the mode of opening is founded on a patent of the contractor, Mr. Myers. The chapel is built with Kentish rag stone to mark its character. The accommodation is for 300, all the sittings being on the floors.

The water tower is over the scullery: a cast-iron cistern or tank holding 10,000 gallons is constructed therein, supported on arched groining: from this tank the general distribution of water all over the asylum is made; 18,000 gallons per day being about the consumption, calculated at the rate of forty gallons per day each patient: this tank is supplied from a large enclosed reservoir constructed at the bottom of the grounds holding 40,000 gallons, the water from the springs on the ground running through it, always with a waste: it is forced from this reservoir up to the tank by means of a powerful non-condensing steam-engine, the height being about 150 feet, the distance 1,400 feet.

Every part of the asylum is lighted with gas, supplied from the town gasometer.

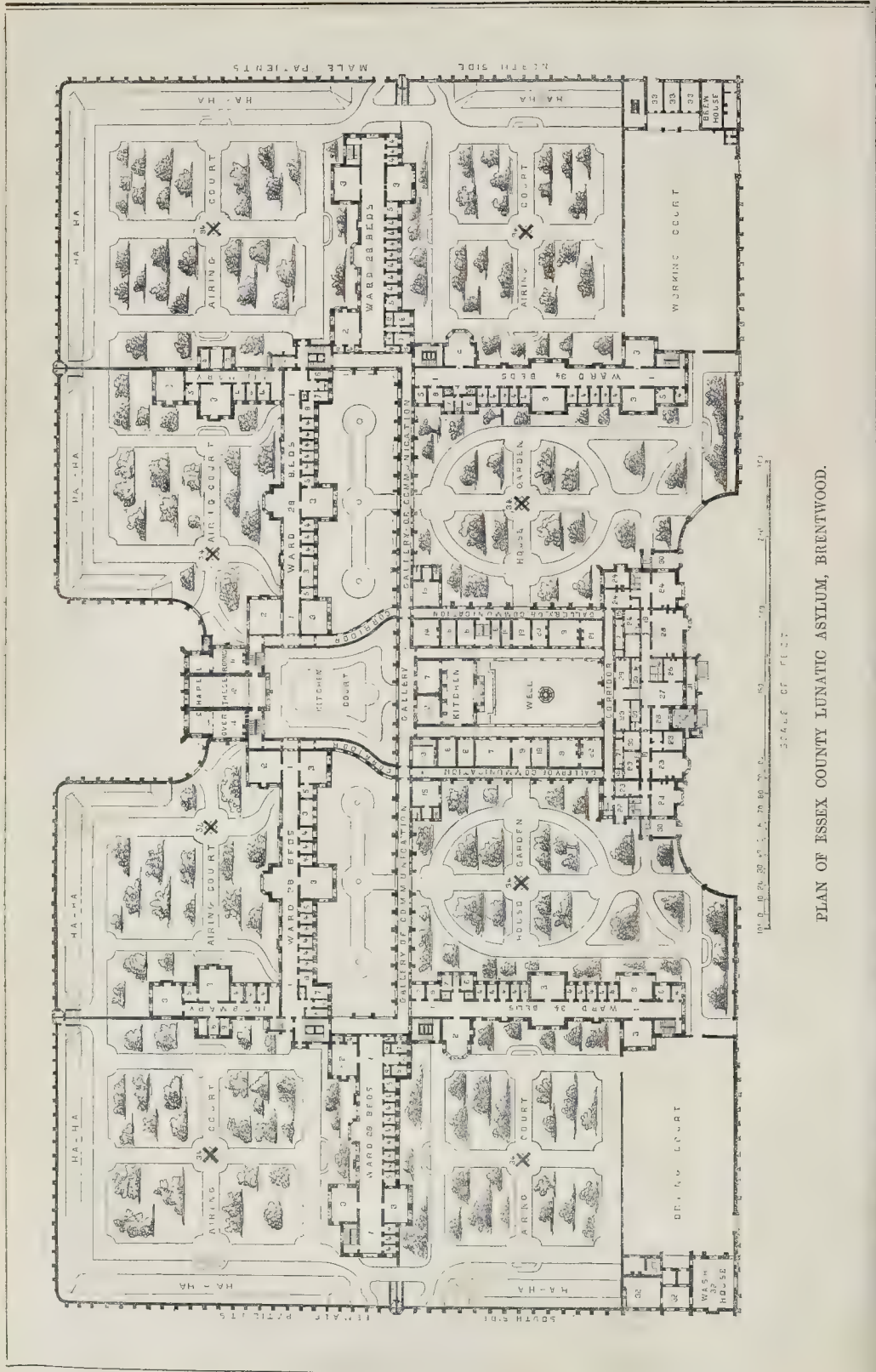
The engineering works were executed by Mr. May for Mr. Myers, the responsible contractor.

The style of architecture adopted throughout, externally and internally, is Medieval: the materials are stone dressings and red brick facings interlaced with black.

## REFERENCES.

1. Gallery, 12 feet wide.
2. Day and Dining Room.
3. Dormitory.
4. Single Beds.
5. Attendant.
6. Bath.
7. Scullery.
8. Lavatory.
9. Store.
10. Assembly-room.
11. School-rooms. *Mem.* The Chapel is over Nos. 10 and 11.
12. Distribution-room.
13. Cook's Room.
14. Servants' Hall.
15. Coals.
16. Kitchen Offices.
17. Bakehouse.
18. Flour Store.
19. Passage Ways.
20. Engineer.
21. Weighing-room.
22. Matron's Rooms.
23. Surgeon's Rooms.
24. Superintendent's Rooms.
25. Committee-room.
26. Clerks' Room.
27. Hall.
28. Porter.
29. Receiving-rooms.
30. Open Yards.
31. Arcade.
32. Washhouse and Laundry, &c.
33. Brewhouse and Workshops, &c.
34. Sun-shades.









ESSEX COUNTY LUNATIC ASYLUM, BRENTWOOD.—MR. H. E. KENDALL, JUN. ARCHITECT.



# METROPOLITAN IMPROVEMENTS AND THAMES EMBANKMENT.\*

So thoroughly has the tedious traffic of the streets got ground into the true Londoner's nature, that, to shorten his course from Piccadilly to the Bank, would be to rob him of a vested right or a natural privilege. If a railway train from Aberdeen or the Land's End arrives in London five minutes behind its time, the indignant traveller vents his spleen and writes a letter to the *Times*; but your dog-collared occupant of the knife-board of a Clapham omnibus will stirk on London-bridge for half an hour with scarcely a murmur.

Such being the result of the existing state of things, I will now direct your attentions

I. To the conditions of our streets, direct and lateral.

II. What they have to accommodate.

III. How they may be improved.

We must first direct your attention to the communications, east and west, beginning with the river, whose ample width enables it to supply the best possible means of communication between the City and Westminster, and their immediate neighbourhoods.

With all its advantages the Thames remains in a state absolutely disgraceful. The boats are the worst that sail on any river where the traffic is abundant. Our halfpenny, penny, and even our best boats, are a reproach to the metropolis. They are chiefly used by the very lowest, or perhaps I ought to say, the poorest or the humblest classes. As there is no respectable approach to any pier on the south side, and very few on the north, the general moving public must avoid the river until the boats are enlarged and the approaches made reputable.

Let any person examine the accommodation, and say whether it is not discreditable. Neither cab nor carriage can approach within two or three hundred yards of the piers, while the proper descents to the river by the noble stairs at London-bridge, are abandoned to other and not very creditable purposes. The pier at Paul's-chain is equally inconvenient: the one at Blackfriars is much better, and almost the only respectable landing along the river. At the Temple, Hungerford, and Westminster, are repeated the objections already named.

It would be interesting to arrive at the annual amount of the loss sustained by brewers, who-fingers, carriers, and proprietors of public conveyances, through stoppages in the streets. An ingenious friend of mine has gone into the calculation, and come to the conclusion that, within the City boundary, what might be done in ten minutes usually occupied fifteen minutes, sacrificing one or two thousand pounds per day, or from 300,000*l.* to 600,000*l.* per annum; but taking the loss at 300*l.* per day, there was a loss of 100,000*l.* annually—an amount almost sufficient to build a bridge once a year.

What are the streets expected to accommodate? This portion of my address I shall give in a tabular form, so that, at a glance, all who take any interest in the question may possess themselves of facts not to be overlooked, in arriving at a just estimate of the duties to be performed. But I may here condense a few facts, worthy of being permanently fixed in the memory.

The population of London was in 1801, 958,863; in 1811, 1,138,815; in 1821, 1,378,947; in 1831, 1,654,994; in 1851, 2,361,640.

Since 1801, or within 57 years, the population of the metropolis has very nearly trebled itself, and therefore, if the streets then existing were required to be of their then capacity to accommodate the population, it follows that a population of three times the number demands a greatly increased width of thoroughfare.

If population has increased so much, we find that public conveyances have increased in an equal ratio. The number of hackney-carriages were in 1801, 900; in 1811, 1,000; in 1821, 1,000; in 1831, 1,200; in 1841, 2,000; in 1851, 2,800; in 1857, 4,350.

In the first thirty years of the present century the increase of hackney-carriages was only 500, or 100 for each period of ten years, being at the rate of ten carriages in a year; while during the last six years the increase has been 1,550, or over 250 per annum. Since 1801 the increase has been such as to multiply the number nearly five times.

Before 1828 that most convenient vehicle the omnibus was unknown in London, being in that year imported from France by Mr. Shillibier; yet we now observe in the public prints that week by week one company has a revenue of half a million sterling per annum, and the estimated capital invested in such property is nearly 3,000,000*l.* the number of carriages under licence being somewhere about 3,000.

Trade and commerce have doubtless extended in a like manner, and the number of wagons, carts, and

horses must have increased proportionably. Therefore we believe we are justified in concluding that in 1857 we have ten times the number of vehicles traversing the streets that we had in 1801; and what has been done to widen the streets in proportion to this tremendous increase of traffic? Absolutely nothing!

But, it may be argued, if our population has increased as three to one, and our various conveyances as ten to one, our general metropolitan advantages have increased equal to the demand. In lodging accommodation this is undoubtedly correct, but not in our streets, giving room for arterial traffic. For although many cabs may never, or only occasionally, enter the crowded parts to which we have been referring, nearly all the omnibuses, and nine-tenths of the carts and waggons, must visit these localities; but, estimating the increase at half what it really is, or five times the number since 1801, we repeat, that unless the streets were then absurdly wide—an idea that has never for one instant been entertained—it is manifest that the main streets ought to have been nearly doubled in width.

I append tabular statements of the traffic over London-bridge taken very recently, and also the traffic of several parts of the City, taken under the superintendence of Mr. Haywood, the talented engineer to the Commissioners of Sewers of the City of London. These facts incontestably prove the necessity for street accommodation; and it will be seen that generally the pressure is the greatest where the streets are the narrowest, or where they have not been expanded for fifty years, and cannot be widened without an enormous expenditure.

The only reasonable manner in which the evil can be overcome, and the wants supplied, is to open other currents of traffic wherever they are needed and can be accomplished. This introduces us to the third division of our subject.

How can our thoroughfares be improved? The greatest improvements in modern times were the uniform widening of the streets,—the new streets opening with Leicester-square and New Oxford-street in the West-end, and within the City the construction of Moorgate-street and New Cannon-street; and above all, the building of London-bridge, with its several neighbouring alterations, not only within the City, but in the borough of Southwark, and the new Victoria-street, leading from Blackfriars-bridge to Clerkenwell.

In addition to the improvement, as already described, of Middle-row and Temple-bar, in the communications east and west, it is indispensably necessary something should be done to secure at least three great thoroughfares east and west, so that in the event of repairs being required in either, the other two might be always open. To meet this necessity we have on the north a direct line from Charing-cross to London-bridge, by way of the Strand, Fleet-street, Ludgate-hill, St. Paul's, and Cannon-street.

The centre line should be the continuation of Chapside, north of Paternoster-row, over Farringdon-street by a viaduct bearing slightly to the south of Lincoln's-inn-fields, and so on to meet the improvements in the west, on a line with Piccadilly.

The northern line should be New Oxford-street, a part of Holborn, diverging at the top of the hill, and by a viaduct crossing Victoria-street to Smithfield, passing in front of St. Bartholomew's Hospital, through Bartholomew's-cloze, across Aldersgate-street on the level, and so in a line with and into London-wall, joining the pavement for Hoxton traffic, Bishopsgate-street for Hackney or Shoreditch traffic, and proceeding down to the river-side by way of Houndsditch, the Minories, and Tower-hill, crossing the river by a steam-ferry: all these we show on the map now before you.

On the south side, the new street, resolved upon by the Metropolitan Board of Works, will be of immense convenience, although I think the line chosen by Mr. Pennethorne is infinitely preferable.

The cross traffic of the metropolis, that is, the traffic north and south, is nearly as important as that east and west. To relieve London-bridge of much of its heaviest traffic, I suggested to a committee of the House of Commons, some years ago, the propriety of establishing steam-ferries at all convenient points on the river below London-bridge, and I rejoice to find that a public company has recently been formed to carry out the project. If fairly tested and proved successful, of which I have no doubt, a new era will have commenced in regard to metropolitan thoroughfares.

Southwark-bridge, though badly constructed, its gradients being nearly as steep as Holborn-hill, should, nevertheless, be made free of toll, and Queen-street, between Cannon-street and Chapside, made of a width equal to that between Cannon-street and Thames-street.

St. Paul's-bridge, which I had the honour to sug-

gest, would, next to London-bridge, have the largest traffic across the river. Being on the high level, and forming the connecting link, in a straight line, between Middlesex on the one side, and Kent and Surrey on the other, it would not only relieve London-bridge, but take half the traffic that now passes over the old and rickety Blackfriars, which, springing from the low ground, is compelled to have a gradient very injurious. Its immediate demolition and reconstruction are alike demanded by the exigencies of the public service. As the new bridge would be lower in the heading by 4 or 5 feet, the incline would be greatly reduced, and still more so should the piers be of stone, and the span of iron girders.

Temple-bridge would introduce a most important feature in the re-arrangement. It would open up to the river the whole district of Lincoln's-inn-fields, and the squares north of Holborn in a direct line with the south, and thoroughly ventilate the wretched neighbourhood of Drury-lane.

Waterloo-bridge should be made free of toll, and Hungerford widened and strengthened to bear carriage-traffic.

At Westminster, whether we are to have one or two bridges, may leave to the decision of the active gentleman who presides over the department of works.

However necessary and indispensable the accomplishment of all these suggested improvements may be, and all of which are carefully described on the maps before you, they only introduce me to the main object of this paper, which was designed to refer chiefly, if not solely, to the embankments of the river Thames. Having at considerable length gone into the general question of improvements, I feel that I have cleared the way for the careful investigation and discussion of the plans proposed.

The details I shall explain *visà voce*, but you will observe from the plan before you that it combines a promenade, a carriage-way, and a railway, and should the Government approve, and the river commissioners agree, to the scheme, the entire work might be executed without costing the metropolis or the country a single farthing. The revenue from the railway, and the frontage obtained from the river, would not only compensate all persons having claims, but pay, it is presumed, a handsome dividend to the projectors. The merit of the scheme, as now laid down, is chiefly due to Mr. Charles Liddell, the eminent civil engineer, to whom I am personally indebted for the beautiful drawings now before us, all executed by Mr. Driver.

You will observe that the embankment commences at Westminster-bridge and terminates at the proposed St. Paul's-bridge. A railway you will observe starts from the Post-office, being in continuation of the Fleet Valley Railway from King's-cross: it follows the road on the embankment along the river, enters a tunnel at Whitehall, and proceeds westwards to Richmond and Brentford, so as to catch the omnibus traffic of these districts, which is very large, and would be exceedingly profitable.

The gardens of Whitehall and the Temple are not only retained but enlarged, while new gardens are to appear in front of Somerset House. Every street coming down to the river is improved, and a greater amount of wharf accommodation secured than now exists. As time has failed me in having the whole of this plan completed, I purpose, if acceptable to the council, to return to the subject next session, when the whole scheme will be complete, architectural embellishments introduced, and when it will be divested of the incumbrance of a general idea of metropolitan improvements.

Here, however, I must explain that the railway starting from the Post-office, as already described, has a branch uniting it with the South-Western on the one hand, while on the other it is connected with the South-Eastern. Could these junctions be effected, this important and often-discussed problem,—how can the railways on the north and on the south of London be effectually united?—would be solved, and that in the only way that is feasible, at a moderate expense. Taking advantage of the admirable street suggested by Mr. Pennethorne, Mr. Liddell has conceived the possibility of uniting the South-Western with the Brighton and South-Eastern Railways, in a manner that cannot be surpassed. If, instead of sanctioning all sorts of peddling schemes, the authorities would resolve to grapple boldly with what is pressing and imperative, this entire scheme for Thames embankment, railway junction, and a high level bridge at St. Paul's, would not only be commenced forthwith, but completed in five years. The drawing now exhibited shows the nature of the construction. On the lowest level, facing the river, are the wharfs and other matters connected with trade: on a higher level, but receding considerably, is a promenade for pedestrians: next comes the space over which, on iron columns, the railway is to be laid down: next comes the roadway for carriages, 40 feet

\* From paper read by Mr. Francis Bannock; see p. 243, ante.



wide, and then another footway or promenade in front of the houses that may be erected, the entire width for foot passengers, carriage way, and railway, being 100 feet.

Another line, it will be seen, might run along the side of the New-road, from St. Paul's to the Elephant and Castle, and branching off to the left, give railway convenience to the immense omnibus population of Camberwell, Kennington, Brixton, Clapham, and Streatham, uniting with the Crystal Palace Railway to the west end; give facility to many visitors, and considerably relieve London-bridge of much of its superabundant traffic. It will be observed further, that it is proposed to unite the Thames Embankment Railway with the Blackwall Railway, in a manner, as I believe altogether novel, the merit of which belongs entirely to Mr. Liddell.

You will see that the railway passes not only behind the houses facing the suggested new street, but absolutely passes through them; the back part of the first floor being surrendered for railway purposes. It may seem a daring scheme, but I am assured that it is perfectly practicable, and from the plan of construction proposed, it is believed that vibration could barely be detected.

The completion of the Railway and Thames Embankment scheme would open the whole of the river, from the centre of the City to the attractive west, to all who might desire to avail themselves of a rapid and regular mode of conveyance. The piers would be rendered more accessible, and so the boats would be more useful. The promenade and carriage-way direct from the Bank to Charing-cross would relieve the traffic of our present overladen streets, while the railway would convey from St. Paul's to Westminster, in a single hour, a larger number of persons than could now be conveyed in twelve hours by all the appliances in general use.

Before resuming my seat I think it is due to Mr. Liddell, as well as to myself, to say, that the plans now before you have been in course of preparation for months, and the paper I have just concluded was in the hands of the printer more than a week ago; that neither the one nor the other have in the slightest degree been modified or influenced by the report on the embankment of the Thames, which has recently been published by the Metropolitan Board of Works, a report which seems to me to be exceedingly vague and inconclusive. Perhaps it would be well to give them the advantage of the plans I have now had the pleasure of submitting to this assembly.

#### AN AVAILABLE PORTRAIT-GALLERY, LITERARY AND ARTISTIC.

MR. HERBERT WATKINS, of Regent-street, has formed a very interesting collection of portraits of men connected with literature, the drama, and the arts. It includes Charles Mackay, William Russell of the *Times*, J. R. Planché (capital likeness), George Grote, Alexander Dumas, Balfe, Albert Smith, Hepworth Dixon, Bayle Bernard, Chas. Dunc. Stirling Coyne, Kenny Meadows, George Lance, Lewis Pocock, John Deane, Madame Ristori, Miss Cushman, Charles Mathews, Wigan, Harley, Selby, Robson, Gordon Cumming, Owen Jones, and others. Some of our readers may like to know that these are obtainable at the cost of a few shillings each.

Mr. Watkin has further made portraits of Lord Palmerston (excellent), Lord Stanhope, Lord Lansdowne, Lord Brougham, and other distinguished men, to be published in Fry's "National Gallery of Photographic Portraits." The whole collection will be found in the gallery of the Art-Treasures Exhibition Building at Manchester.

#### THE VACANT AREA NEAR ST. PAUL'S CATHEDRAL.

METROPOLITAN BOARD OF WORKS.

On Friday, the 8th, a deputation from the Royal Institute of British Architects, including Mr. Tite, M.P.; Professor Donaldson, Messrs. Angell, Mocatta, Penrose, Mylne, Inman, C. C. Nelson, A. J. Baker (acting as honorary secretary), and others, presented a memorial respecting the preservation for the public use and enjoyment of the area recently cleared at the south-eastern angle of St. Paul's-churchyard.

After setting forth that the Institute are, by their charter, called upon to promote both the "domestic convenience of the citizens and the public improvement and embellishment of towns and cities," the memorial urged,—

"That the space in question, if left open, would afford the finest point of sight for viewing the Cathedral of St. Paul, the masterpiece of Sir Christopher Wren, and the noblest work of modern architecture in the kingdom.

"That to cover any portion of this space again with buildings would be a permanent source of regret, as it must shut out some portion of this magnificent view, favourable as well for the fine perspective composition which it offers as for the advantage of a southern aspect,

That if this occasion of securing the ground now vacant be lost, there is no chance that such another opportunity will occur of removing the reproach but too justly applied to this city by foreigners,—of encumbering our public edifices with buildings of a commercial character, and that in this case additional injury would arise to the cathedral from the colossal proportions of the buildings which would without doubt be reared upon the site.

That London is acknowledged to be deficient in grand public edifices, and is inferior in that respect to some of the continental towns, and especially to Paris, where, within the same space, numerous erections of importance in point of art and richness of decoration, have been undertaken by the Government. That even the cities of Washington and New York, in the United States, are now being embellished with sumptuous buildings, of a costly and ornamental character.

That it is, therefore, the more important that London should be rendered worthy the capital of a great people, and its monuments duly appreciated and shown to the greatest advantage, and that the Cathedral of St. Paul is confessedly second only to St. Peter's at Rome in size and importance.

That in an artistic point of view the improvement urged by your memorialists may be considered of a national character, and as regards convenience the metropolis at large, as well as the City, will derive the benefit of keeping the site free for the use of the public use, and that with reference to sanitary considerations it would be manifestly highly advantageous as improving the free circulation of air in a confined part of the City."

It further showed that by preserving the area, a great improvement could be made in the line of traffic from the north.

Mr. Deputy Harrison afterwards introduced a deputation from the Improvement Committee of the Corporation of London, on the same subject.

From remarks made by the members of the deputation, it appeared that it had been in contemplation by the corporation to build on one-fifth of the ground, and to leave the remainder unoccupied. There was a willingness to give up the whole plot if the Board would aid in the contribution. The value of the whole of the area would be 75,000*l*.

There was much debating as to whom the matter should be referred to, but it was very favourably received, and was ultimately referred to the Works Committee, and not to the whole board, by a large majority, namely, 25 to 3.

#### REPORT OF THE COUNCIL OF ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Report presented to the Annual Meeting, held May 4th, was more than usually interesting. We give the following passages from it:—

"An session succeeds to session, it becomes the grateful task of the council to report the efforts made to consolidate the position of the Institute, and to extend its sphere of usefulness. At no period in the history of the profession this country has stood more in need of some central point, around which all who would uphold its rights, its dignity, and its responsibilities, might rally in the confident assurance of receiving sympathy, support, and counsel adequate to the occasion. It is to be sincerely hoped, that a conviction to this effect may spread far and wide, and that the Institute, supported by the unanimous voice of all respectable architects, may be enabled to stem the unfortunate popular current of needless competition, which has set in, and which, if unchecked or unregulated, must, inevitably, reduce our fine art to a trade, and so bring down the character of the profession, as to shake public confidence in the value of the assistance it can render, and in the rigid probity which should mark every business transaction with which it is connected.

"If the accession of members to the Institute is not absolutely commensurate with the almost too rapid growth of the profession, it is at least satisfactory to be enabled to state, that the average of past sessions has been more than sustained, and that since the last annual meeting, the Institute has received the addition of seven Fellows, ten Associates, four contributing visitors, two honorary members, and three honorary and corresponding members."

"The increase in the number of contributing visitors is a point to which the council would particularly invite attention. The importance of the varied information which may be contributed to the ordinary meetings by gentlemen whose interests or avocations connect them with the fine arts generally, is so great, that it is earnestly to be hoped that the number of contributing visitors may receive an accession of great strength. To effect this desirable end, members are invited to communicate to such of their friends as they may consider eligible, the existence of this class in the Institute. It is believed that the fact only requires to be generally known to insure the co-operation and support of many persons of great intelligence and energy, who at present conceive themselves debarred from associating with professional architects.

"The public generally, and the members of the profession, have seen with pleasure the completion of the west end of Somerset House, after the designs of our Fellow, Mr. Pennethorne. His professional brethren, availing themselves of the opportunity to express to him their congratulations upon his successful manner in which he has carried on this task, with due justice to the genius of the original architect, Sir W. Chambers, and anxious to offer him a mark of their cordial respect for his character as an architect and surveyor, and for his bearing as a gentleman, have, with the permission of the council of the Art-Union of London, had an impression struck in gold of a medal, recently engraved by Mr. B. Wyon, for that body bearing the profile of Sir W. Chambers on the obverse, and on the reverse a representation of the Strand part of Somerset House. At the particular request of the originators of this testimonial, the medal will be presented to Mr. Pennethorne."

"The Institute now consists of 141 Fellows, 134 Associates, 15 Honorary Fellows, 18 Honorary Members, 20 Honorary and Corresponding Members, and 11 Contributing Visitors.

thorne by the Earl de Grey, president, on the same evening as the medals of the Institute.

Soon after the last annual meeting, the council were led to consider, that a friendly co-operation with the Architectural Association of London, the maintenance of which appeared at that time to be somewhat precarious, or a more or less complete fusion of that body with this Institute, might revive the energetic desire which the Association had previously exhibited for self-improvement, and induce all the younger members of the profession to take part and interest in exercises, such as those which the Association appeared on the point of giving up, and which, so far as the practice of design is concerned, had also been for many years carried on by students of this Institute.

[The failure of the proposition was then referred to, and regret expressed. Reference was afterwards made to the difference between the architect of the New Palace at Westminster and the Lords of the Treasury, the result of which is known to our readers.]

The council warmly sympathise in this firm but respectful protest, and fully concur in the justness of the statement made by Sir Charles Barry in his letter to that effect, accompanying a copy of the protest, that 'both with respect to the settlement and the circumstances which led to it, he has done all in his power to vindicate and uphold the dignity and rights of the profession.'

The parsimonious example set by her Majesty's Government in this instance, is one which the council regard as especially injurious by furnishing a precedent, only too likely to be seized upon by bodies corporate, such as those from which advertisements frequently emanate, inviting architects to compete upon terms little less degrading to the profession than dishonourable to those from whom the conditions proceed. It is to be remembered that the only remedy for the evil lies with architects themselves. If the respectable members of the profession will only abstain from answering any such appeals, those by whom they are habitually put forward will soon find that they must to their interest to consult in the outset an experienced practitioner of good and well-known reputation, than to allow themselves to be misled by deceptive drawings and estimates, calculated only to captivate the eye and disarm the sober judgment.

The council have very lately had their attention drawn to unworthy inducements offered by unscrupulous tradesmen to those architects by whom clients can be secured to make purchases of certain articles used in buildings. Against such offers the council indignantly protest, and if it shall appear that any member of the Institute, forgetful of his written pledge he gave to the contrary on joining the body, shall have received or accepted 'any pecuniary consideration or emolument from any builder or other tradesman whose works he may be engaged to superintend, they will forthwith take the proper measures to ensure his expulsion, in accordance with Bye-law, No. 15, sec. III.

It must be apparent how great would be the temptation for architects to lend themselves to such dishonest practices, were the example set by her Majesty's Government of lowering the proper and legitimate rate of professional remuneration to be taken as a precedent. So long as competitions for works involving but slight architectural attainments continue generally unlimited, it must be apparent that openings must exist for the admission to practice of men entirely unworthy of confidence; and however possible it may be for the Institute to watch over the professional conduct of the men of good character of which it is proud to believe itself composed, it is altogether impracticable with regard to those without its pale. Under existing circumstances, it is alone by association and watchfulness on the part of the profession, that such disgraceful practices can be absolutely suppressed.

Painful as it is to allude to such matters, the council have felt that it would be a shrinking from their obvious duty if they were to suppress a direct reference and a clear expression of their convictions with respect to them. \* \* \* Attention having been called by one of our Associates, Mr. Witley, who has spent many years in the East, to the desirability of architects being appointed British consuls in certain cities where remains of ancient art are supposed to exist, the council addressed a memorial to her Majesty's Minister for Foreign Affairs on the subject, instancing the laudable proceedings of the French Government in similar appointments, by which means many valuable vestiges of antiquity have been brought to light and preserved. The official acknowledgment of the memorial promised, in the usual terms, that the request should be duly noted, but regretted that arrangements had been already made for sending up the consulates mentioned. The council can therefore only hope that in some, if not in all the cities in which they desired to see men placed who might be as anxious to further the cause of civilization and letters for their country as the French savans, similarly located, are for theirs, such nominations may have been made as will conduce to the national honour, and to the best interests of art.

[The maintenance of the vacant space adjoining the south-east angle of St. Paul's Churchyard was urged; and afterwards allusion made to some recent competitions.]

A novel mode of proceeding was adopted in the competition for the Liverpool Free Library and Museum; the Committee, selecting, in the first instance, certain sketch designs, the authors of which were invited to send in more detailed drawings. The Council, considering that the number of competitors—twenty—to be so selected, was excessive, communicated their opinion to the Committee. It subsequently appeared that sixteen sketch designs were selected from among the one hundred and fifteen sent in. The result of this competition is well known; the author of the selected design, not being employed to superintend the erection of the building, although his design has been adopted in a modified form by another hand. It is therefore obvious that, notwithstanding the best intentions, ostensibly, at the commencement, this competition has not suffered materially from other eminently unsatisfactory ones, which have either preceded it or been contemporaneous with it.

Another competition, upon the issue of which the Council took occasion to congratulate the body of the

\* However hard it may be to Sir Charles Barry, that an exception to the ordinary practice of her Majesty's Government may have been made in his case, it may be gratifying to the profession generally to observe, that in the conditions issued for the competition for the "New Government Offices," it is declared that, "if the architect to whom a premium may be awarded in respect of designs Nos. two and three, or either of them, shall be employed to superintend the execution of the work, he will not be entitled to receive such premium, but shall be paid a commission, at the rate of 6 per cent, upon the outlay."



Institute in their Report last year, assumes at present a much less favourable aspect than it did at that period. Stimulated by a general outcry against the traditional defects of arrangement which appeared to preside over the plans and constructions of barracks, both for infantry and cavalry, her Majesty's Government appealed to civil architects to furnish them with more enlightened ideas on the subject, holding out as an inducement very small money premiums, but an unconditional pledge that the two best designs should be carried out under the superintendence of their authors. Animated by this pledge, which offered at once honour and profit, the profession responded at a great expenditure, both of time and money, to the appeal made to them in an hour of need by her Majesty's Government, in whose unserved promises they placed implicit reliance. The designs were publicly exhibited, so that all interested might derive the full benefit of the valuable suggestions offered by them, but up to the present date no symptom has manifested itself of her Majesty's Government redeeming the pledge into which they voluntarily entered. The authors of the designs adjudged to be the best by the commission appointed to consider the subject were (as was stated last year) all members of this Institute; and the council sincerely regret that, while the principles of arrangement suggested by them should by public exhibition have become the property of the community, no steps should have been taken to adequately reward these able men, by affording them an opportunity of realising the principles they had set forth before their novelty should have worn off.

A case of disputed right to retain designs forwarded in competition having been referred to the council, was speedily decided in accordance with the specific conditions under which the drawings had been sent in. Where such conditions are not stated in the instructions, competitors would do well to protect their own interests by inserting them in the papers they may forward in explanation of their designs, and so reserve to themselves, under any circumstances, the right of property in their drawings.

#### CLOCK FACES.

AN inquiry having been made in your last number as to the best material for a clock face in an exposed position, and occasionally washed with the salt spray of the sea, I would strongly recommend a slate slab, having its exposed side painted with several coats of colour mixed with japaner's gold size, with just sufficient turpentine added to make it work easily, and dry without a gloss; the figures, &c., should be painted with colour mixed in the same way, without any oil, or being afterwards varnished.

I painted an ornamental clock face upon slate with this colour, which is now as hard as the slate itself, and looks as fresh as when first fixed, although it has been in an exposed position more than eight years.

I feel confident that sea spray would have no injurious effect upon it, as I have used the same material upon an old church wall, where a moisture, containing a considerable quantity of salt, is constantly oozing out, but does not destroy the painting.

H. B. HAGREEN.

#### COLOGNE CATHEDRAL.

WILL you allow me to say a few words in reference to Mr. Pictou's remarks on Cologne Cathedral? I find that he thinks that "few would be disposed to doubt that if Cologne Cathedral were completed, it would be the finest Gothic building in the world." Now, when I see this kind of expression of opinion in a guide-book, I am content simply to protest to myself against its truth; but when an architect (as I presume Mr. Pictou to be) gives this as the result of his examination of many churches in France and Germany, I fear, lest any should be disposed to acquiesce in what he says, as said, by one entitled to speak with authority, and I venture, therefore, to say a few words in arrest of judgment. Cologne, no doubt, has had the benefit of an architect who could see the beauty of the French system of planning, and who had the boldness to follow it in preference to the ordinary German plans; but the evidence of a French origin stops here, and in every detail throughout the building there is most unmistakable evidence of a German, and not of a French artist. The consequence is, that the completed portion of Cologne is inferior in a very marked manner to the corresponding portion of Amiens, and many other French churches; and it seems to me that the works which are being carried out for its completion, serve to bring out this inferiority more and more clearly. In these days, when all of us rightly think it our duty to study ancient examples of our art abroad, as well as at home, it is doubly necessary that we should discriminate carefully between the good and the bad schools of Mediaeval architecture; and, much as I rejoice in the recollection of my visits to churches in all parts of Germany, I am yet bold enough to say, that there was no part of Europe during the Middle Ages which achieved so little of a really noble and thoroughly artistic character as

that country. Every one who has studied French buildings of the Middle Ages with the same care must have seen how far superior they are in almost every point of view. Their ground plans were so superior that the architect of Cologne rightly neglected his national traditions, and copied them. Their sculptors were among the greatest the world has ever seen, whilst those of the German churches were singularly deficient in grandeur or simplicity of purpose, and have left nothing fit to be compared with any of the great French works. In this respect, indeed, it would be a *reductio ad absurdum* to compare Amiens and Cologne. In the treatment of window tracery and of groining, the same inferiority of the Germans is always evident. I have long felt that this excessive admiration of Cologne and of other German works of the same date might prove most damaging to the revival of Pointed architecture among ourselves, and year by year the impression becomes stronger on my mind. It seems to me that we run a very great risk in allowing ourselves to be captivated by the fantastic traceries of German windows, as we so often do, and by the excessive display of personal conceit and ingenuity of device so common in Germany, and so destructive of noble art. At the same time, if we neglect the teaching of those great men, the French architects of the twelfth and thirteenth centuries, we most unquestionably neglect the teaching of men who raised our art to a point of excellence to which no other school ever attained. I would never ask men to cease to admire, and reverently study, Westminster or Ely, Wells or Lincoln, or any of our countless relics of early art in this country; but I would, at the same time, most earnestly advocate the duty of studying Amiens, Rouen, Chartres, Laon, and the other great churches of France, not less carefully nor less faithfully; and when they have done this, I am confident that they will never allow themselves to entertain for an instant the question of the relative merit of Amiens and Cologne;—the one the shrine of sculpture and architecture most exquisitely combined; the other the largest and grandest example of the cold ingenuity of a scientific architect.

GEORGE EDMUND STREET.

#### RUSTIC PLAGUE-SPOTS.

HAVING this morning heard of a sad case of destitution in a village called Liddington, three miles from Swindon, I swallowed a hasty meal, and betook myself to the spot. The only sleeping-room of the miserable hovel is 13 feet long by 8 feet wide, and in such a place, huddled together, sleep father, mother, and ten children, two of them born on the 2nd inst. within three hours of the toll-woman's return from laborious field-work.

Three other children, aged eighteen, fifteen, and fourteen, are provided for away from home.

The nation looks for much of valuable reform in the existing Parliament, and I trust that insertion of this in your world-wide columns will help to stir up philanthropists to prevent recurrence of such scenes as are here imperfectly sketched. The hovel is the labourer's own, built upon the waste land, in a most abominable swampy lane, the only water-supply being from a filthy pond in the rear of the hovel, which pond does also duty as a cesspool for the scummings of the lane ditch, into which all the privies in the lane are arranged to empty. It is felony to attempt suicide: so would I make it, henceforth, felony to build a dwelling so unfit for human abode. Present possessors I would not deprive of their homes without compensation, but I would render it imperative that the fitness of a locality should be certified ere future habitations should be sanctioned; and that rent should not be recoverable in any court without production of such certificate.

C. A. WHEELER.

#### CONSTRUCTION OF FLUES.

A good illustration of the danger in which many houses are from bad contrivance in the flues, was afforded a few days ago, at No. 7, John-street, Adelphi, where a fire suddenly broke out in a locked-up room in one of the basement stories, and was only discovered by accident after many valuable books, a piano, and other property with which the room was filled, had been either wholly consumed, or greatly injured. An entrance being effected by the firemen, through the window, the fire was extinguished, when it was found that it had commenced in a fireplace, against which the chief of the articles consumed had been placed. The explanation of the origin of the fire was, that the flue communicated with one of another fireplace, and that burning soot from the one flue had fallen down the other. Indeed, the discovery was made by the noise that was heard in the flue, by a person in a room in the upper part of the house. Had the fire commenced in the night time, the two houses, Nos. 6 and 7, which are in communication,

would, doubtless, have been destroyed, and probably the whole block of buildings between John-street and the terrace, would have shared the same fate. After this, the houses in the Adelphi may hardly be deemed so safe as their construction in some respects would lead persons to suppose. A vast sum was expended in the foundations, vaults, and basements, as well as in the walls and staircases, and other parts of the superstructure, but many of the details of construction and convenience are very defective.

#### ACTION AGAINST AN ARCHITECT.

THE EXPENSES OF ATTEMPTING TO REMOVE DRY ROT.

THIS was an action brought by Mr. F. Mulholland against Mr. E. Welby Pugin, to recover 8*l.* 11*s.* 3*d.* the balance alleged to be due to plaintiff, for certain chemicals in combination, called "The Anti-Dry Rot Composition," the manufacture of which has been patented by the plaintiff. The case was tried in the Bloomsbury County Court, and it appeared in evidence that the disease known as dry rot had got into some flooring at Eilton Grange, near Rugby, and that the defendant had instructions to use his endeavours to remove it. The plaintiff, who was then in his service at a salary, said he knew how to manufacture a composition which would effect its removal, and he was accordingly instructed by the defendant to obtain the necessary chemicals. The plaintiff, thereupon, ordered goods to the amount of 18*l.* 11*s.* 3*d.* including 16*s.* for personal expenses. The first bill amounted to 10*l.* which the defendant paid at once, but when the second general bill for the 18*l.* 11*s.* 3*d.* was given him, he asked the plaintiff for a detailed account, which, on his declining to supply, the defendant declined to pay. The plaintiff said the object of the defendant was to ascertain the elements and proportions of the composition. This was denied by the defendant, who said his only object was to have a proper detailed account to show his client, Capt. Hibbert, and he had only that morning obtained it from the persons who had supplied the plaintiff with the chemicals in question.

His Honour allowed the 16*s.* for personal trouble and expense, as the plaintiff was at that time in the defendant's employment. That reduced the claim to 7*l.* 11*s.* 3*d.* which defendant at once paid. The plaintiff's costs of the whole proceedings, amounting to 1*l.* 10*s.* were also disallowed, on the ground that he had declined to furnish a detailed account before the action was brought.

#### THE CANYNGES SOCIETY AND ST. MARY REDCLIFF, BRISTOL.

THE tenth anniversary of the Canynges Society, at Bristol, for the restoration of the church of St. Mary Redcliff, was celebrated on Thursday, the 30th ult. under the presidency of Dr. Symonds.

At the business meeting, held after hearing sermon in the church, the report of the committee for 1856 was read. Dedications amounting to 606*l.* odd had been received, besides subscriptions amounting to 178*l.* 7*s.* Since last meeting, 750*l.* had been contributed towards the restoration of the church. The donations included five of 100*l.* each, promised on condition that 2,000*l.* should be otherwise raised, but since paid without awaiting the fulfilment of the condition, on account of the dangerous state of the fabric, particularly the south side of the clerestory of the nave: two of the windows were now in progress, but more funds were much wanted, while the committee regretted to note a diminution of the annual subscriptions. Reports from the Commercial and the Ladies' Auxiliary Associations, the former announcing that 400*l.* had been collected, and the latter 250*l.*; this latter sum being for the restoration of the Lady Chapel, were then read.

Mr. J. S. Harford addressed the meeting, while moving its thanks to Mr. Proctor, as chairman of the restoration committee. He alluded to a visit made to the church by the Commendatore Canins. The Commendatore, said Mr. Harford, had some prejudices against Gothic architecture, and he had heard him call it barbaric, a name which sounded harsh on the ear of one attached to that beautiful style of structure. On entering St. Mary Redcliff he stopped, and after casting his eyes around said, "This is the most beautiful building I have seen in England." He had been staying with the Duke of Northumberland, and had seen Edinburgh, Lincoln, York, and some of the most distinguished cathedral churches: he mentioned, in particular, York Minster.

Mr. Proctor was also present, and addressed the meeting, especially as to the dilapidation of the edifice: he only wished some of them could be persuaded to ascend the leads and look at the buttresses and the mullions of the windows: they were positively dangerous, and yet a few hundred pounds now would do much to obviate what thousands shortly would be required to do.

A lecture "On the Principles of Beauty" was afterwards delivered by the president, Dr. Symonds.

After a few preliminary observations on the Fine Arts, the lecturer entered upon his immediate subject. He said that his purpose was to endeavour to simplify the theory of beauty, and to bring its principles within the general laws of sensation and thought. He considered that beauty might be referred to four principal sources—1st. Sensation—2nd. Thought and Reflection—3rd. Moral Sentiments—4th. Associated Emotions. In the treatment of the first of these, he remarked that simple visual pleasure was the

\* At the next meeting, to be held on Monday evening, the 18th inst., the Earl de Grey, president, will present the Royal and other Medals. On this occasion, also, the president will present to Mr. Penethorne the Chambers Gold Medal, as a mark of respect from his professional brethren. Mr. Digby Wyatt will offer a few observations on the Sacred Grotto (Sagra Speco) of St. Benedict, at Subiaco, and its Monastic Institutions.—Earl de Grey, as president, will hold his annual *conferenza* on the 28th inst.



germ of beauty—namely, that pleasure which consists of a mere agreeable impression on the nerve of sight. He then showed how a number of co-existent or closely-successive impressions create pleasure on the several principles of similarity, variety, or contrast, and continuity. The effects of simple lines, both straight and curved, were briefly considered, and then symmetrical and harmonious combinations of forms were entered into at some length. Dr. Symonds gave an exposition of Mr. Hay's system of harmony of proportions, and expressed, in strong terms, his admiration of the originality of conception, as well as of the persevering industry which Mr. Hay had manifested in his investigation of this interesting subject, the results of which investigation had been embodied in several books by Mr. Hay.

Having expounded Mr. Hay's views, Dr. Symonds proceeded to give a theory of his own as to the explanation of the cause of the pleasure which resulted from the contemplation of forms which might be analysed into angles bearing these definite proportions. The leading idea was that as those movements of the body which are performed in conformity to definite proportions of time and space, as in marching, or in dancing to music, are productive of satisfaction and enjoyment, so those delicate movements of the eyes which, if the eyes are carried over spaces of harmonious proportions, must also be regular and rhythmic, will be attended with a feeling of pleasure, which feeling constitutes a large part of the beauty in question.

### Miscellanea.

**ARCHITECTURAL PUBLICATION SOCIETY.**—The annual general meeting of the subscribers will be held at the Institute of Architects, on Wednesday afternoon, the 20th of May, to receive the report of the committee on the general affairs of the society, &c. when, it is to be hoped, there will be a good attendance, and that arrangements may be made to ensure the rapid progress of the "Dictionary."

**MANCHESTER EXHIBITION.**—In connection with the Exhibition, Messrs. Day and Son are about to publish a chromo-lithographic work, "The Art Treasures of the United Kingdom." The series will embrace—Sculpture—The Ceramic—Metallic—Vitaceous—Textile—and other Decorative Arts; and each division of the work will be accompanied by historical and descriptive essays, and the work will be produced under the direction of Mr. J. B. Waring. Messrs. Colnaghi, too, announces a work, entitled, "Gems of the Art Treasures Exhibition," from photographs by Messrs. Caldesi and Montecchi, from the most interesting specimens of art contained in the Art Treasures Exhibition. It will be divided into two sections, one embracing the works of the old masters, in painting, sculpture, engraving, and the most interesting works in armour, glass, porcelain, carving, while the other section will be taken from the works, in oil and water colours, of the modern school, modern sculpture and carving, and from the collection of historic portraits.

**CHELTEMHAM SCHOOL OF ART.**—Last week a *conversazione*, in connection with the above school, was held in the rooms of the Literary and Philosophical Institution, which were decorated with casts, evergreens, and plants in pots; the drawings and paintings executed by the pupils being also arranged around the large room, for the inspection of the public and the government inspector, who was making his annual visit to the school. The evening's entertainments included a "Lecture on Gothic Architecture in connection with the History of the Parish Church," delivered by Mr. J. W. Huggall, the hon. secretary of the school, the chair being taken by Mr. W. M. Tait. This reunion marks the commencement of the fifth year of the school's operations, carried on under the present master, Mr. James P. Knight, and an influential committee.

**LIVERPOOL ARCHITECTURAL SOCIETY.**—At the closing meeting of the session, on Wednesday evening the 6th, Mr. Huggins presiding, the honorary secretary, Mr. Weightman, read the report of the society for the session 1856-57, from which it appears that there are 4 life members, 6 honorary, 25 professional, and 124 associate members—in all, 178. The following were elected the officers and committee for the ensuing year:—President, Mr. S. Huggins; Vice-presidents, the Mayor of Liverpool and the High Sheriff, *ex officio*; J. M. Hay, and G. Chantrell; hon. treasurer, T. Horner; hon. librarian and curator, G. Goodall; hon. secretaries, W. H. Weightman and William Stubbs; Council, H. Cox, Frank Howard, J. A. Pictou, J. Boulton, and John Hay. The treasurer's report was next read, from which it appeared that the income of the society during the year was 1367. 7s. 7d., and the expenditure 1322. 14s. 5d. The president then delivered a very able closing address.

**INSTITUTION OF MECHANICAL ENGINEERS, BIRMINGHAM.**—The general meeting of the members of this institution was held on the 29th ult. at their house, in Newhall-street, Birmingham, when some new members were elected, and an abstract of an addressed paper "On the Application of Steam Power to Agricultural Purposes," by Mr. W. Waller, of Lincoln, was read; as also a paper "on Steam Cultivation," by Mr. John Fowler, of London; and a "Description of Improved Machinery for Turning and Shaping Wood," by Mr. J. W. Wilson of Banbury. This machinery is being employed for the manufacture, on a large scale, of long rounded poles, such as broomstalls, &c. of which as many as one per minute are turned out. The wood to be rounded is fed through grooved rollers to a couple of revolving cutters, carried on a face-plate rotating at a high speed, by which it is rounded, and passes out through a circular die or hole in the plate. The revolving cutters are made of such a shape as to last for a long time without sharpening.

**SCOTTISH ART MANUFACTURE ASSOCIATION.**—The prize of twenty guineas, offered by this association for the best design and model of a useful and ornamental article of art manufacture, for general distribution among the subscribers, has been awarded to Messrs. Les Frères Wills, of London; and the committee of management have adjudged an extra prize of five pounds to Mr. James Annan, junior, of Edinburgh, the model given in by him having been much approved of. The models offered for competition by Mr. George Brookes, of Dalkeith, were considered entitled to honourable mention.

**INAUGURATION OF THE QUEEN'S STATUE IN PEEL PARK, SALFORD.**—The ceremony of unveiling the statue of her Majesty, erected in commemoration of the Queen's visit to Salford in 1851, was performed on the 6th inst. by Prince Albert, in the presence of the mayor and corporation of the borough, and many thousands of spectators. The statue is erected immediately in front of the new library and museum facing the road, and near the entrance of the park. The pedestal is of granite, and the Queen is represented in her state robes, and with a small coronet on the head. Mr. Noble was the sculptor. The Prince visited the Museum and Local Art-Exhibition at the same time, and was received there by Mr. Hammersley and a deputation of the committee of contributing artists.

**PURIFICATION OF RIVERS.**—Mr. John Buck, M.R.C.S. delivered a lecture on Thursday in last week, in the Manchester Town-hall, on the method of cleansing the river at Leicester, employed by Mr. Thomas Wicketed, C.E. The lecture was given under the auspices of the Manchester and Salford Sanitary Association. The chairman, Alderman Bancroft, said he had attended as one of a deputation from the Manchester council to Leicester respecting the cleansing of the river, of which a report had been presented to the general purposes committee. He must confess he saw difficulties in the way of adopting the principle employed successfully at Leicester to the three Manchester rivers, two of which had streams of eighteen and twelve million gallons per day. The Rev. Canon Richson, as chairman of the association, introduced the lecturer, and remarked that the experiment tried at Knott Mill had proved its practicability. He hoped the result of the lecture would be a further step in the same direction. Mr. Buck then explained Mr. Thomas Wicketed's system of sewage and deodorising by means of diagrams, and pointed attention to the happy sanitary effect the drainage and deodorization had had in the town. In the discussion which followed, Mr. Richardson, sanitary inspector, said he thought the sum required to purify their rivers would be two or three hundred thousand pounds, and he doubted if it could be done at all unless adjoining towns cleansed the rivers which flowed into the Manchester streams. There were also the rights of water-way, &c. to be contended with. Canon Richson said that the association, without pledging themselves to the scheme described by Mr. Buck as the best, merely wished to show that the thing was feasible, and that there was ground for asking the help of the authorities in the matter. Mr. Buck added that much money had necessarily been spent in Leicester in trying the plan, which would be saved elsewhere.

**ST. MARLYNONE CEMETERY JOB.**—Can you enlighten me and many fellow-sufferers as to the likelihood of any satisfaction being got out of the parties who mismanaged this affair, or if the question is to be considered as buried with our money; and if the same persons will offer to oblige us with their services again in the proposed new job as to a school for the pauper children.—A (FIRST) RATE PAYER.

**THE ACADEMY DRAWINGS.**—In your report on the architectural drawings of the Royal Academy, you say "Town Hall at Cork, Ireland." That is an error in the catalogue; it should be "A design for the proposed Town Hall, Cork, Ireland." I hope you will correct this in your next, as it may lead to error.

JOHN P. JONES.

**POLICE TRESPASS.**—Under Buildings Act.—In the Vice-Chancellors' Courts, before Sir R. T. Kindersley on Thursday in last week, a motion for an injunction against the Commissioners of Police was brought on. The question was, whether under the Metropolitan Buildings Act (18th and 19th Vic., c. 122, ss. 69 and 73), the Police Commissioners had a right to enter upon the premises of the plaintiff, Mr. Addison, living at No. 6, Delahay-street, for the purpose of repairing or underpinning the wall of his neighbour Mr. Henry Richardson's house, which wall was admitted to be in a dangerous or insecure state, and had been so represented by the plaintiff himself to the commissioners, who had acted under a magistrate's order, giving them power to enter, and repair the wall. After some discussion the Vice-Chancellor gave the following judgment:—I think this is a very plain case. The injunction must go. The plaintiff has a right to be protected from any person coming on his premises. It appears to me that the language of the Act of Parliament is plain. A justice of the peace makes an order upon the party to "take down or otherwise secure the building to the satisfaction of the surveyor." If that is not done, the commissioners are not ordered to do, but they may do what they think requisite. They may take down, repair, or otherwise secure: that is their authority. I think that they were bound to exercise that authority if there were really danger. But does that justify them in coming upon the land of another to do it? I think not. I am not meaning to say that there might not be a case of such extreme pressure and necessity as that this Court would not interfere to prevent them. I do not see here the smallest symptom of danger to the public. The wall is already shored up by the plaintiff himself. It is not an external wall, producing a possibility of danger to passengers. Therefore, it appears to me that supposing a very extreme case might justify trespassing on another man's land, that case does not exist here. As to that there is no contradiction in the affidavits. The injunction must be until answer or further order.

**GREAT BLAST AT HOLYHEAD.**—Some of our readers who may be going to Manchester and others will probably be glad to know, that on the 21st inst. a grand blasting operation, in which 18,000 lbs. of powder will be used, under the superintendence of Messrs. Rigby, the contractors, is to take place at the Holyhead Harbour Work Quarries.

**ENGLISH AND IRISH MAGNETIC TELEGRAPH COMPANY.**—The annual general meeting of the shareholders in this company was held in the Clarendon-rooms, on Tuesday in last week, Mr. J. C. Ewart, M.P. in the chair. The report called attention to the steady improvement in the receipts, not only during the past year, but from the commencement of the company's operations; and to the fact that, although the business transacted by the company during the last half-year of 1856 exceeded that of the first half-year by 1,200, the working expenses were less by 400, notwithstanding a large additional expenditure incurred in the repair of lines, injured by severe storms. The directors had carried out the amalgamation between the Magnetic and British Telegraph systems, and had every reason to be satisfied with the results of the union. The chairman mentioned that the company were receiving nearly 1500, a week from the agent of the Submarine Telegraph Company, which had never been the case heretofore.

**WORKING DRAINAGE.**—Messrs. Fend and Hamill complain that in our account of "Working Water-Tower and Engine-House" they are not mentioned. If they look again they will find they are in error. They say further—"As you have broached the subject of the drainage of Worthing, will you allow us to inform you of a peculiarity in the mode of carrying out the house-drainage of that town. The resident engineer to the Local Board of Health, at the same time that he is acting in this capacity, is contracting for house-drainage, and executing it under his own direction, or under no direction at all; in other words, a part of the town is being drained by a contractor without any engineer to plan the work, or to control its execution. This is not very likely to ensure to Worthing a sound drainage, for the private or house drainage is as much a part of any system pursued in draining a town as is the main or public drainage, and the imperfect construction of either will be sure to prevent the efficient action of the whole."

**BATTERSEA PARK.**—Great exertions are being made to throw this park open to the public by August. The excavations for the ornamental water are completed, and the walks are nearly all ready.

**THE GRAIN OF STONE.**—Can any of your correspondents tell me of any composition which could be applied to stone columns with a view to bring out the grain and veins of the stone? I have four sandstone columns in a hall, which are of very varied colours, and which would be very handsome if stained and polished. Could they be afterwards varnished, or should they be polished? and with what?

QUERIST.

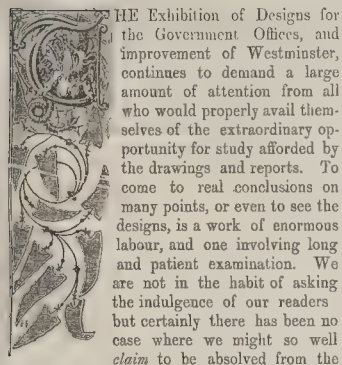






# The Builder.

VOL. XV.—No. 746.



THE Exhibition of Designs for the Government Offices, and improvement of Westminster, continues to demand a large amount of attention from all who would properly avail themselves of the extraordinary opportunity for study afforded by the drawings and reports. To come to real conclusions on many points, or even to see the designs, is a work of enormous labour, and one involving long and patient examination. We are not in the habit of asking the indulgence of our readers but certainly there has been no case where we might so well

claim to be absolved from the effort to give at once, particulars—such as could be of the slightest use—after the limited opportunities that we have had to the present moment. The judges will be better than we are in professional subjects, if they do their duty in the time that we are taking about ours.

The majority of the journals have abandoned the subject in sheer despair of it,—sometimes having had to catch at any numbers of designs, so as to fill in any way paper and type. Never before have we had the misfortune to see so many false descriptions—such confusion of terms, and what is worse, of things and ideas; and so generally loose a grasp of the matter in hand. At this rate of progress, the teachers are getting behind the knowledge of the public. For the present, indeed, we fear there is an influence exerted even over opinions of architects, tending to a disproportionate estimate of the effort and the object in such a case as this, and of the positive time and consideration needed for any judgment of the result. There is a limit to what can be done, even in these wonderful days. We do not expect a man to read through Homer in a few minutes or an ordinary person to master a language, as Sir John Bowring is said to do, before breakfast. From the devotion of centuries to a single edifice, architectural practice has been lately running to the opposite extreme,—and by omitting much of that consideration and thought which are preparatory and requisite to the intended result, and are conducive, indeed, to the facile realization of it. One of the journals—referring, we suppose, to our remarks on the inadequate time allowed and other points in the announcement of the competition—speaks of the course as “successful, notwithstanding the opposition of many architects, and the critics of the building press, who dared to restrict the competition by numerous conditions” (though our complaint was rather of restrictions and conditions really imposed by others), “and who declared the time given to draw the plans was insufficient. The fallacy of those anticipations is shown by the fact that there are no less than 219 competitors,” &c. &c. Now, observe the notion which the writer has as to the production of what he calls “plans,” which he evidently thinks require only a certain effort of muscle, like drawing a cheque, or drawing a cork. We pass over the mention which has been made of “all styles of architecture”—Doric, Ionic, Corinthian, composite, Saxon, Norman, Gothic and Modern Gothic,—again, of the “Doric and Ionic styles,” of “the Italian order,” and “the Anglo-Saxon style.” We must leave the influential organs of opinion

to speak in their own way, and get on at their own rate. We know the country, perhaps, and are not such daring riders.

We must give the bulk of this article to some general observations. Begging again to refer—less in justice to ourselves than to the profession—to remarks we have made respecting the anticipated result of the competition, we find it necessary to say, we did not predict that few designs would be sent in. We said the reverse,—that there would be more drawings than the Hall would well contain; and so it has turned out. It has also been proved that our frequent assertions, as to the real ability and taste which might be found in the profession, were abundantly warranted by the facts; and that the animadversions so hastily made upon “our architects,” from time to time, by the leading journals, should have been directed elsewhere. We did say that the competition itself, from the terms of its announcement, would be a failure as to the main objects. Great praise may be due to the Government, and the Office of Works, for the desire properly to reward competitors: those who contribute so largely of their time and money should have some better chance of compensation than is in ordinary cases allowed them. But, because designs are received, and taste and talent are displayed, it does not follow that the object has been answered, and that the public money has been devoted to premiums in the best manner for the country, or even for the profession. At Peel Castle in the Isle of Man, some five and twenty years ago, the old bombardier who had charge of the ruins used to conduct visitors to a certain excavation in the ground, whereto he would ask if they had ever heard of a man thirty feet in height. On the reply, he would point triumphantly to the trench, saying,—“That grave is thirty feet long.” The reasoning of the newspapers, as to the present competition, has been of the like conclusive character. We ourselves, must observe as applicable to the majority of the designs—and amongst the number to some which afford evidence of high professional skill—that the chief objects of the competition are not attained. Good as the designs may be in many respects, there are, we may say, none, which do not appear to us as exhibiting a measure of ability below what might have been expected from their authors, had sufficient and ample time been allowed to the study and preparation for a project which not alone ourselves, or *English architects*, see, was one perhaps the most comprehensive and varied in its character ever submitted for professional consideration. In some cases, tolerable plans are found, with hastily designed elevations; in other cases, the drawings do not do justice to the real thought. It has resulted from the terms of the announcement, that the block plans are, in the majority of cases, almost valueless. In all cases, the scope for useful suggestion, either as to the general site, or the distribution of the individual Offices, was reduced to the narrowest limits; and even the general street plans—useful as some of them will be—cannot be considered, any one of them, so far original or elaborate as to deserve a premium of 500*l*. Moreover, as we and everybody foresaw, it is impossible for the judges to escape the dilemma—resulting from the impossibility of using designs by different authors for parts of one integral undertaking,—that is to say, the giving premiums for each of the advertised objects to the same competitors—in which case a very large proportion of clever designs would be unrewarded—or the mere division of the awards on a principle which is not that put forth, and pays no regard to proportionate merits. The latter course would remind us of the story told, we think, by *Punch*, of the one successful adjudication by a “third party,” in a dispute between husband

and wife, and the *impartial justice* of thrashing both.

Disregarding for the moment the connection of the two Offices with the general arrangement, let it be recollected, that some of the sets of drawings which will probably receive premiums, show the two Offices either in one arrangement, or really in a connected design. How, then, according to any principle of fair adjudication—better than “tossing up for it” amongst the competitors—can one design be rewarded without an equal reward being due to the other?

Supposing, as we are inclined to think may be at present intended, that a premium is given to a block plan, and a premium to another competitor as the author of the best design for one of the Offices,—which ever of the two competitors is commissioned to make the working drawings, he will have to make a fresh design for his own, or the other portion of the general scheme,—whereby, either he will be in effect not premiated for his first design—having already spent the amount in preparing it, whilst it is rendered useless—or the country will be paying one or more premiums, without their conducing to the object in the manner which was contemplated. This course, or any other which is, as we may designate it, disorderly in point of judgment, cannot conduce, as the present occasion might have been made to do, to the objects of all parties. The course which was really open to the Government, might have been either to have, as we were first disposed to recommend, a preliminary competition for the block plan, or to announce only one comprehensive set of premiums. The designs which are the most practicable, are it will be observed, all prepared just as though this last had been the principle of the competition—the circumstance thus pointing to the conclusion that if “concentration” of plan and unity of design are to be best attained, the whole work of the offices, if not also of the improvements connected with them, must be that of one directing mind. If on such supposition the work appear to be of vast extent, this shows only the necessity of taking up the design on a correct logical foundation, and of giving far more time than has been given in the present case, to the study of the subject. Indeed, we must admit, that a separate competition for a block plan is consistent only with the employment of the successful competitor on all the future designs, or with the alternative that unity of decorative character—as really requiring the employment of but one architect—should be not sought for. We have taken occasion to speak of some of the “block plans” in the present competition, and may have to name others, as not only having the appearance at least, of the study of the wants of the several departments—which, more than a “block plan,” is really what the Government required for their handsome premiums, but as having the buildings grouped with precise attention to symmetry. Would not the several parts of such projects require that they should be completed by the same hand?

But there would have been advantage in another respect from a different course in the instructions, namely, that—whether having one or more competitions—suggestions could have been received for designs without the restriction of the “red line.” The designs sent in, it may be said, would have been widely asunder in their principles, and would have given some difficulty in comparing them. But the question there would seem to resolve into—sufficient allotment of time for examining the drawings, and compensation to the competitors by money and the eligibility from a public exhibition. These points we should not have felt less hopeful of obtaining than under the present arrangement; and we think it very likely that the superior



eligibility of some one site would have stood out so prominently in connection with a good plan and design, that there would have been even less difficulty in selecting than, perhaps, is being found now.

We should also observe, as to the choice of a different site, that it would not only have allowed of the appropriation of some or all of the present proposed ground to the purpose of a park, as recommended in several quarters, and lately, in a pamphlet, by Mr. Beresford Hope, and evidently thought of by some of the competitors; but it would have got rid of much of the difficulty which we apprehend there may be from the vicinity of the Abbey to the Houses of Parliament, between which and the Offices it is clear there must be either assimilation of style, or some discordance and mutual injury. The perception of this circumstance has led some of the competitors to contend stoutly for the Gothic as a style, others to select the Elizabethan or Jacobean, as likely to prevent the harsh contrast which there might be alternatively at the Whitehall end, or at the south, and others to put forth as far as possible a new style with the same intention. Believing, as we have often urged, that architecture would be better understood and appreciated by the public were there but one prevalent style, we think the question as to Gothic is whether it is likely to become soonest the style of the day, and if not, where in using it in a city we are to break off. Whatever the style of the future, no doubt it will be one owing much to the Gothic; and we are content for warranty for arguments that we have used at any time, to point to the evidence which the present exhibition affords of the change that is going on in modern Gothic architecture itself.

There exists, we have said, very widely-spread misconception as to the thought and labour needed in a project of this nature. A few months were abundant to get from our friends evidence of their taste and professional abilities, but were utterly inadequate to the object in the particular case. That enough has been done to provide food for long and patient study, we well know, as also that no adjudication which can be just by the terms of the competition, or approach to giving satisfaction, can be made, without an amount of trouble on the part of the judges which has never yet from any case been conceived or expected. We would, however, urge that there are interests both public and professional extending over the present juncture; and, allowing the justice to architects of liberal premiums—nay, contending that both the public and private interests are served by compensating our profession for its labours, we yet apprehend the danger of some disastrous revulsion in the public mind, or in Parliament, should it appear that the expenditure, even of 5,000*l.* has not directly served its object. The objects of the Government, whether as to the better organization of the public service, or the improvement of the metropolis by better communications, and by the display of art in architecture, should have the warm advocacy of every one. We regret to see any question made as lately in the Upper House, as to the real public demand for what the Government have proposed doing. The economical question has been gone into often enough, and we thought was uncontested; and even if the hire of offices now costs only 30,000*l.* and the interest of 1,500,000*l.* purchase-money of land, would be at 4 per cent. 60,000*l.* it does not follow that this correctly represents the money difference now, any more than it would do in future after the increased requirements as to business, and the probable rise in the value of premises. The objections raised by the Duke of Somerset, and others, only show to us the necessity of at once proceeding to obtaining the whole of whatever site may be decided upon as ultimately to be covered, and to settle upon a general design adapted for it.

These points have appeared sufficiently important to be recorded, to keep us long from the continuance of the remarks on the several designs in which we had not been able to advance far when we broke off last week.

Two designs, one for the Foreign-office and the other for the War-office, in the Gothic style,

are numbered 54, and bear the motto "Suaviter Fortiter;" and two other sets of drawings, numbered 54*a*, and having the motto "An bon Droit," treat the same subjects in the French palatial, or modified Italian style. There are no less than forty-five drawings in these sets—publicly spoken of as by Messrs. Habershon; and we have already noticed a design bearing the same motto as No. 54*a*, and in the style of the latter, as apparently to be ascribed to the same authorship. The plans in the designs 54 and 54*a* are the same with slight variations. These plans show corridors better lighted than in many cases where a principle of distribution similar to that of the present designs has been followed. The Foreign-office and War-office are treated, as by most of the competitors, in one design; a carriage-way separating the offices, on plan. Looking at the Foreign-office plan, the chief rooms are seen to surround a court-yard, the entrance to which—also for carriages—is at the east, from the way previously mentioned; and opposite—across the court-yard—is the minister's residence, with two principal staircases in it, one on each side. Similar staircases occupy the like relative positions to the entrance, in the official department. The plan of the War-office has the rooms ranged for the most part around two oblong courts, whilst in the eastern portion of the building there is a hall with galleries, the height of several stories, from which the main corridors lead out. The lighting in the first design, however, appears to be the best, as by means of recesses about the court-yard, light is obtained for the corridors at intermediate places in their length. The decorative character of the design is given by buttresses and pinnacles, traceried windows, high-pitched roofs and gables, oriels and dormers, parapets with elaborate bratishing, and octagonal masses at the angles of the buildings crowned by conical roofs. The War-office exhibits in the centre of the front a large six-light window, under a gable, and octagonal turrets and pinnacles,—the window lighting the hall before mentioned. In the designs in the French style, 54*a*, for the octagons on the plans, quadrangular masses are substituted, carried up as pavilions, with curved roofs; the centres of the principal fronts being crowned by domes, one quadrangular on plan. The Foreign-office, as seen from the Park, has two principal stories of coupled columns or pilasters, arch-headed windows, and a Mansard roof, with dormers; the masses at the angles (of three intercolumns) being carried up a third story, and finished with a pediment to each face, above which is the curved roof. The roof to the central mass is raised on an attic, or podium. Some of the pavilion roofs are formed of curves of contrary flexure, and are very effective.

The design No. 56, "Ancora Confidentie," by whomsoever it may be, exhibits a high degree of art in its composition; and it is one that we are the more disposed to notice, as, from the absence of perspective drawings, and the position in which the elevations are hung, it may not receive the attention it deserves. The author exhibits a general block plan, and separate drawings of his design for the Foreign-office and War-office, which again are united. We discover that he would retain the site of Westminster-bridge, and also, like most of the competitors, Sir Charles Barry's existing Board of Trade. At the back of the latter he shows a semicircular addition looking to the park. On the space of ground west of Parliament-street, and between Great George-street and Downing-street, he would erect two similar structures. Of these, one is appropriated to the Foreign-office and War-office, and is shown surrounding a court 280 feet by 120 feet,—the building on three sides being of three stories, besides an elevated basement story and a very lofty truncated roof with dormers; and the portion, filling in the fourth side next Charles-street, where the entrance-gate is, being of two stories. The Foreign-office residence is in the south-west of the building. The plan has an ample provision of staircases, and glazed areas and courts lighting the corridors. Ventilation, also, has been well considered. The height of the basement above the ground-line is advisedly designed, having

regard to the appropriation of that story in the particulars, and to the difficulties of the site for drainage; but the author, not unreasonably, supposes that the printing department might be placed more advantageously than as intended; and he therefore provides the rooms in his lofty roof as an alternative. The style may be called Early Anglo-Italian; but, whilst the general character is Jacobean, there is little or none of the peculiar ornament of the last-named style, whilst in its place there are elaborate *relievs* in panels on the faces of certain broad masses or piers, by which each front is divided into a number of bays with many uniform windows and pilasters. The rustication of the masses is especially well grouped and varied. These piers are carried up, admirably studied throughout, and are surmounted by the chimneys.

The design for the Foreign-office, numbered 58, and marked "Opera 81," and that for the War-office—60, "Mars, 2,"—are spoken of as by Messrs. Banks and Barry. Under the first number, are well-studied street plan and a block plan of the Offices generally. In the street plan, the principal features, as shown, are the retention of the site of the new Westminster-bridge; a bridge at the Horseferry; the widening of Hungerford-bridge, with a curved approach from a point east of Northumberland House; a crescent near the end of this bridge, with streets radiating—one to the Strand, opposite Bedford-street, and one to Whitehall-place—an embankment passing under the bridges, but which, as in many of the designs, does not seem to provide any docks or receptacles for the barges, and joined to Whitehall by a street opposite the Horse Guards; communications between Charing-cross and the Mall, and the Haymarket and Westminster by a road west of the Parade; the enlargement of the Hospital, removal of the Sessions-house and of St. Margaret's Church; the retention of the present Board of Trade building, new buildings being erected at the back; and the arrangement of the Parade on a regular plan. In the block-plan, the ground west of Parliament-street is divided into four blocks, one of them being made to correspond with the present Board of Trade; and on the opposite side there is a street running in an oblique direction from "Downing-square" at the north end of Parliament-street, opening out a view of the clock-tower of the Houses. The "square" would require the appropriation of part of the site of Richmond-terrace. A street called Richmond-street is shown in place of the "Mews." Of the designs for the two chief Offices, only that for the Foreign-office under the No. 58, quite accords with the block-plans. The two Offices are separated by a street crossing Charles-street, proposed to be called Clarendon-street. The Foreign-office has a quadrangle with a screen of five arches and coupled columns. In the careful report accompanying the designs, it is stated that one-sixth of the gross area of the buildings in the Foreign-office is required for internal courts; and as to the question of one general building or two for the Foreign-office and War-office, it is doubted whether there is any economy of space by having a single building. The rooms are distributed round courts; but the corridors in one building, are not so well lighted as in the other. In decorative character, whilst the War-office is designed in the style of James I. the Foreign-office is of rather later Italian character. The latter exhibits superimposed pilasters, clustered in the centre of the front, arch-headed windows with dressings, festoons, a balustrade and vases, masses with high roofs, and chimneys at the angles of the building. The other design has rusticated pilasters, and has bow windows and others with mullions and transoms.

In No. 59, "Matter of Fact," though one portion of the corridor would be dark, areas or well-holes for light at the angles form one of the best features in the design. The arched and coffered ceilings of the rooms are not without merit, but the external details, which are of Italian character, are commonplace.—No. 61, with the motto "Anglo-Saxon" in a circle, includes a general street plan, a block plan, and views and elevations of designs for the offices generally, and separate drawings for the Foreign-office and the War-office. In the first-



named plan, Westminster-bridge seems to be moved to a site north of Richmond-terrace. The present Board of Trade is removed, and the whole space "bounded by a red line" is treated as one design. Parliament-street is intersected by an oval *place* of covered ways, which are much used elsewhere, and is crossed by two archways. On the south, in Great George-street and Bridge-street, two similar elevations would seem to be proposed. The Foreign-office and the War-office have large open courts, with corridors lighted from them. The former Office has an inner hall or entrance corridor, 130 feet by 30 feet, with coupled columns and corridors round, forming what we may call aisles, through the ceiling of which light is admitted. There are two versions of the design, one in the English style of Elizabeth, and the alternative design in the rich French style of early portions of the Louvre. Each specimen of style, as treated, has certainly merit. In the view of the Park front of the Elizabethan buildings, the residence of the Foreign Secretary, First Lord of the Treasury, and Chancellor of the Exchequer, are shown with arcades in the recesses in the lower story, long projecting porte-cochères, and the characteristic details of coupled and rusticated pilasters, mullioned windows, and scroll gables. The ends are massed, with octagonal turrets at the angles, and an octagon and large crown in masonry in the centre. The other design has superimposed coupled columns, arched windows, and subsidiary orders; pavilions with high truncated roofs, and curved pediments broken for the insertion of sculpture; dormers; and caryatides. This design is very elaborate, and the interior decoration has been well studied. Arches, as before, cross Parliament-street.

No. 62, "God save the Queen," includes a street plan, a block plan, and a design for the Foreign-office and War-office in one building. This is joined to a building of corresponding design southward, by columns, which are profusely employed throughout the design. There appear to be four stories, besides an open loggia or belvedere over the whole roof. One design for the Foreign-office is shown in the style of Windsor Castle. The corridors are lighted through the floors.

No. 64, "Well considered," is shown in an elaborate set of drawings, about seventeen in number, including several large perspective views, and comprising a street plan, a detailed block plan and general views, and drawings of the Foreign-office and War-office separated by a covered street. The general plan seems to contemplate the retention of the site for new Westminster-bridge; but like some other designs which we have noticed, makes the mistake of showing the additional width on the *down* stream side. It also provides for a bridge at the Horseferry; the widening of Hungerford-bridge, with a curved approach from a point east of Northumberland House (a proposition which, as in other designs with the same feature, we may say would hardly place the *route* from Trafalgar-square in the most advantageous position); the removal of Dover-house, to provide an approach to Whitehall for the royal processions; the preservation of Sir Charles Barry's building, and the removal of St. Margaret's Church and formation of a square next the Abbey. The ground next the river is proposed to be given to the Admiralty, Home-office, Board of Trade, and Colonial-office in one block, having colonnades on a podium, two principal stories, and an attic, a decastyle portico, and a dome above. Statues, fountains, and candelabra, are disposed about the area, south of the building, and on the embankment. In the length of Parliament-street, the War-office, and Paymaster General's office, exhibit two similar fronts, with a central street. Looking at the War-office, there is a grand arch of entrance to an open court, next which the principal corridors are placed. From this court, crossing the corridor, a circular hall is reached: around this the staircase winds, and it is surmounted externally by a dome. The general elevations exhibit three stories of orders, a basement rusticated horizontally, and ordinary window dressings, and masses grouped at the angles. The Foreign-office is similar in plan, but has coupled columns, arch-headed

windows, and arched loggias. The plans and the drawings have obviously absorbed the author's whole time, so that the decorative design does not exhibit results of the thought that is required, or the author could, under more favourable circumstances, have given to the subject.

No. 65—"Meo judicio"—a design for the Foreign-office, by Mr. S. Huggins—in our humble judgment, treats the plan better than the decorative design, in which we can hardly help noticing the small semi-circular porticoes at the angles, only supporting equestrian statues, as surely at variance with principles which the author has done so much to expound. The grouped columns as piers to the arched porch, and the perspective effect which is attained thereabouts, should, however, be commended.—No. 66, with the motto, "Treu und Fest," is a design for the Foreign-office, leaving the State Paper-office as a detached building, standing. In the basement, below the central court, a *restaurant* is shown. The portion of the design which deserves most notice, is the plan of the Minister's residence, where oval, circular, and angular forms are well combined for effect as well as convenience. The entrance porch, however, with conservatory over it, is of very ordinary character, and the official entrance is surely too confined and narrow. The basement is elevated above ground, and there are three other stories, with details which may be called Italian, but which err in an opposite direction to those in a design which we have noticed,—the novelty being purchased rather at the expense of propriety and taste. Some of the windows have widely splayed reveals; others enclose a distinct set of dressings with pediment below the glazed aperture of the arched head; there are statues and arches corbelled out, and some features which remind us too much of the mistakes which are commonly made in cement decorations. The rooms are proposed to be heated by Pierce's stoves.

No. 67, "Foi," which has the plans coloured to show the departments—to the manifest saving of time in examination—is a design for the War-office, which it may be well to look at, since it seems to provide the required accommodation on a less area of ground than other designs, whilst it has a considerable space appropriated to a central hall. This hall runs from front to back, and is surrounded by galleries, from which the corridors lead; and in the centre, the messengers' boxes and waiting-rooms are built up. This panopticon principle has not been adopted in so many cases as we should have expected; though messengers' boxes placed with a similar intention, are we believe, generally used, as being deemed essential, in the existing offices. The elevations with an order of pilasters on arches, are to be ranked with those which lack the required invention.—No deficiency of the latter important requisite can be found in the design No. 69, marked "Viator," of which we have already named the authorship. The War Office and the Foreign Office are proposed to be erected in similar blocks, but united by two covered ways and a larger *cortile* in the centre,—each of the three, of two stories. Thus, a prominent feature in the plan is a "grand promenade" of 500 feet in length, and 80 feet in width, from end to end of the two Offices. This feature is divided into several halls, with the staircases from which the corridors lead out, these last being so arranged that they are lighted chiefly on one side, either from the hall, the stairs, or one of the open courts. The courts are forty feet across; and as the author shows that the *direct* rays would light only the floor of the corridor in the story next below the top, it is inevitably suggested that those plans which provide less area for lighting should be tested as to the point in question. No. 69, however, we fear, is deficient in external window opening; and with all the merit of the design, the difficulty of combining good plan with regularity in the exterior, has not been quite overcome. Thus, a room 25 feet by 27 feet, is lighted by a single window,—of about 7 feet indeed, but set near to one angle. Rooms 30 feet by 12 feet, also, which there are in some cases, cannot be considered desirable. A communication is provided between the official residence of the

Foreign Minister and the "grand promenade," so that a great space is available for assemblies and state receptions. This important object is positively avoided in most of the designs, though we find nothing in the instructions leading to the inference that separation was necessary. The offices have each two entrances, or east and west,—one entrance in each case being from the *cortile*, which is enclosed by gates of bronze. The required distinction of the offices is not affected by the arrangements referred to. The plan extends for a distance of about 324 feet on the Parliament-street face, and the design marked "Suaviter Fortiter" has the same dimensions within 3 or 4 feet, whilst that marked "Foi" has only 288 feet. The design does not bear much resemblance to any existing building, unless in a few points to the work of the same architect at the corner of Fleet-street and Chancery-lane, but it has more novelty than that building in its windows, and in the ornamentation, which includes forms modified from the Classical, Byzantine, Gothic, Renaissance, and Italian, and some Asiatic styles, combined with remarkable skill, and mainly with propriety. The several fronts are generally like one another, with each one of the eight angular masses having rusticated piers and turrets with pagoda-like cappings, and a larger termination, with much surface enrichment of the same general style in the centre. Enriched mouldings, tympana to arches adorned with reliefs, traceried spandrels, Byzantine shafts and capitals, and windows sub-arcuated and shafted, are amongst the more remarkable details. The ceilings have been well studied, and the lighting through glazed coffer is worthy of notice. The author proposes a similar group on the opposite side of Charles-street, but, like other competitors would alter the site of Westminster-bridge to make it centre with one side of the ground—in this thinking more of his own design than of the public interest and convenience.

We shall return to the designs next week. We have received a very large number of letters from the country inquiring how long the designs will be visible; and one asks if the Exhibition will remain open to the public on the Monday, Tuesday, and Wednesday of the Whitsun-week? Without being able to answer the general questions, we may safely say that the Exhibition will be open on the days in the week we have just now named.

Let us add that Mr. Samuel Angell and Mr. George Pownall, both Fellows of the Institute of Architects, have been appointed assessors to aid the judges in selecting the best designs.

#### MR. BOUTELL'S LECTURES ON THE WESTMINSTER COMPETITION.

On Tuesday evening a second lecture on the Westminster competition was delivered by the Rev. C. Boutell, at Binfield Hall, Clapham. His purpose was to excite sympathy for the Gothic and national style, and antipathy to what he considered the exotic character, monotony, and general barrenness of invention common to the designs called "Anglo-Classical," "Anglo-Renaissance," &c. but which he denied had ever acquired a right to the prefix. We had no public buildings in those styles satisfactory enough to form authorities, nor indeed any civic building worthy to be so considered, with the sole exception of that in which, by a happy coincidence, the question was now being decided, Westminster hall. It was surprising how people standing in that building could speak of Gothic as a peculiarly ecclesiastical style; it having been simply our native and national style for all purposes; but our civic buildings having by sundry lamentable fatalities (with this exception) disappeared, and only ecclesiastical ones remaining from the reasonable times, we had come to so associate rational architecture with them, he said, as to fancy it a particular style, and an ecclesiastical one. He gave another instance of the density of prejudice, enveloping the general public on such subjects. Two well-dressed, and, as far as he could judge, well-educated men, pausing before "the most purely-English of the designs," observed that "this was the fruit of cosmopolitan competition. Our Government had invited the



architects of all nations, and the result was, that deluded aspirants from — knows where, had sent such outlandish exotics as this!" The lecturer strongly advised all visitors who would avoid such incredible blindness, to look up occasionally at the building in which the drawings hung. He concluded with some remarks on the choice of judges, who he had hoped would amount to the Englishman's favourite number—that of a jury; and he ventured to read a list of some names (chiefly of noblemen and clergymen) that would have given him greater confidence. The list seemed to us to include every Englishman out of the profession, who has written on the subject of architecture; but if so, it disclosed a curious fact we had not before observed (and in which, if we are mistaken, we hope to be corrected), that the current styles have now, in literature, *no living non-professional advocate*.

The only architect on the reverend lecturer's list was Mr. Penson, whom he said he would have preferred to Mr. Burn. It concluded with the name of Mr. Ruskin, who was present, and favoured the audience with some characteristic remarks, as suggestive as his always are. Alluding to the common opinion, that Gothic buildings are extravagant in cost, he first demurred to the sub-implication, that we ought on all occasions to choose the very cheapest kind of work, a rule not followed by the most thrifty house-keepers in any other matter, and which would be a bad guide in building, at least in the case of national and monumental works of the first order. But he, as well as the reverend lecturer (who had maintained that all the costly enrichments of the Palace of Westminster had the effect of rendering it *less*, instead of *more*, Gothic), denied, utterly, that classic or Italian buildings could be made cheaper than Gothic, except by execution in plaster and other shams, hardly possible in Gothic; and when he supposed the one would not admit in this class of works, whatever their style. Complimenting, then, the design No. 35 ("Thou hast covered my head in the day of battle"), Mr. Ruskin disclaimed any part therein, denying his ability to have produced such a work. As might be anticipated by those who have read his last, but last happy phase of architectural opinion, that stated in the outrageous preface to the third edition of the "Seven Lamps," he placed the whole superiority of Gothic in its affording fields for sculpture; regarding now, it appears, rationalism of structure as unimportant (because, like grammar or logic, it can be taught by rote, we suppose); and mere structural beauty,—the subject of his "workmanly admiration,"—the beauty and sublimity, for instance, of Cologne or Speyer Cathedral, the first Cistercian abbey that had any,—Westminster-hall,—or the Preston-like temple that Phidias tried to improve in mechanical design and *did not*;—as showing no more art than the well-proportioned "placing of dishes on a table." The answer is so obvious that it seems an insult to our readers to suggest it. If this thing be so easy, why is it not done? Why are not the "Crystal Palace," or "the Builders," at Brompton, made at least beautiful, if not beautiful and rational at once? If mechanical beauty needs so little art for its production, why can you appeal to no unquestioned example of it in the century last past? and to none uniting it with logical reason, since the Renaissance? For, if you admit Jones's or Palladio's works, which no one pretends to be rational, as models of proportion; and a few engineers' works, which no one denies to be ugly, as rational and truthful; pray where is the work for these four centuries (since Ammannati's bridge at Florence) that unites these qualities? Strange that what was so peculiarly needful to us, since leaving off external sculpture, should prove so unattainable, if it requires no art. We had hoped Mr. Ruskin's activity and balance of mind would, ere this, have cleared him of so strange an aberration, but it seems he must write a little more that he may think more. He has got so far towards Carlyle's conclusion that "künst is a great delusion," as to hold now that all "künst" which is not painting or sculpture, is a great delusion. But, in fact, there is far more truth in the former extreme dictum, rightly accepted, than in this middle-looking perversion of it; for we take Carlyle's meaning to be, that all art, which is not *useful art*, is a delusion. Neither painting nor sculpture was practised in the great times as what we call "Fine Art" (a new name properly given to a new thing); they were strictly useful arts, only done for the utilitarian purposes of education, symbolism, public record, useful jest and satire, book-illustration, &c.; never for "decoration." They were *decorative*, and also *decorated*, because all work was so, and will be so, again; the present notion of making any art only useful seems as great a blunder as the other, of having purely "fine" or "decorative" arts. There is no mere useful art, and (not "two Fine arts") but no mere Fine art, possible to men; and whatever pretends to

be either is quackery and delusion. But the only measure we can have of the genius shown in producing any excellence is the rarity of it; and we deny that the "workmanly" beauty, which Mr. Ruskin now depreciates, has ever been a very common quality even in the Middle Ages, when truth and rationality were universal. Such designs as the Doge's Palace, or as Wenlock Abbey, Salop, were exceptional even in the ages of reason, and the short after-period for which sculptors continued the only architects, and really, as he says, disappeared at the separation of these professions. Now, it may be quite true that we might as well talk of "immortal architects," in the modern sense of the word, as of "immortal shipbuilders," but the question is not who shall be called immortal, but what kind of building shall be admired or followed. There are many things whose production does not constitute men immortal geniuses, which yet are highly desirable, and which nations like England may fruitlessly, for whole centuries together, make the most frantic efforts to attain. And such, we maintain, is (first) that truth and reasonableness of buildings which Mr. Ruskin once, and rightly, contended for as more essential than imagination, which can be taught to any dunce,—which was *universal* till the "Renaissance;" but of which we now find in 218 competitive designs, only a few that just show a faint appreciation or recognition; and (secondly) that beauty or fitness of mechanical forms, which, though never universal, was once exemplified, perhaps daily, in every large city, and now does not proceed beyond a paper project once a century. These things must not be forgotten in the search for "a Phidias," who, when he comes, will "settle all our architectural difficulties in a very unexpected way;"—because Mr. Ruskin must be well aware that the real Phidias did no such thing, for the trifling "workmanly" peculiarities of his Doric were not even improvements; and, as if to show that this may apply in the basest architectural style as well as the highest, the modern Phidias fell on times antipodean to the former, and the similar peculiarities of Michelangelo's Renaissance are just as mistaken. So there is diversity of operations between the sculptural and the architectural—there are Bezaleels as well as Buonarrotis.

Alluding to the efforts now made after a less selfish use of the highest art, it was observed that Gothic architecture alone solved the problem, by turning the great man's house, as it were, inside-out, the high art being exposed externally, and quiet comfort within. This was what should be specially aimed at in national "offices," that they be internally utilitarian, well lighted, well ventilated, well decked, undistracting to the mind; but externally storied and speaking with the highest art we could command. Reference was also made to a pamphlet by Mr. Hope,\* urging (what would reduce all the competition work to waste paper) the extension of the park to the river-side; on which Mr. Ruskin remarked, that so costly an addition to the "lungs" of London would be better spent, both on sanitary and artistic grounds, in some locality far from existing "lungs;" and suggested one for the City, that would have a grander effect than the same extent of space in any capital he knew; namely, the cutting a regular slope, with steps, 500 feet wide, from the south side of St. Paul's down to the river. The scale afforded by the traffic crossing on the various landings would give such an opening prodigious grandeur; but we should prefer it not quite so wide as the cathedral's length, leaving the ends in mystery, and keeping exact uniformity in the two halves of the portion exposed.

#### CORRESPONDENCE AS TO THE WESTMINSTER DESIGNS.

WE have received letters from two or three of the competitors whose designs are in the Pointed style, justifying its use, and we insert the following:—

"In making my design for the Government Offices, I have deliberately gone in the face of the publicly circulated report that a Gothic design would have no chance of success. I have not only done this, but have felt it the more incumbent on me to do so in consequence of this report.

How far this report was well founded I have no means of judging, but I am unwilling to believe that Sir B. Hall would have told the meeting of architects he called together, that he was determined to leave it in this respect perfectly open, if he at the same time mentally intended that those who acted on the faith of what he said would thereby deprive themselves of all chance of success.

\* Public Offices and Metropolitan Improvements. By A. J. B. Hersford Hope, M.P. London: Ridgway.

Such, however, has been the influence of the report I have alluded to, that nine-tenths of the architects whose taste would have led them in that direction have either been so frightened as to abstain from competing, or have actually gone in with Classic designs. One of the latter class I have since heard bitterly to express his regret. This is the sole cause of the paucity of Gothic designs.

My first argument in favour of a Gothic design is the *site*. A building which presents a frontage of 1,200 feet to the most important group of Gothic buildings in the kingdom, including the burial-place of our kings and statesmen, and the palace of the Legislature, ought, one would in one's simplicity suppose, and as I find every unsophisticated person does suppose, to have some relation to them in style. Of the three other sides, one is the park, where it would group chiefly with trees; the second, the river, where it would be equally free, excepting that it would range with the river-front of the Houses of Parliament; the third is the only one affected by other buildings, and there they are, all of a mean kind, excepting one which is a mere fragment, and a second of a very mediocre description, and which has taxed the skill of two architects to bring it into anything like a decent form. On the score, therefore, of the *genius loci*, there can be no kind of question.

My second argument is this:—That the ordinary classic, or as it is the fashion to call it Anglo-Italian, style has made no development of late years, and seems almost effete,—so much so, that a large party are crying out for a *neo style*. That I sympathise in this wish, yet holding that no style can be developed without a basis, am of opinion that, if such a new style is to be aimed at, the revival of Gothic architecture, which has from other causes been going on for the last fifteen years, at once offers for it the basis it demands,—a basis founded on the native architecture of the nations of modern Europe,—the founders of our own civilization. We have done much to carry this idea out in church architecture, and have a better prospect in secular works, from the very fact that changes of habit and requirement will necessitate changes which will be so many elements of life and novelty.

I hold, then, that the greatest object in modern architecture is the zealous and determined endeavour to develop a new style upon this basis.

I would suggest, though I do not hold with such strictness as would come under the head of *Suumus summa injuria*, that examination ought to be made as to whether architects have, or have not, limited the *two offices* to the plot tinted yellow in the datum plans. I observe several designs, in which the difficulties which have fettered the arrangement have been got over by boldly stretching out into the Park, or otherwise deviating from this plot. The residence for the Foreign Secretary gains enormously by such deviation, but it seems hardly fair.

A COMPETITOR.

#### A WORD FOR HERALDIC PAINTING.

THE art of heraldry (to which architecture has been indebted for some of its most beautiful ornaments) is very much suffered, and is likely to become lost, from the tax that was imposed upon it in a time of war now long passed away. This tax induced many to discontinue the fashion of emblazoning their arms or crests on their carriages or equipage, and the discarding of this decoration and memento of their ancestors threw out of employment a great number of ingenious artists and draughtsmen: no father dreamt of sending his son apprentice to a heraldic painter; and the old hands, who forty years ago earned capital wages from this pursuit, were stopped in their career of acquiring a fortune, or supporting their reputation in an art that once received the highest patronage.

Striking improvements have been of late years effected by the reduction, or entire removal, of the duty on different materials used in building, and we anticipate the same result for heraldry. The art itself needs no vindication. Some of our first artists have exercised their talents in it: others have found it a stepping-stone to more extensive practice. There can be no doubt, if more facilities were offered to it, that the opportunity would elicit the abilities of numbers who are now unemployed, and at the same time revive a beautiful and ancient art. F. L.



## WREN'S ORIGINAL MODEL OF ST. PAUL'S CATHEDRAL.

The Dean and Chapter of St. Paul's have agreed to exhibit this model at the Museum of Arts, South Kensington, on the understanding that it shall be put into repair under the direction of Mr. Penrose, their architect.

A sergeant of Royal Engineers, with sappers, commenced the removal of it on Monday last, and the model will be exhibited to the public whilst it is under repair. The museum will be ready for opening early in June.

## NOTES ON EACH OF THE WESTMINSTER BLOCK PLANS.

The number and positions of the permanent bridges (if Englishmen can ever build permanent ones) must receive, at least as regards those between Waterloo and Vauxhall, a decision prior to and governing that of any future thoroughfares; while the latter must precede and govern that of the general plan for the permanent government buildings, for any built before that determination are nearly sure to be temporary; this plan itself equally demanding priority to, and influence over, the internal arrangement of any one of them. Whatever the urgency of the occasion, therefore, architects should not have been set to elaborate the details of the War and Foreign Offices, nor even their sites have been fixed, till the general plan be decided; and the six months given for the simultaneous production of these three designs would have far better sufficed for the drawing, comparison, and choice, first of the block plan, and then of the two particular plans, separately or together. This mistake accounts for so many able competitors neglecting the two latter, notwithstanding the more numerous prizes offered for them (fourteen, amounting to 4,200*l.*), and concentrating all the attention on the block plan (for which there are only three, amounting to 800*l.*); their ambition being little excited by the mere money prizes for designs likely never to proceed beyond paper. One of these chooses the instructive motto, "Mai mai penes dei detagii avant e hic ben determinato il generale," which strikes at the root of our continual doing and undoing. Thus, if a foreigner wonders why Regent-street was twisted into so many ingeniously disguised bends, he will find it was solely in order to reach and fit the facade of Carlton Palace, which most solid and only dignified residence modern London has had, just saw the completion of the avenue of plaster sham palaces in time to be itself demolished.

To no less than 75 of the 131 planners, the present Westminster-bridge has appeared so extremely out of place with reference to the chief actual or possible thoroughfares,\* that they have actually proposed the sacrifice of the foundations already laid for one on the same site, which will hardly cost less to remove than they have cost to build. The reasons, then, must be pretty strong that have induced so many independent thinkers (in fact, as will appear directly, a majority) to make such a proposal, in designs that they knew must, if not among the three best out of hundreds, become waste paper. This consideration makes it doubtful whether a single designer would have proposed the renewal of the bridge, had not these piers been thus prematurely erected.\* As it is, only 73 have done so; for I find three plans, Nos. 96, 182 (in one of its alternatives), and 185, compromise the point, by retaining only the short piers already built, and making it a *foot* bridge. Thus 75 remove, for 73 who complete them.

Not less important is the distinction between plans that do or do not anticipate a bridge approached directly by Cockspar-street. Many look on such a bridge as an inevitable fact,—if not soon done by the public, sure to be so by a trading company. Accordingly, 34 of the plans represent one: the great majority do not extend far enough to give their authors' views of the question, and only 29 have thought a permanent substitute might be afforded by replacing Hungerford-bridge with a carriage one,—of course, only a suspension bridge, because any other, by requiring new piers, would be as costly at that awkward site as at the most convenient one. The design 99 alone predicts a carriage bridge at those places, which can hardly be conceived necessary, though likely enough to happen, because a company would best find their account in widening Hungerford, after which the public would still have to build the other.

Another grave question is raised by those 62 plans that propose a bridge (and in two cases, Nos. 76 and 174, two bridges) opposite the base or river end of St. James's-park; that is, too far south to be directly

approached by Cockspar-street, or any future road clearing the north of the park, and yet north of the present bridge, whose continuation only clears its south side. It is important because, with such a bridge, dividing its traffic like the present one, to both north and south of the park,—but, unlike the present one, sending none straightforward, it takes no great foresight to tell that the national taste for directness would soon, in spite of all "block plans" to the contrary, require a continuation through that park. Only 51, indeed, of the 62, make their park-bridge carry traffic both to the north and south; the other 11 having another bridge, either at Page's piers or Cockspar-street, either of which, by taking all the traffic of its own side of the park, would leave the park-bridge to be felt a most indirect path for the only traffic it conveyed (except to the government buildings), namely, that to the other side of the park.

Above Westminster Palace, again, every plan that extends as far as the Horseferry, places a bridge either there or nearer the palace. The former has been drawn merely because liked of for years, and talked of because two mere lanes happen to open there; that on the Lambeth side connected with a road from the N.E. but none from the S.E. which would have to be opened for at least a mile; and that on the Westminster side barely extending a quarter of a mile, and having no connection with any thoroughfare. Whoever glances at the whole map of London, or beyond a radius of a quarter of a mile, at once sees that if either public utility or display of monuments were the object, the bridge most called for between Scotland-yard and Vauxhall-bridge is one in a line between the nearest bends of the two main S.W. and S.E. thoroughfares,—that through Chelsea, and that into Kent; in short, between the southward elbow of the Westminster-road, and the similar, though more obtuse elbow of Victoria-street, shaving off a little of the extreme north of Lambeth Palace garden, and extreme south of Westminster College garden, hardly touching a building except the small Orphan Asylum (where it leaves the Westminster-road), a house or two in Lambeth, the same in Abingdon-street, and the rookery about Old Pye-street, and yet opening up the sunny sides of Westminster Palace and Abbey, at the very distances they are designed to be seen from,—the former about 100 feet, and the latter about 500 feet. Ten plans have this Victoria Tower Bridge, and only one (No. 150) has neither this nor the Horseferry-bridge, but an intermediate one.

Next to the bridges, the most important thing to note in the plans will be how many distinct designs they suppose or admit in the new buildings, because we shall find every number provided for, from one up to twenty,—the former, on the general aim to reduce them to as few as possible, being quite characteristic of the French (or else Gallicising, imperialising, or ultra-centralising) designers, notwithstanding the many instances France affords of the constant failure of an architect thus chivalry to secure to himself the direction of vast prospective works, at the cost only of (what is nothing to him) their utility and best beauty, that of imaginative variety.

Nothing can be easier, or require less imagination or thought, than the launching out, with a map of London and a ruler, into such designs as 99 or 138, or even 164,—a far more valuable work than either, apart from being indicative of a healthier mind, because no man of moderate inventive powers would or could waste his own or others' time on the mere mindless elaboration of the two former, the amount of finish expended by the author of 164 being quite as much as they were worth. But experience shows the inability of any age thus to entail on successors a mortmain that wilful human nature invariably, at any cost of symmetry, breaks through. There is no evidence of its being ever done, even by the mighty priesthoods of Osiris or of Bramah; no proof that any design, even for a single pile, has been uniformly completed at all, if not as soon as our own two uniform temples, Salisbury and St. Paul's,—that is, in some 30 years. The only "ideas" that an architect can leave, which posterity will find worth following, are originations of real improvements, like those distinguishing the thirteenth century; and not those so-called "grand" plans, like Jones's Whitehall, for the repetition and display of his own conceits, or still worse, of work too uninteresting even to have conceits.

In the following list, then, I have put, after each number of a design, the bridges it assumes as its basis, viz.—Ho. a carriage bridge at Hungerford; C. a Cockspar-street bridge, that is, any one approached from that street without a decided turning; P. a park-bridge, that is, any between Scotland-yard and the present Westminster-bridge; W. a restoration of the latter; V. a Victoria Tower-bridge; and Ho. a Horseferry-bridge. Then comes the number of designs (0 or 20) provided for or admissible in the new

buildings; for though I said this varied from 1 to 20 it really does from 0 to 20; the author of No. 138, though he reminds us that "Rome was not built in a day," appearing to think it was *designed* in a day, or that all official London should be so, in the day that Sir W. Chambers sketched his neat external livery for Somerset-place, of which he advises the manufacture of a mile or two more, to be applied from time to time, like his own stock of pilastered card, round each new block of offices.

After this number I have marked the style of block plan as Antique, Medieval, or Modern. Now, as many persons seem to think that plans have nothing to do with artistic style, it is necessary here to define the differences of these three, especially since the last goes on principles so fundamentally opposite to the two former, that they refuse any common measure or rule of criticism, because they can find (like a Buddhist and a Christian, or in art the Pre-Raphaelites and their opponents) no common standing ground.

The principles of the modern mode, in this art of block-planning, are too familiar to need much explanation. Every child sees them to consist in making as many small things as you can look like one great one, or parts of one intended future whole (for it always remains future), by exact square-cutting, and rigorous doubling, and, if possible, quadrupling of everything, as in the kaleidoscope, or the famous French garden, where—

"Grove nods to grove: each alley has its brother,

And half the platform but reflects the other;"

in short, making the least amount of external design go as far as you can, round as much and as many buildings as possible.

It is also now known to most people, that these principles are foreign to Medieval art, but not to so many that they are *equally* foreign to the ancient or classical, which in fact only differed from the Medieval in one point, and agreed with it in all those that distinguish it from ours. Neither Ancients nor Medievals ever dreamed of making two offices look like one, or making two things that had not the same function alike, or one design to serve for both. All this is purely modern, original, and unprecedented,—in short, the invention of modern architects, who are falsely accused of wanting invention. But as "modern" is a word continually changing its meaning, so that, by-and-by, what we call "modern" will be a past style, I prefer giving it a chronological name, like the Norman, or Tudor, which, you will observe, does not imply any connection between the style and the people or family after which it is named, but merely a correspondence in time. Thus you see that any historical fact which is found to synchronize with a particular style of art, however unconnected, may be taken as a chronological mark to name it by. Now the style we call "Modern" or "Renaissance," both in planning and decoration, cannot, as far as I see, be found to synchronize with any dynastic accession, or other great public event; but I have observed it to synchronize most remarkably with a fact in the internal history of the art or profession, namely, the custom of architects or engine men being paid in proportion to the work of those under them; or, as Sir Benjamin Hall's paper of instruction says, "a commission of so-and-so per cent. upon the outlay." Of course, this is not so high-sounding an event as the Conquest and the Reformation, to name a style of art by; but we must be content with what synchronizes, and so I will mark this as the "Per-centage-on-the-outly Style," or briefly, "Perc. St."

But to return to the points distinguishing the two former styles of planning from ours, it is not generally observed that both Ancients and Medievals were so far from wanting to make two buildings appear one, that they had a forcible mode of marking purposely their distinction, or presenting each separately to the mind; namely, by *non-parallelism*, never running the line, like chimney ornaments, or articles for sale, but setting them down visibly askew. And this is how their streets came to be never perfectly straight, though direct enough to be just as convenient as if quite so (like Whitehall, for instance, not like Gresham-street), and their courts and areas rarely quite rectangular. And what shows most the perfect contrariety to modern practice is, that this setting askew was always more carefully attended to, the *grander* and *more costly* the structures might be. People look on all this as "Gothic," whereas it is no more Gothic in particular than it is Attic, Syrian, or Egyptian.

But now observe, that while the non-percentage artists cared so much less than we about regularity and squareness in the open spaces, they cared far more about it in the *buildings*. In fact, when they had no straight or parallel-sided street, perhaps no regular-shaped court, and hardly a re-entering angle that was a right angle, neither Ancients nor Medievals could endure an oblique *salient* angle, except in a regular polygon, and that not a mere dependent turret

\* The writer is expressing his own opinions, not ours.—En.



observe, such as our Gothicists try to disguise oblique angles with, but a *lower*, broad enough to be plainly independent and more stable than the buildings abutting on it. To their eyes the least unsquareness in a salient angle seems to have so destroyed all apparent strength, or dignity, or majesty, in anything but a tower or polygon, that they could not tolerate it in the most commonplace work even. But we design it without the least disguise in the chief angles of such works as the Royal Exchange, or half the present block-plans; whose authors never think of the smallest sacrifice of mathematical exactness in an unroofed space to obtain it in the roofed, while it was formerly never sacrificed in the mass to get it in the void. But the extreme phase of this modernism is seen in the (I believe peculiarly English) expedient of curved ranges of building; not mere colonnades, like those of St. Peter's and Burlington House, nor single circular rooms, which were quite enough for contrast; but sacrifices of all internal regularity in a whole range of rooms, imitated from the "crescents" of the speculators.

So far the Antique and Medieval modes then differed from ours, and agreed together. But the Antique differs from the Medieval, and is more refined and artificial in this, that it gives the chief buildings of one system, or having a connection of purpose, a certain correspondence and balance, like the right and left of an animal, and this often in more directions than one; but never our perfect kaleidoscopic or gardener's repetition. There is no such thing in all those stupendous avenues at Thebes or Palmyra, which (though they were certainly not cramped by "vested interests," &c.) never have a straight axis—"He called the name of that on the right hand Jachin, and the name of that on the left Boaz."

It was such a symmetry as never cost one particle of variety, and never saved one line of plan or drawing. They would have valued the little twist which, in the Piazza of St. Peter's, we regard as a blunder, or, in Tratalgar-square, a misfortune to be disguised; the disguise, however, being of a ludicrously self-defeating character, for first the building of the National Gallery, finding it cannot be perpendicular to both sides of the space, as they are not parallel, sets it square with one, rather than neither. It chanced that this gave an axis curving into that of King Charles's statue quite in the old manner; but then comes the architect of the column, and sets it down with the rigour of a meridian mark, as if the Gallery were an astronomer's den, and without the slightest reference to anything but that condemned pile (whose reconstruction might, indeed, restore the curvature of axis, but that now, between the column and King Charles, it is no longer curved, but *broken*). Lastly comes another, who, finding only two things, the Gallery and column, set with gardener's exactness, cuts away the terraces, fountains, &c. with sole reference to these, and makes all the rest at once appear forced makeshifts for rectangularity and precision; as will always happen where the old and new principles of planning are thus unnaturally conjoined.

The ancient symmetry then was a far more delicate and difficult matter than either our chimney-piece principles, or the Medieval rusticity, which had hardly advanced to out-of-door grouping at all; their nearest approach thereto being in the vicinage of cathedrals, which, though never meant to have a whole side exposed at once, as Westminster Abbey at present, were always to have each front opposite a long and gently-curving avenue, as King and Tithill streets, Westminster; or Ludgate-hill and Cannon-alley, London; a cheap courtesy, that the modern rage for setting them in open fields, with all its fuss and cant, denies them.

The reader will now understand the distinction of the plans into the "Antique," "Medieval," or "Percentage," styles, to which latter I have added "Oh!" or "Circ" when the modernism extends to the extreme degrees of admitting oblique main angles, or circular walls at the expense of internal regularity. I then add the old buildings each plan retains, viz. Wh. the Whitehall frontage of the present Home-office and Board of Trade; Tr. the Treasury, on the Parade, by Sir Robert Taylor; PC. the Privy Council-office, or rather Smeaton's unaltered side of it, in Downing-street; SP. his State Paper-office; PL. the First Lord's house, of plain brick; Co. the Colonial-office, of ditto; and BC. the Board of Control, in Cannon-row.

TABLE I.

Comparing and Non-comparing Block Plans not conspicuously transgressing the Style.

I should observe that whether any of these give the prescribed area for each Office, is solely for the judges to ascertain, as the plans are in few cases accessible for measurement. Several give, by their own written statement, less than is required for some of the Offices. Now, as others may do this without the honesty to state it, we see that, unless the three prize plans be hung within public reach,

the judges will be bound, on their honour as Englishmen, to measure and calculate the area of every block upon them. Again, as I read the instructions, architects were, besides the prescribed Offices, to "provide for further buildings (to be afterwards appropriated as the Government may determine) to such an extent as may be consistent with proper open spaces and thoroughfares;" i.e. I suppose, lighting-courts and streets,—not gardens, or spaces *only* for ornament or architectural effect (which, in fact, are commonly only for a crotchet, i.e. the reproduction or mimicry of

some effect that has struck the author at another site, to which, and not to this, it was natural and proper). But, if this be the meaning, very many of the plans in this list are non-competitors. Observe, too, that as we have the word of the Westminster Palace architect himself, that he designed the north-west part of his work to be seen from an enclosed court, *smaller* than the present Palace-yard, there could be no pretext for sacrificing any portion of the red-bounded ground in that direction, as nearly all the designers do to a great extent.

NO. OF DESIGNERS.	BRIDGES.	NEW DESIGNS.	STYLE.	BUILDINGS RETAINED.	MOTTO OR MARK.
16	C. W. V. Ho. ....	2	Perc. obl. ....	Wh. and Tr. ....	Light, Air, Convenience.
17	C. W. V. Ho. ....	3	Percentage ....	Wh. partly ....	Z. B.
19	Not shown ....	0	Antique ....	Wh. ....	Honour abut Artes.
21	P. only ....	9 to 11	Percentage ....	Wh. Tr. PC. BC. Co. FL. ....	Confido, conquesco.
22	W. Ho. ....	6	Do. oblique ....	Wh. Tr. partly ....	Only I.
24	Hu. W. Ho. ....	2 or 3	Perc. ....	Wh. ....	Baphia.
25	P. only ....	4 to 6	Do. obl. ....	None ....	Labor omnia vincit.
29	W. Ho. ....	6	Do. do. ....	Wh. Tr. PC. BC. ....	Circum tecta.
32	Not shown ....	7	Perc. ....	Wh. Tr. PC. ....	Laboro et oro.
33	Hu. W. Ho. ....	7	Do. ....	Wh. Tr. PC. ....	Salerno on Readiness.
34	C. W. Ho. ....	7	Do. ....	Wh. perhaps ....	Au bon Droit.
36	W. Ho. ....	5	Do. obl. ....	Wh. SP. ....	Industria.
37	Not shown ....	3	Perc. ....	Wh. perhaps ....	Populus, &c.
40	W. Ho. ....	10	Do. ....	Wh. PC. ....	Habiles.
44	Hu. W. Ho. ....	7	Do. ....	Wh. PC. ....	Pro grege.
47	P. Ho. ....	6	Perc. obl. ....	Wh. Tr. ....	L'Esperance.
50	Hu. P. ....	6	Do. obl. circ. ....	Wh. ....	No corridors.
51	C. (oblique) H. ....	5	Antique ....	Wh. ....	Urban.
56	W. Ho. ....	2	Perc. ....	Wh. ....	Ancora confidenti.
57	W. Ho. ....	3	Do. circ. ....	Wh. ....	Westminster.
61	P. only ....	1	Perc. ....	None ....	Anglo-Saxon.
62	P. Ho. ....	2	Do. ....	Wh. Tr. PC. FL. Co. ....	God save the Queen.
64	Hu. W. Ho. ....	3 or 4	Do. obl. ....	Wh. ....	Well considered.
71	P. only ....	7	Do. obl. ....	Wh. ....	A silver star.
72	P. Ho. ....	3 or 4	Antique ....	None ....	Victoria and Albert.
74	P. only ....	4	Perc. ....	Wh. ....	Te hoc Spect. mea.
75	P. only ....	7	Ant. but obl. ....	Wh. ....	Grande certamen.
78	Not shown ....	6	Antique ....	Wh. ....	Hoc propono.
79	P. only ....	7	Perc. ....	None ....	S. P. Q.
80	P. only ....	5 or 6	Do. obl. circ. ....	Wh. Tr. PC. Co. FL. ....	Omnia vincit Labor.
81	Not shown ....	7	Semi-antique ....	Wh. part of Tr. ....	Idem Pateras mediusq. Belli.
83	W. Ho. ....	11	Perc. ....	Wh. Tr. ....	The British Forum.
86	W. Ho. ....	1 to 3	Do. obl. ....	Tr. SP. ....	Rever. Proposui Vir.
87	C. P. Ho. ....	7	Antique ....	None ....	Palmyra.
88	W. Ho. ....	3 or 4	Perc. ....	Wh. ....	Vitam excolere per Artes.
89	Not shown ....	1 or 2	Do. ....	Wh. ....	Anglo longus, Vita brevis.
94	C. and V. ....	4 or 5	Do. ....	Wh. Tr. ....	Utilitas.
96	C. Foot W. Ho. ....	3 to 5	Do. ....	Wh. Tr. ....	Pensez à bien.
97	P. and V. ....	3	Do. obl. ....	Wh. Tr. ....	England expects, &c.
98	Hu. W. Ho. ....	7	Antique ....	Wh. Tr. PC. Co. FL. ....	A cypher.
102	C. P. Ho. ....	1 or 2	Perc. obl. ....	Wh. Tr. PC. BC. ....	Detur digniori.
103	Antique ....	5	Perc. ....	Wh. ....	E lascivis Speranza.
104	C. W. Ho. ....	5	Perc. ....	Wh. ....	Pax.
107	Hu. W. Ho. ....	2 or 3	Do. obl. ....	Wh. ....	Erat Justitia.
109	C. W. Ho. ....	1 or 2	Perc. ....	Wh. Tr. ....	Orlando on Competing.
110	W. P. or W. Ho. ....	4	Do. obl. circ. ....	Wh. ....	For my Country.
112	Hu. P. or Foot Ho. ....	6	Semi-antique ....	Wh. ....	Omnium.
113	C. W. Foot Ho. ....	4	Perc. obl. ....	Wh. ....	Mens agitat molem.
115	Not shown ....	3	Perc. ....	None ....	Vast Regius.
116	W. Ho. ....	1 to 3	Wh. circ. ....	Wh. Tr. PC. FL. Co. ....	Honore on native Art.
119	P. only ....	2 or 3	Do. obl. circ. ....	Wh. Tr. PC. FL. Co. ....	Tempus defuit.
127	P. only ....	1 to 3	Do. obl. ....	Wh. Tr. PC. FL. Co. ....	Not in vain.
128	C. W. Ho. ....	2	Semi-antique ....	Wh. Tr. ....	Confido.
129	C. W. Ho. ....	Many.	Medieval ....	None ....	Avallants cours rien impossible.
130	C. W. Ho. ....	7 or 8	Ant. but obl. ....	Wh. Tr. PC. BC. ....	La chère Reine.
131	Not shown ....	3	Perc. ....	Wh. Tr. PC. ....	Je le tiens.
133	C. P. ....	4 to 10	Antique ....	Wh. ....	I know of but one Art.
135	C. and V. ....	1 or 2	Perc. obl. ....	Wh. Tr. PC. FL. Co. ....	Palman qui meruit ferat.
138	C. Ho. ....	9	Do. and circ. ....	None ....	Rome was not built in a Day.
139	Hu. P. V. ....	4 or 5	Do. do. do. ....	Wh. Tr. PC. FL. Co. ....	Probitate.
140	P. only ....	7 or 8	Semi-antique ....	None ....	Cynus.
141	W. Ho. ....	7 or 8	Perc. ....	Wh. ....	Per temer. nec timide.
142	W. Ho. ....	7 or 8	Perc. ....	None ....	Le Travail est un Trésor.
143	P. only ....	6 or 7	Ant. but obl. ....	Wh. Tr. PC. FL. Co. ....	To remain great, &c.
144	Not shown ....	4 or 5	Perc. obl. ....	Wh. perhaps ....	1 aristocras invenit, &c.
145	Hu. P. W. Ho. ....	1 or 2	Wh. Tr. ....	Wh. Tr. PC. FL. Co. ....	Materiam superabat Opus.
147	Not shown ....	3 or 4	Do. obl. circ. ....	None ....	England expects, &c.
152	Not shown ....	3 or 4	Perc. ....	Wh. Tr. PC. BC. ....	Pro Regni et Patria.
153	P. only ....	1 or 2	Do. obl. ....	None ....	Cincinnati.
154	C. Foot W. V. Ho. ....	1 or 2	Do. circ. ....	Wh. Tr. PC. ....	God save the Queen.
157	P. only ....	2 or 3	Perc. ....	Wh. Tr. ....	Labor omnia vincit.
159	Hu. P. ....	1 or 2	Do. ....	Wh. Tr. PC. ....	Palman qui meruit ferat.
160	P. Ho. ....	4	Do. ....	Wh. Tr. ....	Sic volo.
161	C. W. Ho. ....	1 or 2	Do. ....	None ....	Omega.
164	C. and V. ....	2	Do. circ. ....	Wh. ....	Rome was not built in a Day.
167	Hu. W. Ho. ....	2 or 3	Do. obl. ....	Wh. Tr. ....	Cede Deo.
168	W. Ho. ....	2 to 4	Do. and circ. ....	Wh. Tr. PC. SP. ....	Requith.
169	P. W. Ho. ....	1 or 2	Perc. ....	Wh. Tr. PC. FL. ....	We will endeavour.
173	P. Ho. ....	2 or 3	Do. obl. ....	Wh. perhaps ....	Sic mihi videtur.
174	P. P. W. Ho. ....	3 to 5	Perc. ....	Wh. ....	A cypher.
175	P. only ....	9	Do. ....	Wh. Tr. PC. BC. ....	Flavia.
176	W. Ho. ....	1 to 3	Do. obl. ....	Wh. Tr. ....	Nelasse oblige.
178	P. only ....	2 to 5	Do. obl. ....	Wh. perhaps ....	Mai mai pensa dei dettagli, &c.
179	W. or P. P. ....	1 or 2	Perc. ....	None ....	Vincit veritas.
180	C. W. Ho. ....	8	Do. obl. ....	Wh. Tr. perhaps ....	Tentavi quod non possem.
181	P. Ho. ....	2 to 4	Do. ....	Wh. Tr. PC. FL. BC. ....	Practical Improvements.
182	Various oblique ....	Many.	Medieval ....	Wh. Tr. PC. FL. BC. ....	Enfilade, A.
183	Do. with Foot W. ....	Many.	Medieval ....	Wh. ....	Enfilade, B.
184	P. Ho. ....	1 or 2	Perc. ....	Wh. Tr. PC. SP. BC. ....	Palmyra.
185	C. Foot W. V. Ho. ....	15 to 16	Semi-antique ....	Wh. ....	Pervius orbis.
187	Hu. W. ....	4	Perc. ....	Wh. ....	Poor Jack.
189	Hu. W. Ho. ....	Many.	Do. obl. ....	Wh. PC. Co. ....	How to do it.
191	Not shown ....	3	Perc. ....	None ....	Dum en chi.
192	P. only ....	8 to 10	Do. ....	Wh. PC. ....	Rule Britannia.
193	V. ....	2	Do. ....	Wh. Tr. PC. FL. Co. ....	Dum spiro spero.
194	P. Ho. ....	3 or 4	Do. ....	Wh. Tr. PC. ....	Non quo, sed quomodo.
198	P. and V. ....	5 or 6	Do. obl. ....	None ....	De faciem et locum.
202	Hu. P. Ho. ....	3 or 4	Perc. circ. ....	Wh. Tr. BC. ....	Omnia Eternitate.
203	Hu. W. Ho. ....	5 or 6	Antique ....	Wh. Tr. PC. FL. Co. ....	A cross in a ring.
205	W. Ho. ....	1 to 3	Antique ....	None ....	To the greatest Queen.
207	P. only ....	1	Do. but circ. ....	Wh. Tr. PC. FL. Co. ....	Crit. for. Ac.
208	Hu. W. ....	3 or 4	Perc. circ. ....	Wh. perhaps ....	Hoc solus fecit.
209	W. Ho. ....	5 or 6	Perc. obl. ....	Wh. ....	Four circles, &c.
210	Do. Another with P. ....	7	Antique ....	Wh. Tr. ....	Devin.
211	P. Ho. ....	4 to 7	Perc. obl. ....	Wh. ....	Hic patet ingenis campus.
213	C. P. Ho. ....	3	Perc. ....	Wh. ....	Postulata.
215	C. W. Ho. ....	2	Do. obl. ....	None ....	Nemo.
216	P. only ....	10 to 12	Medieval ....	Wh. Tr. PC. SP. BC. ....	Fides.

\* This noble vindication of English art is the only design Gothic in plan as well as detail.



TABLE II.  
Obviously Non-competing Block Plans.

No. of DESIGN.	BRIDGES.	NEW DESIGNS.	STYLE.	MOTTO OR MARK.
6	Hu. W. Ho. ....	2	Percentage .....	Bramante.
8	P. only .....	3	Do. ....	A circle, triangle and square.
9	W. ....	1 or 2	Do. ....	The Idea of March are come.
12	C. P. Ho. ....	1 or 2	Do. ....	A. C.
20	Not shown .....	2	Do. ....	Corona.
41	P. W. ....	2	Do. ....	Pro Regina et Patria semper.
45	C. W. Ho. ....	2	Do. ....	Le Beau d'érive du Vrai, &c.
58	Hu. W. Ho. ....	2	Do. obl. ....	Arcana Imperii.
73	C. Ho. ....	2	Do. obl. ....	Deus atque jus.
75	P. only .....	2	Do. obl. ....	Delta 27.
99	Hu. C. W. Ho. ....	2	Do. obl. ....	Vivus Regina.
101	C. P. Ho. ....	3 or 4	Antique .....	Devant si je puis.
134	P. Ho. ....	2 or 3	Perce. obl. ....	Ut apes geometriam.
146	P. Ho. ....	2 to 4	Perce. ....	Sassanagh go bragh.
150	P. V. ....	11 or 12	Perce. ....	Pro Victoria Eterna Gloria.
151	W. ....	2	Do. obl. ....	Josephus.
155	C. V. ....	1 or 2	Do. ....	The Bell of Westminster.
158	Incorrectly drawn .....	4 to 6	Do. ....	L'Union est la Force.
162	C. P. Ho. ....	1	Do. ....	V. V. V.
163	Incorrectly drawn .....	1	Do. ....	Pariter Pax Bello.
165	C. W. Ho. ....	3 to 5	Do. ....	Utile dulci.
166	Hu. P. or W. Ho. ....	1	Do. ....	Il genio cres, &c.
170	P. Ho. ....	4	Do. ....	Viro in Spe.
171	Not shown .....	1	Do. ....	Laudis publice avidus.
172	W. ....	1 or 2	Do. obl. ....	Valeat quantum.
177	P. ....	10 to 12	Do. obl. ....	Blessed are those, &c.
183	P. Ho. ....	6 to 8	Do. obl. ....	Nationale.
186	Not shown .....	1 to 4	Do. obl. ....	Corso.
188	C. P. ....	4 to 7	Do. obl. ....	Dulcius ex speris.
189	Hu. P. foot V. ....	2 to 4	Perce. ....	Vivus Regina.
195	W. ....	4 to 7	Do. ....	Voltaire on the English.
196	P. only .....	2 to 4	Do. ....	May God direct us.
199	W. ....	4 to 7	Do. obl. ....	Corona.
201	Misdirected .....	7	Do. ....	Labor ipse voluntas.
204	P. only .....	4 or 5	Do. ....	Nemo.
206	Do. ....	2	Do. ....	Alit fert aquila.
211	Not shown .....	2	Do. ....	No motto.
214	P. Ho. ....	2	Do. ....	
217	W. ....	8	Do. obl. ....	
218	Double oblique br. ....	1	Do. obl. ....	

Many of these are fine examples of the modern mode of planning, and the first fourteen accompany elaborately-drawn projects for the two particular buildings, of which some, as 6 and 20, are respectable Renaissance; and even, as 134, attempt higher things; but I must defer all comment on other than the block plans, having already trespassed on your space.

E. L. GARBETT.

#### THE MANCHESTER EXHIBITION.

THE Art-Treasures Exhibition has scarcely taken such hold on the popular mind yet as will ensure success for it in a pecuniary point of view. Gradually, however, we have no doubt the importance and value of the collection will become known far and wide, excursion trains will run, and the whole of England will supply visitors. At all events, a fine opportunity will be thrown away if it be not so. The London guests, on the occasion of the opening, complain greatly of utter inattention on the part of the committee, who appear on that day not to have thought of anything or any persons but themselves. Even men invited as holding official positions, and who went down at much personal inconvenience, had no reception, and were, in fact, ignored. One result of this is, a considerable chorus of dissatisfaction at London dinner tables, which has its effect.

The collection is now getting into good order, but several important departments remain without an available catalogue. It is very desirable that all the works should be labelled, so that their value and interest may be readily seen. The Bernal collection, the Soulaiges collection, the wonders gathered together in the cases on the south side of the nave, are at present little better than sealed books to the multitude. Amongst the departments less studied than it should be is the collection of engravings exhibited in the western gallery of the building. This is probably the finest ever made to illustrate the history and progress of the art, from the middle of the fifteenth century, when Tomaso Finigerra was led to take an impression by means of a black pigment from the niello work on which he was engaged, and so to originate the art, down to the admirable engravings of our own day. "At the precise period when the new art was discovered," says the catalogue, "Venice was the great centre of commerce as between the East and the West; and not only did the Italian artists seek there purchasers for their productions, but the German masters also frequented the market of that city, and the earliest examples of the engraver, which either bear the date of the year 1466 or which are

undated, were apparently the work, the former of Italians and the latter of Germans. About this time, the art was applied to the production of the Tarocchi, a description of playing-cards, at Venice, but the name of the artist is not now accurately known."

For the arrangement of this collection in an emergency, the committee owe thanks to Mr. Dominic Colnaghi.

In another part of the west gallery will be found some early wood engravings of remarkable size, made up of blocks of wood, in one case, 18 inches by 13 inches each. There is an excellent map-view of Venice (1500), many feet square, besides the "Passage of the Red Sea," after Titian (1549), to say nothing of the better-known "Arch of Maximilian," by Albert Durer and Burghmair (1515), the sheets of which are put together and make a whole 10 feet by 9 feet.

We have been asked to say again, as some misconception prevails, that the decorations of the two side aisles, used for the collection of ancient pictures and the collection of modern pictures, were executed by Messrs. Wilson, Little, and Henshaw, of Manchester. They commenced their work in December, 1856, and finished their several contracts early in April, using 44,000 square yards of calico, the same quantity of lining paper, 10,000 square yards of wall paper, and three-quarters of a ton of copper and zinc tacks. These figures will give some idea of the large amount of work and materials employed upon the whole building. Messrs. Wilson, went over the space they decorated three times, and consequently covered, in round numbers, nearly thirty acres of wall surface.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

##### PRESENTATION OF MEDALS.

At a meeting held May 18, 1857, the Earl De Grey, president, in the chair, after some preliminary proceedings,

The chairman said that it would now be his agreeable duty to present the testimonials of approbation which the council had thought proper to award. Calling, in the first place, upon Mr. Tarn, his lordship presented to that gentleman the medal of the Institute, for his essay on the "Application of Mathematical Science in Architectural Practice," with well-merited commendation.

To Mr. Green, the Soane medallion, was next presented, for his design for a Metropolitan Hotel; his lordship observing that he be-

lieved the public would be deeply indebted to any one who could improve our hotels.

Another medal was presented to Mr. Parkin, for his design for the same subject; and a present in books to Mr. Underwood, for his Student's Sketches; the chairman observing on the importance of sketching, as the commencement and foundation of art.

The chairman then proceeded to present the Royal gold medal to Mr. Owen Jones. In doing so, he expressed the pleasure which he felt in attending on occasions like the present. Her Majesty's medal was a gift which the Institute should be proud of, and he had had much gratification in presenting it on former occasions. He felt bound to apologise to Mr. Owen Jones and the meeting for his absence when it had been originally fixed that the medals should be presented. The impartiality of the council in the award of this medal was shown by the fact that it had not been uniformly awarded to members of the Institute, but on some occasions to architects of other countries, entirely unconnected with the Institute, but of European reputation. But he had now the greatest possible pride in presenting the Royal gold medal to one of our own countrymen. It would be almost an act of nonsense on his part to state the grounds upon which Mr. Owen Jones had been selected as the recipient of this medal. He was known by his works; works of immense value, which might not have been so productive to himself as to their publishers,—but which had certainly been of great service to his profession. These works had not fallen within the reach of every one, but in the Crystal Palace, which was accessible to all,—whether connected with art, science, or manufactures,—the genius of Mr. Owen Jones was manifestly displayed. He had the greatest possible pleasure in presenting to that gentleman a testimonial of the respect and esteem of all his brethren in the noble and honourable profession of which he was so distinguished a member.

Mr. Owen Jones briefly, but feelingly, acknowledged the award. He deeply felt the proud position in which he was placed, and the very kind way in which the noble chairman had referred to him. It was one of the great privileges of an artist, that if he had an earnest desire to advance his profession, his efforts would find him friends. He had been sustained under many trials by numbers of friends, and ultimately they had given him that reward which it was now his privilege to receive. The royal gold medal was one which every architect might wear with pride; given as it was by the sovereign, guided by the profession at large. He himself regarded it as an honour which could not be too highly appreciated. He had been placed in his present position by the gentlemen around him; to many of whom he was known only by such efforts as he had made to elevate their profession; and he felt that he must sustain the honour of the gallant corps of those who had gone before, and those who might follow him, in the same distinguished position.

Mr. Tite, M.P. then addressed the chairman in reference to the gold medal of Sir William Chambers, which his friends had resolved to present to Mr. Pennethorne. The compliment which it was proposed to pay that gentleman was as well deserved as it was unusual. For many years there had been an office under the Government, similar to that which Mr. Pennethorne now held. Formerly the officer was called the surveyor-general, and in that capacity Inigo Jones rebuilt the ancient Somerset House, being paid at the rate of 8s. 4d. a day, with an allowance of 40l. a year for house-rent, and a clerk. His design was one of peculiar simplicity and elegance, and had been repeated in the Strand front of the same building, when reconstructed by Sir William Chambers. It had also been copied at Oxford, and in the Commercial Sale-rooms, Mincing-lane. Sir William Chambers, the favourite architect of George III. had left Somerset House in an unfinished state; but the Government had entrusted its completion to a man of judgment, taste, and skill; and the work had been most successfully carried out. Mr. Pennethorne, who was a relative of Mr. Nash, came to London in the year 1820. Mr. Nash had then succeeded Mr. James Wyatt, who had been surveyor-general, and



although Mr. Nash's style of architecture was anything but bold, his style of dealing with the improvements of the metropolis was so, and deserved the gratitude of this generation. Mr. Nash had the judgment to appreciate the good taste of his young friend, Mr. Pennethorne, and many of his designs were carried through by the youthful ardour of that gentleman. The proper application of the large sums necessary for the purchase of property for great improvements was an important part of the business of an architect; and Mr. Pennethorne had shown great ability in this branch of his duties. The great street from the London Docks to Spitalfields, Victoria-park, and Battersea-park, had all fallen into the hands of Mr. Pennethorne. The cost of these had been very considerable, but the money had been applied usefully, economically, gracefully, and elegantly. He had never seen a design by that gentleman which did not deserve the meed of praise. Mr. Tite proceeded to state that the present tribute to Mr. Pennethorne (originating with Professor Donaldson), had proceeded from the leading members of the profession, no less than seventy-four of whom had signed the letter to him announcing their intention; and in presenting this medal they wished to record their sense of his ability as an architect, and his high qualities as a gentleman and a man.

Professor Cockerell considered the tribute to Mr. Pennethorne a mere measure of justice. He himself belonged, if not to the same family, to the same school as Mr. Pennethorne; as Sir Robert Taylor was the master both of Nash and of his (Professor Cockerell's) father; and he rejoiced to see the merit of that school acknowledged. With all his defects, Nash was a courageous little man, and it was a matter of regret that no proper biography of him had appeared. He concluded with a warm eulogium of Mr. Pennethorne.

Mr. Mayhew said that, as the district surveyor of St. James's since 1832, he could not refrain from bearing testimony to the science and knowledge of Mr. Pennethorne, especially as displayed in the Museum of Practical Geology, in Jernyn-street.

The chairman expressed his gratification in being the medium of presenting the medal. So long ago as 1827, he had been brought into communication with Mr. Nash, during the erection of the United Service Club. As a part of Mr. Nash's great plan of improvements, the exterior design of that club was left entirely to that architect, but, as chairman of the Building Committee, his lordship had differed with Mr. Nash as to the effect of the staircase proposed by him, and, with the greatest good temper and equanimity, Mr. Nash adopted the suggestion which he had ventured to make. He concurred in all the praise which had been bestowed on Mr. Pennethorne, and had lately been very much struck with the beauty of execution of the new western front of Somerset House. The medal had been awarded by Mr. Pennethorne's brethren, with a total disregard of professional jealousy, and he repeated that he had the greatest pleasure in presenting it.

Mr. Pennethorne begged most sincerely to thank the meeting for this compliment. Prevented, as he was by domestic circumstances, from associating much with his professional brethren, he had been perfectly astonished to find that he was held in their esteem. Passing over the complimentary remarks upon himself, he wished to express his gratification at the remarks of the chairman, Mr. Tite, and Mr. Cockerell, with reference to Mr. Nash. There had been much difference of opinion with regard to the merit of that architect, and it was particularly agreeable to him, after a lapse of thirty years, to hear his works spoken of as they deserved. He was thankful to their noble chairman for the kind manner in which he had presented this medal, and in reference to the Museum of Geology (which his friend Mr. Mayhew had mentioned) he might state that many alterations in the entrance-front of that building had been made from the suggestions of his lordship, who had been consulted on the subject by the Earl of Carlisle. In the west front of Somerset House he had felt bound to carry out strictly the plan which Sir William Chambers might have been supposed to have adopted.

It might be doubtful, in the present age of competition, whether his official position would be maintained, or whether all the great public improvements would not hereafter be carried out by the Metropolitan Board of Works and their able architect. He highly esteemed the expressions of good-will from his friend Mr. Tite. There was no man whom he had more frequently met adversely, but none with whom he had had less difficulty in coming to conclusions. Years ago Professor Cockerell was returning from abroad, when he (Mr. Pennethorne) was going thither as a student. By the advice of Mr. Nash, he went to Mr. Cockerell, and it was by the advice of the latter that he had studied the works of the modern rather than the ancient architects of Italy. On this ground, therefore, he should always feel a debt of gratitude to Mr. Cockerell. To Professor Donaldson he must also feel grateful, as the originator of this tribute,—a fact of which he had not before been aware; and generally he wished to express his thanks to the Institute, the members present, and to the chairman, whose kind manner in presenting the medal had added much to the honour conferred upon him.

Mr. M. Digby Wyatt then read a paper on the Sacred Grotto of St. Benedict at Subiaco and its Monastic Institutions, which was illustrated by some interesting drawings, and to which we may refer hereafter.

#### EMPLOYMENT OF CONCRETE IN WORKS OF ENGINEERING AND ARCHITECTURE. INSTITUTION OF CIVIL ENGINEERS.

At the meeting on May 5th, Mr. Robert Stephenson, M.P., President, in the chair, the paper read was "On the Employment of Rubble Bêton, or Concrete, in Works of Engineering and Architecture," by Mr. Rennie, F.R.S.

The author commenced by succinctly tracing the history of the art of construction, or building, from the earliest periods, as exhibited by the architectural remains in Egypt, Assyria, Greece, Etruria, Rome, and China, and in South America;—thence to the comparatively more recent structures of the Continent and of this country, whose condition evidenced the care and attention devoted to the selection of materials, and the due proportioning and mixing of the mortars and cements.

The more immediate object of the paper was to introduce the system advocated by Monsieur Garier, the manufacturer of the Vassy cement, of building bridges and other similar structures with rubble Bêton, or concrete, in the prosecution of which he had been very successful. After enumerating a long list of structures executed in this material, in all parts of France and Algeria, the author described more minutely the construction of the Pont de l'Alma, traversing the Seine immediately adjoining the lower end of the building of the Annex, and which being in progress during the period of the International Exhibition of 1855, had directed his attention to the subject.

The Pont de l'Alma consisted of three elliptical arches, (*l'arc de pavier*), whose spans were, for the two side arches 38.50 mètres (126.25 feet each), and the middle arch 43 mètres (141.40 feet), the height or conjugate axis of the two side arches was 7.70 mètres (25.25 feet), and the middle arch 8.60 mètres (28.2 feet). The thickness of the arches at the centres was 1.50 mètre (4.92 feet); the breadth between the faces of the arches was 10.30 mètres (33.78 feet), and the total length of the bridge was 139.69 mètres (458.18 feet).

The peculiarity in this bridge was the mode of construction, the materials employed being, for the hearing, or body of the structure, rubble Bêton, (*pierre de maçon*), concreted by Vassy cement. The stones of the intrados of the arches were roughly squared and laid as voussoirs, whilst the rest of the structure consisted entirely of rough stones, as they left the quarry, being only well washed with water to deprive them of any earthy particles adhering to their surface, which would have prevented the adhesion of the cement, in which they were well bedded, and which was poured in as grouting to fill up all the interstices. The outer faces of the bridge and of the piers were built in cut stone, very carefully toolled and finished, like all the other bridges in the French capital.

The bridge only occupied nine months in construction, and would have been finished sooner but for a accident which occurred to one of the piers, during a heavy flood. This injury was started to have been repaired, by injecting a considerable quantity of Portland cement, which had consolidated the whole structure.

The method employed for striking the centres was

simple and ingenious, and had been previously tested in bridges of considerable span. It consisted in supporting the centres on several cylinders filled with dry sand, which was permitted to flow very gradually through an aperture in the bottom of each, and thus to lower the pistons and centres, without risk of the inequality of motion arising from slackening the wedges as in the ordinary system.

According to the official report of the meeting, "the author then noticed the labours of British engineers, architects, and others, introducing the use of concrete, citing the names of Smeaton, Semple, Higgins, Barker, Frost, White, Walker, Rennie, Smirke, Brunel, and Pasley, and the Essay by Godwin, on the subject. Their recorded labours in that branch commenced in 1774, when concrete was first noticed in the works of Smeaton, who gave the proportions which had been found practically the best, by Mr. Foster Nicholl. Copies were then given of the letter of Mr. T. Hardwick, and of the Report, in January, 1813, by Messrs. Rennie, Lewis, Cockerell, and Browne, advising its use for the foundations of the Penitentiary; thus clearing away the erroneous impression of Mr. (now Sir Robert) Smirke having introduced concrete into that building, upon which he was not consulted until December 1817, three years subsequently to the Report, which had in the mean time been acted upon."

Several specimens were contributed by members taking part in the discussion. A cube of 12 inches of concrete, composed of one part of Dorking lime, with eleven parts of sand and washed shingle, weighing 136 lbs.—of the same materials and density as the river wall, 1,200 feet in length and 25 feet in height, in front of the new works of the Chelsea Water Company, at Seething Wells, near Kingston, showed that its density was very nearly equal to that of Brandy Fall stone, a cubic foot of which weighed 138 lbs.

Specimens were also shown of the concrete composed of White's Portland cement and shingle, forming the massive blocks used in building the piers and harbour works at Dover, Alderney, Cherbourg, and other places, demonstrating the great solidity attained by these masses, which enabled very extensive works to be constructed with great rapidity.

On the 12th inst. in commencing the discussion upon Mr. Rennie's paper, the author gave some further details of works which had been alluded to, and particularly of the Pont de l'Alma. It was stated, that the material composing the arches was found originally to dry so irregularly, as to cause cracks in several places. This was first remedied by forming large detached blocks of the concrete *in situ* and then cementing them together. But a further improvement was made. It was found that, in making an arch of nearly 5 feet in thickness, there was unequal expansion and contraction of the materials.

To obviate this, a ring of small stones set in cement was first laid, on which the coating of Vassy cement concrete was spread. In fact, the arch was built in two rings. As regarded expense, it had been said, that the Pont de l'Alma had cost 40,000*l.* but it was believed that 50,000*l.* was more nearly correct. Now a bridge built at Liège, of dressed stone, of 550 feet in length and 30 feet in width, or 80 feet longer, and half the width of the Alma bridge, had cost only 26,000*l.* This did not show any great economy in cost, in favour of the use of concrete; but, as regarded time, the one was built in nine months, as stated in the paper, whereas the Liège bridge occupied three years in its erection.

It was presumed that the paper was to be taken as a history of rubble and concrete up to a certain date, for it did not convey any idea of the extent of its use at the present time. There were now existing, in various parts of Great Britain, some remarkable works in rubble masonry, which had not been alluded to, amongst which might be mentioned the Liverpool and the Birkenhead Docks. It was thought, that working in rubble had been greatly neglected, and that engineers had gone to the opposite extreme, of building in expensive ashlar. But what was to be most carefully guarded against was the adoption of a hybrid style of masonry, consisting partly of ashlar and partly of rubble. This was looked upon as a dangerous system, as the unequal settling was almost sure to cause the ashlar facing to split, or part from the rubble backing.

It was remarked, as a generally received opinion, that concrete made with carefully washed gravel and sand was preferable to that which contained an admixture of loam. Now, in some instances this had been proved not to be the case, for loam had been used with positive advantage. If expensive processes of making concrete were adopted, it would be better to resort at once to rubble work.

To this it was replied, that it had been shown, that the composition of the sand ought to bear some relation to the lime with which it was mixed, and that under certain circumstances the presence of marl in the sand was necessary. A careful examination of the treatises on the subject of rubble masonry



shown that little was known as to the weight it would sustain or the duty it would perform. It was of great importance to ascertain the resisting powers of rubble, composed of different materials, and set in different limes and cements; and also the composition and action of the ingredients which entered into the concrete or which were mixed up with the rubble.

A distinction ought to be drawn between concrete, or *béton*, and rubble work. The former was generally used for foundations, or for making an apron between the piers of a bridge, to prevent the evil effects of scour, and also in breakwaters, where large masses of that material were thrown in. In rubble work, the stone formed about three-fourths, or five-sixths, of the whole mass, whilst, in concrete, the proportion was very much less. In this respect the material of ancient buildings occupied a place between the modern concrete and rubble, for in the works of the Romans the stone formed about one-third of the whole mass. The *béton* used in Russia had been subjected to a pressure of 5 tons per square foot. It was made of a particular clay, burnt according to the formula of Vicat, and thus a perfect artificial hydraulic lime had been formed, nearly equal to natural lime.

A description was given of the system followed by the late Mr. Walker and Captain Huddart, in using washed gravel for the backing of quay walls at the East and West India Docks and other places, by which great solidity was attained. Mr. John Rennie subsequently introduced the use of lime with the gravel, forming concrete. Mr. James Walker had used cement concrete very extensively in marine works at Dover, Alderney, and other places, with great success. The concrete used at the two former places was composed of Portland cement mixed with shingle, in the proportions of one part of cement to ten parts of shingle, moulded into blocks varying from 6 to 10 tons in weight.

The general dimensions of that part of the breakwater so constructed were,—medium width, 90 feet, composed of a hearting of cement concrete blocks 60 feet in breadth, protected by range work of blocks of Roach Portland stone, faced with granite, of an average thickness of 15 feet on each side. The foundation of the wall was 45 feet below low water of spring tides, and the top rose to 20 feet above that mark, making a total height of 65 feet.

It had been observed, that the quality of the Portland cement was not always uniform, and that expansion or disintegration of the blocks had taken place two or three months after they were made and before they were bedded in position, which operation was generally delayed for six or nine months, to allow them to become thoroughly dry. The manufacture of Portland cement was evidently one which required much care, and was not free from risk, though its general employment was satisfactory, and its use was daily extending for all works of civil engineering and architecture.

To this it was replied, that the cases of expansion which had been noticed probably arose from the presence of too much lime in the cement,—the result of careless or improper manufacture, but such results had not been observed in cement supplied by good manufacturers. The lime so found in a free state, and not well incorporated with the other ingredients, would undergo the action of slaking by the atmosphere, and still more rapidly by sea water, and disintegration would ensue.

The manufacture of this cement was essentially one of confidence, and such defects as those mentioned rarely, if ever, occurred with the produce of experienced manufacturers.

With regard to the works at Dover it was stated, that though nearly half a million cubic feet of concrete in blocks were now laid annually, the proportion of breakage scarcely exceeded one per cent.

The cost of the concrete blocks was assumed to be about one-half of the cost of the stone walls which had originally been intended to have been constructed. The large cubic contents and consequent weight of these blocks, the uniformity of their size, and their close contact, in the work, were relied on as prominent advantages in their use.

The French engineers had used concrete blocks, made of lime and artificial pozzolana, at Marseilles, Rochefort, Algiers, and Cherbourg. After a few years' exposure to the sea water, these blocks had disintegrated and fallen to pieces,—a result ascribed by M. Vicat to the presence of magnesia in the sea water, which acted injuriously on the lime. It was not without hesitation, therefore, that some years later they had commenced the employment of Portland cement for their *béton* works; but the results ascertained in the interval, as to its durability when exposed to the action of sea water, appeared to have justified the present general adoption of that material, even to the extent of using the blocks in external walls, without the protection of stone casing.

The injection of Portland cement into the founda-

tions of the Pont de l'Alma was noticed as a method of forming *béton* under water, which, though allowable in exceptional cases, could not be recommended on the score of economy, as in the case in question a quantity of cement, costing not less than 1,500*l.* had been employed, one-third of which had, in all probability, been washed away by the current, and had never set at all.

At Alderney the depth of water was greater than at Dover, and there was abundance of stone, which was thrown in as "*pierre perdue*" to form the substratum, and from the depth of 12 feet below low water a vertical stone wall was brought up, backed by concrete blocks, to form the hearting.

Descriptions were given of the large blocks of concrete used at the new harbour works at Marseilles and at Algiers. They weighed upwards of 50 tons each, and were moulded close to the spot where they were to be used, and then thrown into the sea. At Algiers it was believed that considerable disintegration had taken place, as it was evident that large cavities existed in the work. When the sea was agitated, it was scarcely possible to walk on the mole, on account of the jets of water which were driven through the apertures with great velocity to considerable distances. The local engineers anticipated that these cavities would in time be closed by the accretions of shells, by which several had been already stopped; but this presumed that the disintegration of the blocks was not also progressing. It was questioned whether this disintegration had not arisen from the use of artificial instead of natural pozzolana.

Instances were adduced of the absolute overthrowing of walls, from the excessive expansion of the cement used; and even of a thin coating of the same kind of cement having expanded in the same remarkable degree. It was explained that this must have arisen from the admixture of an undue quantity of lime in the cement, an error not unfrequently fallen into by inexperienced manufacturers.

The new too general system of using a quantity of lime in the making of bricks was denounced as injurious, as the lime, when acted upon by water, expanded, split the bricks, and destroyed the work. An instance was adduced where a lighthouse had been pulled down entirely in consequence of this action.

It was a question whether rubble concrete was really either so effective or so cheap as good bricks and cement for the superstructure of a bridge, however good and applicable it might be for the foundations, to which it had been generally restricted in this country. In such positions it was excellent, and but for its use many hazardous works could scarcely have been executed.

#### COMPETITION DRAWINGS.

At the closing meeting of the Liverpool Architectural Society, alluded to in our last, the president, Mr. Huggins, made some observations on Competitions.

"The number and amount of the premiums in the great Government competition," he said, "should augur good to architecture, as being not only in themselves calculated to give an impulse to the study of the art, but by their example to shame committees from the insulting offers which, though not responded to, I should think, by any deserving the name of architect, are yet calculated to degrade the entire profession in the eyes of the public. But while, as an architect, I cannot but feel beholden to the Government for thus coming to the rescue, I question whether, if the evil alluded to were remedied, there would not still remain abuses sufficient to prevent any balance of good accruing to architecture. In proper hands, I know no means so potent to give new life and vigour to the art as public competition. Rightly conducted, no useful patronage, no royal charter, could do half so much for us. Some of the greatest achievements of art, you are aware, both in this country and on the continent, are amongst its fruits; and it is to me a matter of astonishment that any one should be seriously opposed to the system in the abstract. Carried on, however, as at present, the resulting evils, I fear, far outweigh the advantages. By far the greatest of these arises from the undue relative importance that, by the usual and obvious principle of decision, becomes attached to the mere manipulation and getting up of drawings, to which, if a competitor is to have any chance of success, he really must pay more attention than to the design itself. Conversing not long ago with a Liverpool architect on the subject of the Public Offices competition, I gathered from him that he was deterred from competing solely by consideration of the great expense it was necessary to go to for artists' assistance, in order to 'make up your mind,' said he, 'to spend 50*l.* for the getting up of the drawings, or you have no chance with those London men. I trust that the chief commissioner of public works

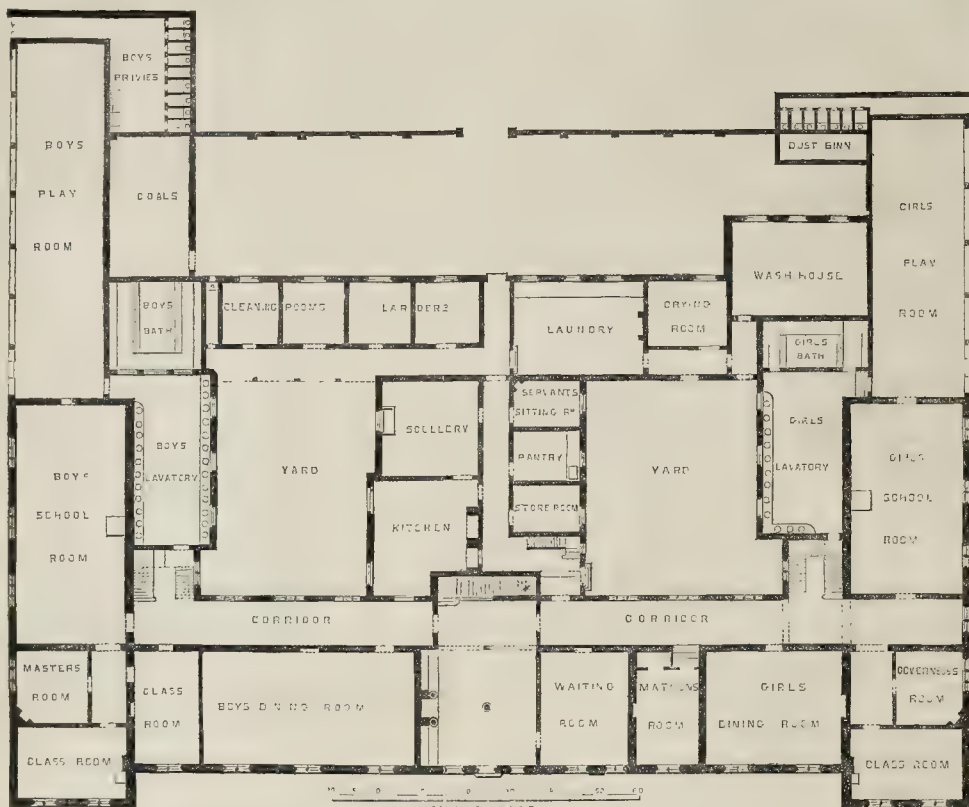
will take such measures for the decision of the competition in question, that both London men and provincial men who are trooping to aught else than merit in their designs will be disappointed; but the remark fully accorded with my own apprehensions from the experience of the past; and if rumours that have lately gone abroad be correct as to the expense that some competitors have incurred, he might have named a far larger sum than 50*l.* I believe that the nine-tenths of the competitions of the day, if the best design that had ever been conceived in this world, surpassing in every excellence the master works of all Greek, Medieval, or Italian genius, were submitted in hue, or geometrical shading only, the author disdaining to descend to the trickery of colossal perspectives, accidental shadows, and atmospheric effects, it would not have the least chance of being chosen. So certain, generally speaking, is the success of the largest and most dazzling set of drawings, that there is some little danger of architecture getting out of the hands of the architect altogether into those of the second or third rate water-colour artist, who, if he acquired a little knowledge of the orders of columns and the disorders of buttresses, just sufficient to enable him to steal decently, would stand on a better footing than the architect himself. One would suppose that the incompetency in committees that could bear such fruit as this, and which I believe is working much mischief to architecture and decreasing the system far more than dishonesty itself, the 'school-master' who has been so much abroad of late years would soon remove. Surely the faintest glimmer of intelligence would suffice to tell any one that the executed work can be no other than the better for the brilliant sky that bends over it and the fine ladies and gentlemen who gaze admiringly on it in the picture—a part of it which I suppose the wildest and blindest contractor would hardly undertake to execute. The design for a royal palace or town hall might be fully rendered by a merely architectural draughtsman, on a few penny sheets of paper, the cost of which is all the expense the designer should be compelled, or indeed allowed, to go to. Nay, if the tribunal were composed of men possessed of one spark of common sense and smatter of common honesty, an idea sent in by a working joiner, drawn on the back of a piece of sash paper, would be as certain of receiving fair consideration as would a glazed and gold-trimmed picture."

#### MICROSCOPICAL EXAMINATION OF THE METROPOLITAN WATER SUPPLY.

By order of the Board of Health, Dr. Hissall has made a report on this subject, which has been printed, and from which it appears that, even in winter, the way in which (what we may without much scientific impropriety call) vermin teem in the water which the Londoners—drink, we were going to say, but rather—don't drink, is still somewhat horridly, to water-drinkers especially; for, otherwise, it is rather a pleasant reflection to tea and coffee-drinkers, and even to beer-drinkers, we suppose, that the vermin are at all events acted—perhaps into wholesome, nutritive matter—who knows?—before it reaches their "scumming" lips. Revolting as the live animals are, however, they are not so injurious (at least when fairly boiled) as the dead raw organic matter on which these animals live, and which accumulates especially when these feeders on it are few. The New River water, which used to rank amongst the least objectionable of the metropolitan waters, at a time when filtering and purifying processes were less heeded or practised by any than they now are, by no means now holds its own place in relative superiority: it has the bad pre-eminence, in this report, of a display of dead organic debris, though with less numerous animals than in some other instances, but still "particularly abundant," also,—in comparison with the Chelsea, for instance (against which at one time we had occasionally to urge rather strong protests, it may be remembered, but) which is now at the head of the whole list in relative purity, and next to which are the West Middlesex, East London, and Kent waters. The living organic products were also rather numerous in the Grand Junction, but most numerous of all in the Southwark and Vauxhall, the Lambeth, New River, and Hampstead waters. A test of relative purity recommended, is simply to view the water in bulk beside an equal quantity of really pure water, the impure being always more or less tinged or coloured, in quantities such as a gillion and upwards.

PAINTED WINDOW IN GLASGOW CATHEDRAL.—A memorial window, the first of upwards of fifty to be put up, has been placed in the crypt, with an inscription to the memory of "Andrew Hamilton, Captain, 23rd Lancers, by his Wife and Daughters." It was designed by Professor Huder, of the Royal Academy, Dresden, and painted by Mr. Schreder, director of the manufactory at Meissen.





WELSH SCHOOLS, ASHFORD, MIDDLESEX: GROUND PLAN.

## WELSH SCHOOLS, ASHFORD, MIDDLESEX.

We illustrate, in our present number, by plan and view, the Welsh Schools which have been erected at Ashford, to lodge and educate 200 children, 130 boys and 70 girls, born in the metropolis, of Welsh parents. The institution was founded a century and a half ago, and has been hitherto localized in the Gray's-inn-road. The new buildings are erected on a site of thirteen acres, close to the Ashford station, on the South-Western Railway (Windsor branch). The outlay upon the buildings alone is about 15,000*l*. Mr. Henry Clutton, of St. James's, is the architect. Messrs. Hollands are the contractors; and it is expected that the institution will be ready for opening in the month of July next.

The building is faced with Kentish rag, with Whitty stone quoins. The dressings are of Coombdown Bath stone.

## THE VACANT AREA NEAR, AND WAY ROUND, ST. PAUL'S.

Ever since the "vacant area" has attracted public notice, and especially the notice of the architectural profession, to whom, I believe, the public will be mainly indebted for that area continuing vacant, I have expected to find some party coming with me in an opinion which I entertain as to what should form the east end of St. Paul's Church-yard. I have thus deferred putting forward the proposition myself. As the thing seems, however, to elude detection, I beg to direct attention to it. The said narrow-based triangular area, now, and I hope permanently, vacant, is situated in front of the narrow western termination or frontage of the houses between Cannon-street and Watling-street: that frontage ranges with the east side of Old Change, which extends from Watling-street to Cheapside. On the west side of Old Change

are the City of London Schools, and about sixteen houses, now bounding the church-yard on the east—the school building being about the centre, and occurring on the centre line of the cathedral, but not standing quite square with it. The line of Old Change continues northward from Cheapside by the back of the General Post-office to Fore-street, and southward to the river; in both cases, rather broken and tortuous, yet susceptible of improvement some day. But what I have to do with at present is Old Change itself, extending from Cheapside to Watling-street, the east side of which I look upon as the east side *proprie* of St. Paul's Church-yard. To make it such, about sixteen business houses would have to be sacrificed; and the City of London Schools, architecturalized on the north, south, and east sides, would then stand insulated; and the narrow gorge from Cheapside to Cannon-street would be expanded to a fair working width,—the relief extending even to the way in front of the schools, since, of the two lines of vehicle-traffic passing these, one could pass before, and the other behind, the building. It is rather alarming—counting the costs; but the argument that even these will supply may be confronted by that of the increasing demand for wider streets.

Now, the one-fifth of the said vacant area upon which, as mentioned at page 277, it has been in contemplation by the corporation to build, is the portion of it which ranges with the buildings between Old Change and the Church-yard; and its being built on would greatly bar the chance of such an improvement as that which I have suggested ever being carried into effect; and therefore, when the necessity for more commodious thoroughfares is becoming so pressing, and this turning at the back of St. Paul's is so glaringly inadequate, it is of the utmost importance that the said *sfith*, or any other portion, should not be built on.

Each of those two great east-and-west trunk lines—Cheapside and its intended continuation direct westward, and New Cannon-street and its corresponding continuation—is excellent *per se*; but com-

modious connections, Siamese-twin fashion, are also necessary; and the opening I have indicated above is, I think, one much to be desired.

JAMES WYSON.

## THE SANITARY STATE OF WHITECHAPEL.

The fourth quarterly report for 1856, and general annual report, to the local Board of Works, at Whitechapel, by Mr. Liddle, the medical officer of health, on the sanitary state of the district, has been printed. From this report, it appears that the pulling down of inferior dwellings, and the consequent increase of overcrowding amongst the lower orders of the population, constitute one of the most serious evils under which the district suffers, and when the saturation of the *soil* from what we may now to some extent fortunately call the *old cesspool* system, is considered in connection with that foul state of the *air*, which cannot but be induced by the conjoint use of it by multitudes of human lungs, one pair having no sooner disgorged it, than another and another swallow it, to be again and again vomited forth into the general reservoir,—not all the laws in creation, of the "mutual diffusion" amongst the gases of the atmosphere, can prevent the prevalence of fevers, and other diseases, in such a district. Typhus accordingly is a great scourge in the Whitechapel district, notwithstanding all other sanitary efforts towards its purification. Nevertheless, some progress from these efforts is being made, and within the last eighteen years the value of human life in Whitechapel has materially increased. The deaths of the tender little children who are introduced into such an atmosphere, are of course exceedingly numerous; indeed, far more so than in most other localities, nearly one-half of all the deaths which occur, in fact, being those of children under five years of age, and who may thus be said to enter life only to leave it, after a few vain gaspings and cries for air—pure air, which they cannot get, and therefore alone expire, like poor little fishes out of their native element and where there is no breath of life for them to be had.





WELSH SCHOOLS, ASHFORD, MIDDLESEX.—MR. HENRY CUTTON, ARCHITECT.



## CHURCH-BUILDING NEWS.

**Emsworth.**—The enlargement of the church of Emsworth, near Shoreham, has been begun by the contractor, Mr. Clare, of Purbrook, and is to be completed in three months.

**Christchurch.**—The memorial stones of the two chapels about to be erected at the cemetery were laid, on Tuesday in week before last, by the lady of Admiral Wallcott, the member for the borough, assisted by Mr. Ferry, the architect. A suitable address from Mrs. Wallcott was then read by her husband.

**Alresford.**—The following tenders were submitted for re-pewing the new church, &c.:—G. T. Fielder, Winchester, 880*l.*; — Lewis, Westmoor, 823*l.*; John Brown, Winchester, 793*l.*; G. Gover, ditto, 774*l.* 10*s.*; — Fowler, Alresford (accepted), 736*l.*; — Thorne, Basingstoke (allowance for old materials to be made), 721*l.* 10*s.* The committee have determined on awarding a gratuity to Mr. Thorne, his (the lowest) tender not being accepted.

**Ramsgate.**—The chauntry at St. Augustine's, to which we recently referred, has a vault beneath for the interment of the late Mr. Digby, jun. The building will be finished in two months, and has a moulded circular pitch pine panelled roof. The builder is Mr. W. Jarvis, who is executing a piece of machinery for lowering the leaden coffin into the vault by guides and balances, with a lever handle similar to the hydraulic lifting-machines.

**Dursley.**—The first stone of a new parish church was laid in the village of Coaley, near Dursley, on Monday in week before last. The architects are Messrs. Jacques and Son, and Mr. Charles Niblett has taken the contract. The chancel, the repair of which falls to certain lay proprietors, was rebuilt at the end of the last year by the same architects.

**Nuthurst.**—The parish church of St. Andrew has been re-opened after a complete restoration and enlargement, from the designs and under the superintendence of Mr. James G. Smith, of London, architect. The north and south windows of the chancel have been filled with stained glass, by Messrs. Powell and Sons, and the floors throughout have been laid with Milton's encaustic tiles, in various patterns and colours.

**Swansea.**—Steps are now being taken, says the *Cambrian*, to beautify and repair the ancient church of All Saints, Oystermouth, and greatly to enlarge the same, in order to meet the requirements of the district. The plans for the proposed alterations are prepared by Mr. R. K. Peeson, of Swansea, architect. According to these plans, it is intended to take down the front or northern wall, and extend it out a considerable distance. A small gallery for children will also be erected, and the spire thrown up. The church at present will accommodate about 400 persons, whilst by the new plan it will be capable of seating nearly double that number. The estimated cost is about 2,000*l.*

**Aston Clinton.**—The *Chester Chronicle* states that the chancel of this church, which was restored by the rector in 1849, has lately been adorned by a window of stained glass. It is described as the work of the old masters, and represents three figures, that of our Saviour being in the centre, supported on either hand by those of St. Peter and St. John, the draperies composed entirely of ancient glass.

**Manchester.**—The external renovations of the Manchester Cathedral having been finished,—when the massive tower is to be rebuilt, observes the *Courier*, does not appear,—the dean and canons have turned their attention to the internal decoration and improvement of the edifice. Two works are in a forward state, namely, a carved oak throne of colossal dimensions for the bishop, and a screen of Cuen stone for the altar. The architect of both works is Mr. James P. Holden, of Manchester, who is said jealously to guard every portal of information till their completion. The bishop's throne is nearly 17 feet high, of Gothic design, in the perpendicular style, of old English oak, and carved. The shape of the base is octagonal, about six feet in diameter, with a door on the east side. The body of the throne and the reading-desk are breast-high. At an altitude of 10 feet in the canopy, upon which, it appears, the utmost skill of the designer and carver has been exerted. The carving has been executed by Messrs. Banks and West, of Manchester, sculptors, and the joiner's work by Messrs. Holmes and Heron, also of Manchester. The work of erection commenced at the beginning of last week, but the throne has been in progress for twelve months. The canopy is supported on spandrels, and terminated with pinnacles, finials, and pendants, with a ceiling in panels and carving. The screen is at present hidden by the large altar painting, which will have to be removed. The screen is of Cuen stone. Mr. Williams, of Manchester, sculptor, has constructed it from the design of Mr. Holden. There is a group of three lights in the centre, and single ones on either side, all of which will be filled with plate-glass. The screen is 25 feet long and 12

feet 6 inches high, in the perpendicular style, corresponding to the architecture of the building. Some minor improvements are being made in the choir. The stone flags are to be relaid, in order to remedy the dampness, and more effectually exclude the effluvia, which were at certain seasons more powerful than pleasant or healthy.

## PROVINCIAL NEWS.

**Ashby-de-la-Zouch.**—The new market-house at Ashby, of which a very creditable engraving appears as a supplement to the *Leicester Advertiser* of 9th inst. was inaugurated on Monday in week before last. The facade is of brick, relieved by stone facings. The two lower rooms of the front part of the building are devoted—the one on the left of the centre archway to the purposes of a reading-room, and that on the right for a refreshment-room. The upper story consists of a decorated apartment, which will be used as a Petty Sessions and County Court. The market-house runs from the rear of the building, and consists of two rows of butchers' shops, covered over with a glazed roof, supported by lightly-constructed iron girders. A third compartment still farther on (the whole, however, being connected, and under the same roof) is devoted to general market purposes.

**Dudley.**—New schools, in connection with the Wesleyan Chapel in King-street, are to be erected from the design and under the superintendence of Mr. E. B. Nichols, of West Bromwich, architect.

**Devizes.**—It is said to be contemplated to erect a building in Devizes for the purposes of a county museum and library, in connexion with the Archaeological and Natural History Society of Wiltshire.

**Wrington (Somerset).**—New schools were opened here on the 1st inst. They are in the Tudor style of English architecture, and consist of a school for girls, 44 feet by 17 feet, with a class-room, 18 feet by 13 feet; a school for infants, 36 feet by 18 feet; and a school for boys, 38 feet by 16 feet, with class-room, 18 feet by 13 feet, together with gravelled and walled play-grounds. There is also a residence, with garden, for the master. The schools are lighted by traceried windows, glazed with cathedral glass, and the roof is surmounted by a bell-turret, rising to the height of 70 feet. The boys' and girls' school-rooms are divided by folding-doors and curtains, which, when thrown open, afford a room for lectures and for public meetings, capable of seating about 300 persons. The work has been executed by the contractor, Mr. F. Kuowles, of Wrington, under the superintendence of Messrs. Fusters and Wood, of Bristol, architects. The school fittings were furnished by Mr. Atkins, builder, from Norwich. The total cost of the building and fittings has been about 1,350*l.*

**Hereford.**—The foundation-stone of a new corn-exchange at Hereford was laid on Monday in week before last by Lady Emily Foley, of Stoke Edith.

**Willenhall.**—The foundation-stone of new schools was laid at Lanchard, Willenhall, by Mrs. Gough, of Gorsebrook House, near Wolverhampton, on Monday in last week. The site of the schools, which has been given by the Earl of Lichfield, is at the back of Holy Trinity Church. The new building, of which Messrs. Griffin and Weller, of Wolverhampton, are the architects, is to be of brick and stone, consisting of a girls' school, which forms the main portion of the front, 58 feet by 20 feet—the left wing, which projects, containing the boys' schoolroom, 41 feet by 16 feet, adjoining which is a class-room, with lavatories for both sexes; and a residence for the teacher forming the opposite wing: the plan is so arranged that a schoolroom for infants could readily be added. The style is Early English, with high-pitched roofs, the gables of the wings breaking the monotony of the front. The floors of the schoolrooms and class-room will be boarded, and the roof-timbers exposed internally, and stained and varnished. The contract has been taken by Mr. J. Rowley. The total cost will be between 900*l.* and 1,000*l.* including the site.

**Stockport.**—The contract for the erection of Chestergate-bridge has been let to Mr. Bertram, of Romiley. The sum is 4,500*l.* and the contractor will have the advantage of the materials on the ground as well as those sunk in the foundation.

## COLOGNE CATHEDRAL.

WILL you kindly permit me to have a few words of friendly explanation with Mr. Street, on the merits of Cologne Cathedral, about which there seems a little misunderstanding between us, from his strictures on my paper inserted in the *Builder* of May 2. There are so many points on which we were agreed, that I should like to clear up the only subject of difference. He thinks, as I do, that the ecclesiastical architecture of France, in the thirteenth century, "is the noblest type of Medieval architecture in existence." He agrees with me that Germany derived this style from

France, and that the plan of Cologne Cathedral was an imitation of those of Amiens and Beauvais—whether the architect was a Frenchman, or a German educated in the French school, is of little consequence. The workmen were, no doubt, German, and executed their work in the German style. Whether this be better or worse than the French masonry may be a moot point, as I will presently show. For the most part I prefer, along with Mr. Street, the sculpture and detail of the French school; but there are instances, such as the cloisters of Zurich and the pulpit and other details of Sirsburg, which almost surpass anything of equal richness to be found in France. But the gravamen of my offence is the statement that, "if completed, Cologne Minister would be the finest Gothic building in the world."

The word "fine," according to Johnson, has the meaning, amongst other qualities, of "showy, splendid." It was in this sense I used the term, and still consider it well applied. The building would be the largest, the loftiest, the most homogeneous, the most complete in its kind of any in Europe, and therefore I humbly conceive the most showy and splendid, or, the *finest*. It may be all this with many defects, both of detail and artistic skill. Swift says, "it is not impossible to be very fine, and very filthy."

To show how learned doctors who have written books (and I have read few with greater pleasure than those of the two gentlemen in question) may differ, I will quote a few sentences on the subject of Cologne Cathedral from Mr. Ferguson's "Handbook," vol. ii. pp. 739–41, which I had not seen at the time of writing my "Notes." He calls it "the great cathedral of Germany, certainly one of the noblest temples ever erected by man in honour of his Creator." In this respect Germany has been more fortunate than either France or England,—for, though in the number of edifices in the Pointed style, and in beauty of design, these countries are far superior, Germany alone possesses one pre-eminent example in which all the beauties of its style are united." Again, as to the details and artistic skill. "The choir of Cologne, which is almost of identical dimensions with that of Amiens, excels its French rival, internally, by its glazed triforium, the exquisite tracery of the windows, the general beauty of the details, and a slightly better proportion between the height of the aisles and the clerestory."

Here I think I may very safely leave the question.

"Who shall decide where doctors disagree."

My safest course is to adopt the conclusion of Sir Roger de Coverley, under similar circumstances, and admit that "much may be said on both sides."

J. A. PICTON.

## A NOTE ON THE NOTE OF "BIG BEN."

SOME time ago, good Mr. Editor, you gave us an account of Mr. Denison's Big Ben of Westminster, and told us that the metal giant sang out E flat—but what E flat? Is it such according to the Italian Opera pitch, or to what is commonly called here in England "concert-pitch?" and what is the correct concert-pitch? Formerly in Italy it was much lower than it is now. The *Misereere* of Allegri (generally sung in the Sistine Chapel at Rome, in Holy Week) is now usually transposed for the convenience of the soprano, so that the highest note, *F in acuto*, becomes E flat; for, in the time of Allegri, concert-pitch was nearly a tone lower than in the present day. Velluti, the tenor singer, caused the pitch of the Italian Opera in England to be raised (some thirty or forty years ago), and I believe it has been since raised again, to the detriment of the singers' voices, for nothing can be got shrill and loud enough for the present taste. But I suppose bells still keep the orthodox tradition respecting sound, and that Big Ben's E flat is the legitimate E flat of a hundred years ago and more. However, as you have many well-informed musical correspondents, perhaps some of them may enlighten us on this point.

C. SHARP.

## INFORMATION ON DISINFECTATION AND DEODORIZATION.

A "Minute of Information" on this subject has been prepared by Mr. Lindsey Blyth, analytic chemist to the General Board of Health, and issued by the Board in a printed form. This is a very instructive and important minute, giving in few words much information which will be very useful, especially in the summer and autumn seasons now coming on. The very special distinction between disinfectants and deodorizers is here pointed out, as well as the best or most appropriate of both kinds of agencies in particular circumstances. Though agreeing with the author in many points, especially as regards practical uses, there are some scientific questions started as to modes of action, chemical or electrical, or otherwise, which may admit of doubt, or of correction.



Thus, for example, disinfectants are specially pointed out as those which induce in certain organic compounds a condition of great readiness to become oxidized by the air,—such as lime, charcoal, &c.; but there is reason to believe, that there is also a class which induce the oxygen itself, on the other hand, to combine with these organic compounds, by exciting it into something like the ozonous or active state; and, of these, burning sulphur, sulphur fumes, or sulphurous acid (the importance of which, as a powerful antiseptic, is here recognized), may, probably, be a most important one on this account, considering the ozonous smell which such fumes excite; and at all events they hold a distinguished place amongst disinfectants, in the opinion of Professor Graham, and others, as we long since pointed out. Again, charcoal is here considered merely as a porous receptacle, in which the oxygen of the air meets with the enemy to be destroyed, whereas, we have shown reason to believe that it is not merely on this account that charcoal acts as a disinfectant, but because it actively promotes the combination of the two, whether by inducing the oxygen to unite with the noxious ingredient, or *vice versa*, or both; and, indeed, Mr. Blyth himself classes charcoal amongst those disinfectants which induce the infectious matter to unite with the oxygen, although by this he appears, from further explanation, simply to mean that it affords a receptacle for both "whereupon chemical combination ensues." These are at present merely scientific questions, however, although they are capable, perhaps, of leading to a better appreciation of the relative merits and importance of disinfectants and deodorizers. Dr. Stenhouse, by the way, who has advocated the merits of charcoal as a disinfectant, some time since spoke of it as he adopted the idea previously started in the *Builder*, namely, that it is not a mere receptacle only, but also itself an active stimulant (electricity it may be) to the combination effected in its "pores."

#### VENTILATION OF SEWERS.

"WHERE THERE'S A WILL THERE'S A WAY."

At a recent meeting of the City Commission of Sewers the following remarks on sewers ventilators were made, and we quote them for the purpose of offering a few practical suggestions. When the engineer confesses to having "feeble hopes" as to a practical remedy, the public may fairly conclude that he has put on his nightcap as regards this most important question. The convictions and will of a master rule results for good or for evil.

Mr. Deputy Dukin said, that two years ago the question of the ventilation of the sewers was referred by the Court to the engineer; but he believed that nothing had been done. Messrs. Petty, Wood, and Co. complained in strong terms of the annoyance they experienced by reason of offensive smells from the sewers. \* \* \* The engineer would not like to pledge himself to the opinion that nothing could be done to alter or improve the existing system of ventilating sewers, yet he had very feebly hopes that much of an effectual nature could be done to remedy this evil.

Great improvements have been made in the City sewers by the present able and indefatigable engineer, but some things, simple and easy to be accomplished, remain to be done, such as preventing large evolutions of foul gases being driven up the sewers and out at the gulleys and street surface ventilators, and applying better modes of drawing off foul gases from the sewers at points where there shall be no liability to injury. At present all the mouths of the large sewers on the banks of the Thames are open, exposed to every wind, so that gases of decomposition are forced back and out at any open place in street or building; a temporary canvass cover, at the cost of a few shillings for each sewer mouth, will effectually prevent this, and need not in the least interfere with the flow of sewage. The evolution of foul gas is in proportion to the volume of fresh air blown over the refuse, prevent the current by the mouth of the sewer, and the generation of gas will be reduced.

To remove those gases which cannot be prevented forming, the sewers may be connected with existing steam-engine furnaces and tall chimneys; or if the sewers will not allow of this, ventilating shafts for this especial purpose may be erected. A small rate will pay for the harmless consumption of all foul gases now poured out of sewers and drains. To this we shall come, and the sooner the better. A few years ago, a smoke-consuming Act was passed, but the Lambeth potters were exempted, because Messrs. De la Beche and Playfair reported that it would be impossible to carry on the trade without making smoke. The Messrs. Doulton have since proved the fallacy and rashness of such conclusions. By means of new kilns, with very simple contrivances, smoke is prevented, the ware is better burned, and coal is saved. Those who have no belief in smoke-burning should

visit and inspect these kilns, and they will then hear from the Messrs. Doulton, and see in the kilns, how simple is the change, how easy is the process, and how complete is the result. If such a visit teaches only a single smoke-maker to comprehend the maxim at the head of this notice, there will be no subsequent difficulty worth naming for such convert. So a sewer ventilation: let the City engineer prevent evolution of foul gases as much as possible, and burn that which cannot be prevented, remembering that gases may be burned without actual fire; strainers of charcoal will deprive sewage gases of their noxious qualities, and this is all the burning necessary. There can be no excuse for delay, as neither the intercepting nor the outlet sewers proposed will prevent evolution of foul gases which will escape, as at present, to the annoyance and injury of the unfortunate inhabitants, unless such gases are drawn off at fixed points under control.

#### BUILDING IN TORONTO.

BELOW I give copies of tenders submitted, on the 17th of April, for a new church at Yorkville (suburbs of Toronto), from the designs of Messrs. G. K. and E. Radford. Quantities supplied by the architects:—

	Excavator, Mason, Bricklayer, Stonecutter, Carpenter, Plasterer, Glazier, Painter, Slater.	£	£	£	£	£
George Netting.....	2,193	1,630	331	125	4,279	
Benjamin Walton.....	2,875	...	...	...	...	...
George Ainslie.....	1,572	...	...	...	...	...
Dowson and Booth.....	1,870	...	...	...	1,879*	...
W. H. Pim.....	...	1,472	...	...	1,472*	...
Wm. W. Fox.....	...	...	327	...	327*	...
McCauley and Bullock.....	...	...	...	81	81*	...
					3,759	

\* Accepted.

Tenders submitted April 30th, 1857, to "The Committee of Council on Education," for a model grammar-school, in connexion with the normal schools in Toronto. Messrs. Cumberland and Storm, architects. Quantities not supplied:—

	Excavator, Bricklayer, Stonecutter, Carpenter, Plasterer, Glazier and Painter, Slater, Accepted Tenders.	£	£	£	£	£
John Smith.....	3,295	...	...	...	...	...
H. Walton.....	3,183	...	...	...	...	...
Thos. Storr.....	3,141	2,367	150	0	210	0
George Carroll.....	...	2,072	...	...	...	...
George Netting.....	...	2,302	...	...	...	...
W. H. Pim.....	...	2,342	...	...	...	...
J. C. Ellis.....	...	2,300	...	210	0	...
Thos. Storm.....	...	2,243	...	...	...	2,243 0
Hynes, Brothers.....	...	...	350	0	...	...
J. Prittie.....	...	...	540	10	...	...
— Loftus.....	...	...	830	0	...	...
J. Reddan.....	...	...	885	0	...	...
James Foster.....	...	...	850	0	...	459 0
G. Percy.....	...	...	199	0	...	...
A. Hamilton.....	...	...	141	10	141	10
						5,975 10

The following is a list of tenders sent in for "The University of Toronto," according to plans and specifications by Messrs. Cumberland and Storm, of that city, viz.:—

Whole Tenders:—		
Snarr and Netting.....	£37,725	0 0
Walton and Pim.....	55,703	0 0
Worthington and Brother.....	49,470	0 0
Trade Tenders.—Excavator, Bricklayer, Mason, and Stonecutter:—		
Walton.....	33,150	0 0
Worthington and Brother.....	33,802	0 0
Carpenter, Joiner, Smith, and Founder:—		
Jacques and Hay.....	18,200	0 0
Thomas Storm.....	15,625	0 0
W. H. Pim.....	14,785	0 0
George Netting.....	12,900	0 0
Slater, Tinsmith, &c.:—		
Wm. Trason.....	2,400	0 0
W. R. Fox.....	2,117	0 0
R. Barrett.....	2,205	0 0
Reunie and Dutcher.....	1,974	0 0
Plasterer, &c.:—		
Timothy Reddan.....	1,361	0 0
Hynes, Brothers.....	1,150	0 0
James Prittie.....	650	10 0

The building committee accepted the tender of Messrs. Worthington and Brother for the whole amount, at \$9,470.

The quantities were not supplied.

The above tender is for two sides only of the intended building, the south and east. The north and west will be let as soon as the plans are prepared: neither does this amount include the founda-

tions for the south and east wings, which were let last fall to Mr. Walton, at 5,300/. and will be completed early in May; and, to complete these wings, has been reserved for the present the whole of the plumber's and gasfitter's work, the glazier's, painter's, and stainer's; the whole of the floors to the corridors, entrances, passages, lobbies, &c. &c. which are intended to be laid with Milton's tiles; and the ridge tiles are intended to be imported from England.

J. H. PATTERSON.

#### PROVISION OF HOUSES FOR THE WORKING CLASSES.

Not doubting for a moment sincerity in your earnest appeals for the improvement of the dwellings of the poor, I think you cannot omit the present most favourable opportunity of accomplishing this object. There is a proper move now for making one universal rate for the poor on all parishes of the metropolis, any part of which is within the circle of seven miles of St. Paul's Cathedral. The parishes that will be benefited by this movement will be those that the poor principally reside in. Therefore, why not make it a part of the bargain that what each parish saves in rates, by adopting this proposition, should be put aside for each three years, to be appropriated at the end of each three years for the improvement of the dwellings of the poor in the first instance, and progressively afterwards to the benefit and improvement, and comfort, and happiness of the poor, in schools, washhouses, baths, in lectures, libraries, museums, picture galleries, stationary galleries, music rooms, &c. &c. ("The poor ye will always have") in each such parish. That each such parish shall at the end of each three years obtain the separate reports of three eminent architects, as to the best way of appropriating such money to such purpose. The reports of the architects to be distributed amongst the parishioners, and the parishioners to decide how the money shall be spent, and to appoint a committee of twelve of themselves, to see it so applied to the improvement of the dwellings of the poor first, and then to the benefit and comfort of the poor of the said parish, who do not receive assistance from the poor-rate.

S. P. X.

#### THE FALL OF HOUSES IN TOTTENHAM-COURT-ROAD.

At the adjourned inquest on the 15th inst. Mr. Henry Baker, district surveyor of St. Pancras, said.—The earliest proceeding with which I was connected in reference to these buildings which have fallen, was on the 9th April, a paper written by the clerk of the works of Mr. Johnson, who gave me notice that he was about to commence work at Messrs. Hunter's. That notice was not in accordance with the Metropolitan Building Act, which provides that full particulars should be given. I went on the 15th and complained of the insufficiency of the notice. I went there again on the 18th April, and met Mr. Johnson there. He pointed out the defective state of the party-wall between 147 and 148. It was in a very defective state, out of the upright, and cracked from top to bottom. He told me it ought to come down. I agreed with him, and under the provisions of the 69th section, I wrote to the Commissioners of Police the same evening, complaining that the place was a dangerous structure. On the evening of the 21st of April I received a letter from the Police Commissioners, dated the 20th, stating that they had received my letter, informing them of the dangerous state of the premises, 147 and 148, Tottenham-court-road, and that the necessary steps should be taken thereon. What was done I cannot say, but I applied several times for the copy of the Police Commissioners' certificate, but the Police Commissioners' surveyor refused to let me see it, or to know what was doing. I applied several times to see it, both to Mr. Johnson and Mr. Reading. I knew nothing of what they were doing till Friday evening, when I saw the certificate. On the Wednesday previous to the accident I was much astonished to see the chimney breasts of the party-wall on Mr. Hunter's side taken down from top to bottom, contrary to the 20th section of the Act, No. 15 of that section, which renders it imperative that such a thing should not be done without reference to the district surveyor. No such sanction was obtained from me. I at once complained of this proceeding, and the answer was that the police surveyor had sanctioned it. I then further interfered, and told them that I should insist now that the wall should be pulled down. I went home and wrote a notice, which was served on Sparrow Harrison (Mr. Johnson's foreman), calling upon him to give particulars under the provisions of the Act within forty-eight hours; and also to take down the party-wall of Mr. Hunter's side. That was served on Sparrow Harrison by my clerk. I had to wait the forty-eight



hours; and it was my intention to have summoned the parties on the Saturday, when the forty-eight hours had expired. When I saw the police certificate on the Friday, I was astonished to find that it confirmed the taking down of the chimney breasts. I had a communication from Mr. Maple, or on his part, from his contractor, dated the 2nd of April, stating what he was going to do; which was to put in a new bressumer, remove decayed story-post, and put in a new brick pier, and make other alterations. That notice was in accordance with the Building Act. There was a new iron pier put up for the new bressumer to rest upon. That iron pier was put up to my satisfaction. I found faults with Mr. Maple's premises, as to the floors; but they were attended to. I saw the other party-wall on Mr. Maple's side. It was very much cut about. The surveyor for Mr. Maple wanted to cut away a chimney breast of that party-wall, and I refused. They did not attempt to cut away the chimney breast without my sanction.

The Deputy Coroner: Now I may ask you what is the cause of the accident?—Witness: There is no doubt but that the cutting away of the chimney of Mr. Hunter's party-wall was the main cause.

By the Jury: I think the cutting away of the two holes for underpinning, in the way I have described, was not only calculated to help to bring down the wall, but it was a perfect act of insanity. The Police Commissioners' certificate was dated the 25th of April. I should think that the party-wall fell bodily.

By Mr. Cook: When I went to the premises on the 18th of April, I cannot remember that I saw Mr. Hunter or Mr. Maple. I spoke several times both to Maple and Hunter, and told them the place was in danger, and on the Friday I showed Mr. Maple the party wall, but he wished me to allow it to remain. The old wall was 18 inches at the basement and 14 inches above it. The whole of the brickwork was very rotten—the whole, back and front.

By Mr. Robinson: About the 15th I saw Mr. Reading (Mr. Hunter's surveyor), at my house. Mr. Johnson was the first to point out the dangerous state of the party wall to me. [The witness identified the notice given to Mr. Hunter by the police.] I do not concur in the terms of that notice. It is as follows:—After referring to the Act, 18 & 19 Vict. cap. 122, the notice proceeded: "We hereby give you notice, and require you to take down the party wall next to 147, where bulged and defective, make good with sound brickwork in cement, all portions of the same where disturbed by the removal of the chimney breasts, in order to render secure the same structure, within fourteen days from the date hereof. Dated Metropolitan Police Office, 4, Whitehall-place, 25th day of April, 1857." When I went there on the Wednesday (the 6th), I was surprised at the appearance of the chimney breasts. I did consider the place in danger, but it was then out of my hands and in the hands of the police. I made no communication to any one that it was dangerous to life. As soon as the bressumer at Mr. Maple's was completed, the taking away of the raking shores would not have contributed to the fall of the houses. The removal of the chimney breasts would leave the thickness of the wall about 9 inches in some parts, at others not more than 4 inches. If the holes were cut on each side of the place where the chimney breasts were removed from, that would be more dangerous.

Mr. Reeves, the surveyor to the police, said the reading of the most essential part of the police notice had been omitted, and asked that it might be read. It was a *nolo bene*:—"This notice does not supersede the necessity of giving the usual notice to the district surveyor two days before commencing the work of rebuilding, &c. agreeably to the 38th section 18 & 19 Vict. cap. 122, part 1st."

Mr. Reeves was subsequently sworn. He said: The first we heard of this was the letter of Mr. Baker, dated the 18th April. In consequence of the receipt of this letter, the Assistant Police-Commissioner caused a survey of the premises to be made on the 20th April by Mr. Caiger, and the notice was issued. I have Mr. Caiger's written opinion, certified on the 23rd April. [He then read the opinion, that the houses 147 and 148 were in a dangerous state.] A notice, dated the 25th ult. from the police, was served on both Mr. Hunter and Mr. Maple on the 27th, and those notices expired on the very day the accident occurred. [He read the notices, one of which has been already given—that which was served with respect to No. 147. It called upon the parties to take down that part of the wall next to No. 148, which bulged, to afford proper bearings for the timbers of the first-pair floor, and strengthen and support the same.] "The fourteen days' notice means that that time should be given to complete the works."

Mr. Cook: The 72nd section does not say fourteen days, it says "forthwith."

By Mr. Dyke: It is the duty of the district surveyor to watch the works going on. It is the duty

of the police to see the shoring-up forthwith of premises pronounced dangerous. I contend that when the district surveyor saw the chimney breast removed, it was the duty of the district surveyor to inform the Commissioners of Police of the altered state of circumstances.

By the Coroner: No report whatever reached us during the fourteen days after the notice was given, and I had no knowledge how far the works had proceeded.

By the Jury: It is the duty of the Commissioners of Police not to order the shoring the premises pronounced dangerous, but to do it themselves at once. No doubt of that. I should not wait for a district surveyor's certificate. If the works contained in the commissioners' notice are not done, we should have immediately applied to a magistrate for a summons against the parties. We had no power to interfere until the expiration of fourteen days. (?) It depends upon circumstances as to whether it is dangerous to cut away chimney breasts. It is a proper precaution to be taken to shore up a wall when chimney breasts are cut away.

When the inquiry was resumed on Tuesday, Mr. Reeves was first called, and presented the report of Mr. Caiger, another surveyor of the police commissioners, stating that the premises were in a dangerous state when he viewed them on the 23rd of April. The meaning of the word dangerous might not imply that they were in such a state as to endanger life. When that was considered the case, the commissioners would immediately shore up themselves. I am told that the premises were already shored between 147 and 148. With proper precautions taken, the mere cutting away of the chimney breasts would not be objectionable. That is clearly contemplated by the notice served on Mr. Hunter on the part of the commissioners of police. I did not communicate the nature of the police notice to Mr. Baker. It is not in accordance with the 38th section of the Metropolitan Buildings Act to do this, and is out of course. The builder is to furnish the district surveyor with that information.

Mr. Dyke (a juror).—There is a fearful delay of fourteen days, and yet although you have had the wall certified as dangerous, you do not communicate at all with the district surveyor.

Witness said there was nothing prescribed in the Act compelling him to do so.

Mr. Cook called attention to the 72nd section of the Act, and asked whether the witness did not consider that under that the police were bound at once to shore up the wall.

Witness.—The reason that was not done was, that the wall was already reported to be shored up. It is the duty of the commissioners, immediately that premises are pronounced dangerous, to shore up. The 73rd section states that the police shall go before a magistrate, and that the magistrate shall fix the time when the works shall be done. In this instance, the police assumed the authority of the magistrate.

Mr. F. H. Caiger, assistant architect and surveyor of the metropolitan police, examined.—I am assistant surveyor to the metropolitan police. The order to view these premises is dated the 20th, and I did not receive it till the 22nd. The cause of the delay is the routine the order has to go through. I inspected the premises on the 23rd. The result of my inspection was that each end, the east and west end, was bulged. I told Sparrow Harrison, Mr. Hunter's foreman, that they must come down. I then went to 147, Mr. Maple's, and inspected his side of the party wall, as well as the other portions of the house. There was not the slightest appearance of fracture on Mr. Maple's side. There were no works going on at that time. He told me he contemplated raising the first floor of No. 147 to the same height as the floor of 146, so as to make them the same height. The Act specifies that the district surveyor shall have all works certified to him, whether they have been previously reported to the police or not.

By Mr. Baker (the district surveyor).—There is a special fee for taking notice of dangerous structures, by the police. The police commissioner receives it. By Mr. Giffard.—We observed in this case, in not going to view the premises within fourteen days after the notice, the ordinary rule of our department.

Mr. David Reading examined.—I am a surveyor. I was engaged by Mr. Hunter as his surveyor, and prepared plans for rebuilding the back part of Mr. Hunter's premises, which had been injured by fire. The works commenced in the beginning of April, Mr. Johnson being the builder. I visited the premises two or three times a day. On the evening before the accident I was on the premises with Mr. Baker. He never said a word about the danger of the wall or premises. I met him by appointment, and showed him the order made by the commissioners of police. He seemed surprised at the notice, and said he had not seen it before. He did not say a word about the police-order not being calculated to

prevent danger. He had written me a letter dated the 7th of May, in which he complained of the cutting away the chimney breasts and other works without giving him notice, contrary to the 20th section of the Act, and threatening to summon Mr. Hunter before the magistrates at the Clerkenwell Police Court. Mr. Baker said he would insist upon having the whole of the brickwork taken out and properly done throughout, the whole of the wall, and not half the wall as we had done it. I wanted the wall down, and I went with Mr. Baker to Mr. Maple to ask his consent, and when they told Mr. Maple the wall was defective, he replied, "You are defective, Mr. Baker is defective, and I am defective." Mr. Hunter also objected to taking the wall down. I urged them both to have that wall down.

By the jury.—I was not aware of the contents of the notice served upon Mr. Hunter and Mr. Maple by the police, or if it had been served upon the builders. I have a very indistinct recollection of having heard that the builders had received a notice of any kind. A builder would be very culpable in a case of emergency for not showing such a notice to his surveyor. When I drew the plans, I intended the chimney breasts to be cut away. I gave no direction for the holes to be cut in the party wall for underpinning. I had a conversation with Mr. Moore, Mr. Johnson's clerk of the works, on the subject, and it was understood that the brick wall was to be taken out in small pieces. I attribute the falling of the houses to the defective manner in which the works on Mr. Maple's premises were being done. I entirely agree with the statement of Mr. Reeves, the surveyor of the police.

Some other evidence having been heard, the inquiry was adjourned till Friday, 22nd.

#### DANGEROUS STRUCTURES AND THE METROPOLITAN BUILDING ACT.

THE lamentable accident which has occurred in Tottenham-court-road, from the falling of houses, resulting in the loss of life, and the various cases of a like nature, which have previously happened, call public attention to the Metropolitan Building Act, to ascertain what provisions the Legislature has made to prevent so great an evil. Soon after the passing of the Act, a small pamphlet was published, I believe, for private circulation, with the title,—"The Metropolitan Building Act, 1855. The office and duties of a District Surveyor by W. L. Donaldson, Solicitor to the Royal Institute of British Architects,"—and I extract a passage from it, which appears to me to show clearly the defect of the regulation in the Act as to dangerous structures.

"There is another duty to be performed by a district surveyor, which will not originate with himself, but will arise when he may be called upon by the commissioners" named in the Act (*viz.* "If the structure be within the City of London, or the Liberties thereof, the commissioners are the 'commissioners of sewers of the City of London'; so where the structure is situated elsewhere, the commissioners are 'the commissioners of the police of the metropolis'"); this is, to survey any structure which may appear to be in a dangerous state.

The district surveyor, however, is required to make known to the commissioners any information he may receive, with respect to any structure being in such dangerous state (sec. 69).

As before mentioned, the exemption of the buildings and works specified in sec. 6, from the regulation and supervision of the Act, does not extend to Part 2, 'Dangerous Structures,' but they are liable to sections 69 to 88, mentioned of the Act. Therefore, all such buildings are to be watched as to their security.

It is very important that district surveyors should exercise much vigilance respecting dangerous structures, and they should give immediate notice to the commissioners of any information they may have received on the subject, for frequently loss of life has occurred from dangerous buildings falling down; and, even if there has been no neglect on the part of a district surveyor, it may be difficult in many cases for him to satisfy the public mind that such was the case.

It is to be observed that the commissioners are not bound to employ the district surveyor to make the survey, but they may employ any surveyor; but there can be no doubt it will be most to the advantage of the public, that the district surveyor should be the surveyor employed to carry out this part of the Act. His character of district surveyor, which he will still retain, will give more authority to the proceedings. In the City of London, the district surveyor has already been employed in such cases."

I think the above clearly shows that the defect in the present provisions of the Act is the divided responsibility; and the evidence, in all these cases, as published in the public papers, proves the old adage, that "what is every one's duty is but little attended



to by any." The consequence is, that the important matter of preventing accidents from dangerous buildings is not sufficiently provided for.

By the extract it is shown that very little responsibility is thrown by the Act on the district surveyor: in fact, the district surveyor is only required to make known to the commissioners "any information he may receive with respect to any structure being in such state as aforesaid."

If he does this, his duty is at an end, unless he is employed by the commissioners.

By the evidence on the present inquest, it appears that the district surveyor did give information, but the surveyor of the commissioners contends he ought to have renewed his information; but where is the legal obligation to do this: then there is the surveyor of the owner of the property in this case—three surveyors,—and yet, is any one of them responsible? I certainly think, under the Act, the district surveyor, unless he withholds information he has received in such cases, has no responsibility where the commissioners choose their own surveyor, and this the commissioners specially do, at least elsewhere than in the City of London. It is to be hoped that the Building Act will be amended in this respect, and let the responsibility respecting dangerous buildings be thrown upon the district surveyor, and let him be paid proper fees for his responsibility and labour in so important a matter. The public will be benefited by such an arrangement, and you may depend upon it there will be less loss of life from falling houses.

A HOUSEHOLDER.

#### PRINCIPAL WORKS CHOSEN BY PRIZE-HOLDERS IN THE ART-UNION OF LONDON TO THIS DATE.

From the Royal Academy.—The Child's Grave, J. W. S. Mann, 200.; Falstaff proposing to marry Dame Quickly, D. W. Deane, 100.; Devonshire Fishing Village, H. Jotsum, 50.; Lausanne, Evening, H. Moore, 50.; A Busy Morning on the Thames, W. Penn, 35.; The Vale of Belvoir, N. W. F. Hulme, 40.; Marlborough Forest, J. Stark, 35.; Lynmouth Bridge and Tor, N. W. W. Havell, 20.; Races in the Fire, J. Brett, 31. 10s.; Among the Wild Flowers, J. B. Watson, 20.

From the Royal Scottish Academy.—Scene among the Islands of Loch Awe, McN. Maclean, 30l.

From the Society of British Artists.—Gipsy Camp, W. Shayer, 50l.; Beach at the Mumbles, Geo. Wolfe, 50l.; A Hazy Morning on the Thames, H. J. Boddington, 35l.; The Interrupted Meal, G. Armfield, 35l. 15s.; On Holmwood Common, G. Cole, 30l.; A Country Ale-house, W. Shayer, 30l.; Castle and Tower of Heidelberg, J. Dobbing, 30l.; On the River Ux, J. Tennant, 37l.; Fairlight Glen, J. Godet, 25l.; The Prawn Fisher, W. Shayer, 25l.

From the National Institution.—A Family Group, H. P. Willis, 50l.; Winter Sunset, G. A. Williams, 75l.; The Steeping Stones, F. Underhill, 35l.; Harvester's Rest, F. Underhill, 60l.; The coming Squall, T. S. Robins, 25l. 5s.; Forerunners, H. Barrand, 25l.; Early Morning, H. B. Willis, 42l.; Master Ford searching for Falstaff, S. W. Buss, 17l.; Hazy Morning, E. Hayes, A.R.H.A. 15l.

From the British Institution.—Gleaners, A. Jerome, 25l. 5s.

From the Water-Colour Society.—Sorrento, Italy, T. L. Borchgrevink, 40l.; Margate Roads, T. S. Robins, 31l. 10s.; Scene off Dieppe, T. S. Robins, 15l.; The Stag Rocks, Phelps, 30l.

#### ARCHITECTURAL PUBLICATION SOCIETY.

The annual general meeting of this society was held on Wednesday, the 20th, at the Rooms of the Royal Institute of British Architects, Mr. Godwin in the chair. Mr. Wyatt Papworth, honorary secretary, read the report of the council, and the balance-sheet. It appears that there are now 313 members, and that the income for the past year was 4197l., the amount expended was about 2197l. leaving in hand the sum of 2000l. for the works still due to the subscribers of that year. The report said,—

"For the year 1856-7 just concluded, one part, containing eleven plates of illustrations to the letters A and B, has been issued. At the time these plates were formed, the amount in hand would go more than cover their expense, but as subscriptions have been paid in to a larger amount, preparations are now being made for another series to contain illustrations to the letter C, which will be put in hand after the next meeting of the committee. Any of our friends having drawings or sketches referring to the subjects named in the list sent out, or to any article under that letter which they may consider eligible, are requested to submit them for acceptance. The thanks of the society are particularly due to the following contributors who have this year so liberally placed their collections of original sketches at the disposal of the committee, viz.—Messrs. Henry Drake, John Starforth, E. H. Martineau, G. Somers Clarke, J. W. Walton, F. P. Cockcroft, W. Boucher, W. Lighty, S. S. Toulon, R. H. Sheart, C. Fowler, jun. and the following members of the committee, viz.—Messrs. Arthur Aschpelt, Octavius Hansard, T. H. Lewis, J. M. Lockyer, and H. R. Newton."

The Chairman, in moving the adoption of the report, said it was scarcely creditable to the profession that there were only 313 members to such a society, and urged the desirability of obtaining at least 100 additional members, so that the work might be carried on with vigour, and more matter be given to each subscriber for his guinea. What had been done, and that too without ever getting into debt, was an evidence that the work would be carried to an end. About one-fourth of the "Dictionary" was completed. He pointed out the care that was taken to

make each article correct, by sending the slips to sixteen members of the committee, who altered or added according to their knowledge.

Mr. W. P. Griffith pointed out some objections to a proposal in the report to continue the year 1856-7 (commenced May, 1856) to the end of December next,—the object of which proposal was to make the subscriptions payable on the 1st of January in each year; and ultimately this clause was withdrawn, and the report so altered was adopted.

Thanks were voted to the officers of the society, to the auditors, to contributors of illustrations, and to the Council of the Institute for the use of the rooms.—Mr. F. H. Lewis, Mr. Williams, Mr. Octavius Hansard, Mr. C. C. Nelson, and others, taking part.

Mr. John Papworth explained at some length the mode pursued to obtain revision of the articles, and,—

Mr. Burnell showed the great necessity for this which existed, and gave examples. In the case of the article on "Crushing Weight," which he had written, he was perfectly staggered by the errors he found in the books referred to as authorities,—extraordinary misprints, the decimal points wrongly placed, and repeated so in book after book. In one of Mr. Fairbairn's works he found the crushing weight of a certain material given in one page as 70 lbs. to the square inch was stated in another to be 70,000 lbs. The state of our knowledge on this head, he thought, was very unsatisfactory.

#### PREVENTION OF FIRES.

In the *Builder* of some two weeks ago, you inserted some remarks from a correspondent relative to the prevention and reduction of fires in buildings, by closing all apertures, and preventing the access of air. This, as you remarked, is impracticable to a great extent, although there is little doubt many fires might be confined to the rooms they originate in, if "presence of mind" were used by individuals in closing the doors, &c. to such. It is well known that for some time the water thrown upon a fire has the effect of increasing rather than diminishing it. Many chemical substances are opposed to combustion—alum, sulphur and many others. Why does not science impress these into the service of fire-extinguishing? These might be kept in a state of concentrated solution, in small receptacles, attached to each engine, and gradually mixed with the water while the pumping was in operation of a fire. I can conceive little difficulty in mechanical skill devising such apparatus. Were common sense more in fashion than it is, we should see our houses constructed so that a fire should not spread beyond the room or place in which it originated. Some months since I advocated that the doors might be partly (if not wholly), made of plate iron, and instead of the rude and antiquated lath-and-plaster abominations called ceilings, plates of iron, from joint to joint, would form a very superior ceiling, not only fire-proof, but more cleanly: these could be painted, and easily cleaned, and capable of extensive ornamentation. Fires often spread from floor to floor, from the plaster giving way from the excessive heat below: the laths are thus exposed, and the flames, ever ready to ascend sooner than descend, speedily complete the process of destruction.

SCINTILLA.

#### ECCELESIOLOGICAL SOCIETY.

At the anniversary meeting of this society, held on Wednesday evening, May 13, by permission of the Directors of the Department of Science and Art, in the board-room, adjacent to the Architectural Museum, in Cromwell-road, South Kensington, the Rev. B. Webb, the secretary, read the eighteenth annual report of the committee.

In the course of the report, the principal architectural works of the year were noticed. "The restorations of Ely Cathedral, by Mr. Scott," it said, "have been continued: the reredos is now completed, and the stained glass for the great east window will be finished (we hear) next week. Carlisle Cathedral, by Mr. Christiani; and Lindisfarne, completed by Messrs. Pritchard and Seddon, must also be particularly mentioned. Works are also in progress at Peterborough Cathedral, under Mr. Scott; and here Mr. Clayton has, with great success, painted a very dignified 'Majesty' on the roof of the sanctuary. The Chapter of Lichfield has very favourably received a report from the committee appointed to advise upon the restoration of that cathedral, in which correct arrangements are strongly insisted upon: the opening of the choir to its aisles and to the transept has already effected a perfectly marvellous improvement in the interior effect of this cathedral church. A rebuilding of the east end is contemplated at Worcester; and your committee felt bound to express a hope in the *Eccelesiologist* that so important a step would not be undertaken without the highest professional advice. The clerestory windows of Westminster Abbey are to be filled with painted glass. Canterbury Cathedral has received

further enrichment in the same material; and for Chichester (where works are in progress under Mr. Slater) Mr. Clayton has designed a noble window, representing the *Te Deum*, for the south transept."

At the conclusion of the report, Mr. A. J. B. Beresford Hope, after referring to the Manchester Exhibition of Art-Treasures, spoke strongly of the *mala fides* of the municipal authorities of Edinburgh with respect to the rebuilding of Trinity College Church in that city. He also urged the restoration of St. Bartholomew's, Smithfield, and of the Chapter-house of Westminster. Mr. Scott added Ely Chapel as another medieval remain in London urgently needing restoration. Lord Robert Cecil explained that the works at St. Alban's Abbey were only suspended till something was decided about making the church the see of a new bishop. He also spoke of the dissatisfaction with which the choice of judges for the New Government Offices was generally regarded.

The treasurer presented the audited balance-sheet of the society's accounts, showing a balance in hand of 707. 17s. 8d.

A paper, on the Paganism of the Middle Ages, as exhibited in their literature and art, was read by Mr. W. Burges, which gave rise to some conversation, in which various members took a part.

The meeting then, after examining a collection of church-plate manufactured by Mr. Keith, proceeded to visit the large and convenient apartment in which the fine collection of casts of the Architectural Museum is now arranged.

#### THE MAIN DRAINAGE OF THE METROPOLIS.

##### THE METROPOLITAN BOARD OF WORKS.

At a meeting of the Board, held on the 15th inst. a letter was received from the Secretary of the First Commissioner of Works, informing the Board that the report of the three gentlemen, to whom the main drainage scheme sent up from this Board was referred, would not be ready before the end of next month.

Mr. Carmichael moved that the thanks of the Board should be forwarded for this communication. He took occasion to approve of the course which the chief commissioner had adopted in the matter. A very stormy and irregular discussion ensued, in which the chief commissioner's treatment of the Board was bitterly inveighed against by some of the members, and the chairman was obliged to call "order," several times.

An amendment was moved and seconded, that a mere acknowledgment should be made, without returning thanks.

A long desultory discussion ensued, in which several members took part, some condemning, and some approving of the chief commissioner's conduct, in appointing persons to overlook the scheme of the Board.

The amendment being lost, by 17 against and 14 for it, the original motion was put and carried.

#### ARTISTS' BENEVOLENT FUND.

The 30th anniversary dinner of the Artists' Benevolent Fund took place on Saturday, at the Freemasons' Tavern, Mr. Godwin, in the absence of Sir Robert Peel, presiding. Among the company present were Sir Charles Lock Eastlake, P.R.A.; Sir Wm. C. Ross, R.A.; David Roberts, R.A.; E. M. Ward, R.A.; J. T. Willmore, A.R.A.; J. H. Foley, A.R.A.; Mr. G. Dodd, Mr. J. H. Phillips, Mr. J. Absolon, Mr. B. R. Green, Dr. Thomson, Dr. Sibson, Mr. Thomas Waring, Mr. L. Pocock, Mr. Riviere, Mr. Wilmore, Mr. Cafe, Mr. Hanburt, Mr. Lynch, Mr. Mole, Mr. John Dickinson, F.R.S.; Mr. Thomas Lupton, and numerous others connected with the arts.

After the usual loyal and national toasts had been disposed of,

The Chairman, in proposing the toast of "Prosperity to the Artists' Benevolent Fund," referred to the increasing attention which of late years had been bestowed by the public upon art, and instanced the large amounts which had been paid for the purchase of pictures during the present season. He stated, that at the private view of the two water-colour societies purchases were made of works exhibited to the extent of 3,600l.; at the British Institution, the Suffolk-street Galleries, and the Portland Galleries, before the opening of the Royal Academy, to the amount of 9,000l.; and that, adding the amount brought in by the Art-Union of London, and the sales at the Academy, the total of purchases made from the various exhibitions in London could not, in the present season, be less than 30,000l. Although these were gratifying proofs of an increased appreciation of art on the part of the public, still it was incumbent upon the great body of artists to provide amongst themselves some funds which should be available for them, in the event of those unforeseen misfortunes which too often fell upon artists, even in the height of their prosperity. The Artists' Fund was



established so long since as 1810, and in 1827 it received a charter of incorporation. At the present moment 300 artists were members of the annuity fund, the benevolent fund being raised and supported by the donations and subscriptions of the patrons of the fine arts, and was intended for the relief of the widows and orphans of the members of the annuity fund. During the past year a sum of 868*l.* had been paid as dividends to widows, and 150*l.* to the orphans of deceased artists.

The toast was enthusiastically drunk, and in the course of the evening other toasts complimentary of the Royal Academy, and the officers of the benevolent and annuity funds, were also proposed.

The amount of subscriptions received at the dinner amounted to 450*l.*—a sum larger, we believe, than has been subscribed at any previous anniversary.

#### NAPOLEON'S HOUSE AND TOMB, SAINT HELENA.

It has been stated, in several of the leading French and English journals, that the French Government have entered into arrangements with the English for the purchase of Napoleon's house at Longwood, and of the tomb. This story has often been repeated, and is nearly always current in the Island of St. Helena. One thing, however, is very clear, that if the French Government do not take the matter in hand, in the course of a very few years there will be little or nothing left of the old house at Longwood; for it is rapidly crumbling away, more from ill usage than from the effects of time: the two together have, however, played and havoc with this interesting memorial of the exiled Emperor. "As it is on the crown lands, there is nothing to prevent a transfer to the French Government. It is too far gone to be restored: all that can be done is to bestow upon it sufficient repair to effect its preservation; and, to do this judiciously, so as to preserve its original form, as occupied by Napoleon, it will be necessary to remove a whole series of wooden sheds, stores, huts, pigsties, and sheep-pens, which have been tacked on to the original building. These unsightly erections sadly disfigure the house, and ought never to have been placed there: they are in a ruinous condition, and scarcely worth the expense of pulling down even for firewood. If these unsightly appendages are removed, the external framework of the old house will be pretty much as when occupied by Napoleon, except the wanton damage committed by the agents of the East India Company, in converting Napoleon's last abode on earth into the out-buildings of a farm.

The entrance to Longwood is marked by two little cottages, now, like every thing else, in a state of ruinous decay, once being lodges, though now mere cabins. Close to the left is a square stone, which marks the distance from James Town, and the height above the sea,—1,777 ft. From these decayed lodges a narrow strip of sward leads direct both to the new and the old house, the form of which, though built expressly for, was never entered by, Napoleon. At the entrance to the house is a small trellised verandah, which is the only thing in tolerable repair, and retains much of its original appearance. It is cut and scribbled over with names and initials of visitors in every accessible part: it is reached by dilapidated steps, covered with moss and stunted grass. From this verandah we enter direct into the first room. It is a wooden structure, being an addition to the original building before it was made ready for the occupation of Napoleon. It has long since been completely dismantled, and utterly stripped of everything. The walls, floors, ceilings, and windows, are in a ruinous condition, rapidly crumbling to pieces: it has been cut and hacked in every direction by the knives of relic-seekers. The fireplace and chimney are tottering to decay,—bits of brick or stone, and even chips of mortar being carried away by visitors, so that everything movable has long since disappeared. It is covered with dirty cobwebs, and what remains of the internal walls are scribbled all over with names, dates, and initials in chalk, which is generally provided by the civility of the place, for the express use of such of the visitors as may be troubled with the *cacoethes scribendi*. This, the largest room in the house, was used as the ante-chamber or waiting-room, and was lighted by five windows and a sash door. It commands a fine view over a very picturesque part of the island.

From this apartment we enter into the most interesting room of all, that in which Napoleon breathed his last, and the one most wantonly desecrated. It is an utter ruin, being occupied by farm machinery for winnowing and crushing corn. It is completely changed, being entirely altered for fitting up the materials of the machinery, which is itself in a state of decay. Daylight shows through the roof in several directions, and when last there myself, part of the roof over the spot where he died had fallen in altogether, and covered the floor. It is a miserable

place, and has the appearance of having been wantonly defaced for the express purpose of desecrating a spot so interesting in its associations with the memory of the fallen Emperor. Englishmen are ashamed when they enter this melancholy ruin, and well indeed they might be. It is a dark and dismal hole, dimly lit by two winnys, between which Napoleon died. From this we pass into a room still more dark than the former, which was the dining-room: it was lit by a glazed door, not having any window in it. Visitors at present grope through this room to reach the last at this end of the building, which was the Emperor's library,—a small room, formerly with three windows, now entirely dismantled and used as a store-room.

The remaining part of the building, now a large stable, was originally divided into four small rooms, used by Napoleon,—one his bedroom, another his study, the third his bathroom, and the fourth, a mere cell, was the room occupied by the *vatel-de-chambre*. These are all entirely obliterated, and to reach them it is necessary to pass into the yard, as the original door has been blocked up, its place being visible in one of the stalls of the stable, for which it is now used.

The extent of accommodation enjoyed by Napoleon during his exile in Saint Helena will be readily understood and painfully felt, when it is stated that his whole suite of apartments consisted of *only six small rooms* and a bathroom: the whole were of limited dimensions, the building having been originally a mere temporary summer cottage of the deputy-governor. All the apartments are on the ground-floor. The outbuildings are now used as sheds for cattle, stables, and stores. They are quite dilapidated, and in a ruinous condition. Some of these miserable stables are interesting as having been occupied by Las Casas, Montholon, Gourgaud, and Barry O'Mara, whose names are for ever associated with Napoleon in exile.

Part of Longwood House is covered with small thick slates, attached to common battens by wooden pins, which are continually slipping down from decay of the pins and battens. The other part is merely covered with thick brown paper, daubed over with tar, and many of the buildings were so covered in Napoleon's time. Internally the walls are stripped to the stone, and not a wreck remains to tell how they were coloured or papered: the plastering is all knocked down, and the boarding in every part in the last state of dilapidation, as much from ill usage as from the effect of Time's "effringers."

Immediately after Napoleon's death, the house and outbuildings were converted into a farmstead, and ruthlessly defaced by the Government of the day, the house occupied by General Bertrand being used as the residence of the worthy farmer: thus for the long space of *thirty-six years* Napoleon's last home has been barbarously employed as a receptacle for cattle.

The site of one of the little patches of garden which used to front his bedroom is walled off for cattle-pens: the other is occupied by the horse-gearing used for driving the farm machinery, which encumbers the inside of the room in which he died. The only remaining mark of his grounds is a little stone tank, in which the fallen Emperor essayed to keep a few fishes for his amusement: it is choked up and covered with weeds. It appears formerly to have been under the shelter of a small bank, to protect it from the trade winds, which blow unceasingly over it. A little to the eastward is a circular mound of earth, with a few straggling shrubs scattered about, which is said to mark the grave of a favourite horse. There is one interesting memorial left,—an old tree in front of the house, under which he often sat. It was recognised by Emanuel de Las Casas, when he accompanied Prince de Joinville to Saint Helena for the exhumation of Napoleon's body. The elder Las Casas was conversing with Napoleon under the shelter of this tree when he was arrested by Sir Hudson Lowe.

If the French Government really obtain possession of this house, what is to be done with it? It is too far gone to be merely repaired; and to effect a thorough restoration, the change effected would be so complete, as in a measure to destroy the interest attached to the present building. Externally it may be easily patched up and preserved from further decay,—for the stonework consists of rough rubble set in mud; but as all the interior is stripped bare to the walls, it would be a mere sham imitation to attempt putting them into anything like their original state. True, it would be Longwood still,—but not the Longwood of Napoleon. It has been proposed to remove the desecrated buildings altogether, and erect a monument on their site: at present they are a blot on the south-east of England—or at least of the East-India Company—for it was ruined by the Company's agents; and Englishmen are heartily ashamed of the wanton desecration. The Tomb Valley is a quiet secluded spot, of considerable scenic beauty, well covered with thriving grass, interspersed with clumps

of furze and bramble, which gives it an entirely English appearance, though numerous tropical plants are visible, especially the aloes, whose lofty flower is conspicuous in many places. The hills in the neighbourhood are well wooded and pleasingly diversified.

On the bounding hill to the left of the tomb looking up the valley is a line of firs, said to be the remains of the letter N, planted on the slope enclosing the valley on this side.

In consequence of the sinuous windings of the road, the tomb itself is not visible till we enter the little glade; then, on suddenly emerging from the grassy path, it stands at once before us, shadowed by a few tall firs, cypress, and weeping willows.

The tomb is placed nearly in the centre of a narrow patch of ground occupying the middle of the valley. This small space is separated from the rest of the property by a common wooden paling, now sadly touched by the hand of Time, and bearing evidence of rapid decay. These are the original palings erected, after the Emperor's funeral, to mark out the limit of the land purchased for that purpose. Within these time-blanching railings are scattered about at random a few fir-trees, with several of the sombre plume-like China cypresses, and a scion or two of the original weeping willow, so intimately connected with the history of this interesting valley of the "shadow of death." The remains of the ever-famous "weeping willows" were carried away to France by Prince de Joinville.

In the centre of the enclosure, formed by the wooden railings, stands the empty tomb, sunk deep in the ground, lined with masonry, fenced in by some common iron palisades, fixed in island stone. On the top of these iron rails has been thrown a common roof of thatch, to protect it from rain, and keep it as much as possible from decay. At times, however, this temporary thatch is removed, so that the whole place is entirely open to the elements.

At the bottom of the tomb, which is lined with solid masonry, is a receptacle formed to receive the coffin, which was then covered by a large slab of stone upwards of 6 feet long and 3 broad. On this slab was a layer of solid masonry, secured by cramps and cement, which protected the coffin from the effects of damp, as well as from the weight of the superincumbent earth.

Internally the walls are plastered over with lime, which is, however, chipped and cracked in many places, while in other parts the plaster has fallen off: in one or two places the walls are bulged, from the pressure of the adjacent earth. It must have been well built originally, or it would not have stood open to the influence of the weather, as it has done for so many years, which is the more remarkable, as it was necessarily executed in a great hurry, and under considerable difficulties. It is a little damp inside, but not so much as might have been expected from its situation, in the bed of a deep valley, and close to a copious spring. Occasionally, in times of heavy rain, when the ground is saturated from the drainage of the surrounding hills, it contains a few feet of water. I have more than once seen it in this condition. As a matter of course, the inside walls are scratched and scribbled over with names and writing,—thus carrying this inveterate habit into the very grave. There may be traced the straggling remains of many a line of poetry run mad, and prose on stilts, partly effaced by the green moss and lichen which ever accompany moisture. Some of the relic hunters have chipped off pieces from the hard lava coping stones, and others have been more free than welcome with pieces stolen from the railings, nothing being too hard or too heavy for the genuine sentimental hero-worshipper. Of the shrubs and flowers piously planted by Madame Bertrand and companions in exile, nothing remains: they have long since disappeared.

A few willows from the old stock still droop near the tomb, and slips are plentifully cultivated in an adjoining patch of ground, to supply the demand created by the numerous pilgrims to the tomb, of which considerable quantities are annually sold and carried to Europe and America by the happy purchasers.

Napoleon was not buried in consecrated ground, but in a patch of land bought especially for the purpose. It was his own wish to be buried there, in case the English Government would not allow his remains to be carried to France, which turned out to be the case. The ground was purchased by the East-India Company, of the Torbett family, for the sum of 1,200*l.*

Having been fortunate enough to obtain a copy of the receipt given by the proprietor in exchange for the last instalment of the purchase-money, the reader may perhaps peruse it as an interesting document connected with the last days of Napoleon.

"Island of St. Helena, 10th April, 1826.

"Received from the Governor and Council, on behalf of the Honourable East-India Company, the sum of seven hundred pounds, being the balance of



twelve hundred pounds granted me by the said Honourable Company, in full of all and any demand or claim by me, my heirs and assigns, for the interment of the late GENERAL BONAPARTE in my grounds, and for the free use and access to and from the tomb and road thereto leading, and the full and sole occupancy of the space surrounding the said tomb by the railing now thereon erected, without any obstruction to the same by me, my heirs, executors, administrators, or assigns, DURING THE PERIOD for which the same may be required, together with all and every the rights, customs, and privileges, as now enjoyed and claimed in behalf of the East-India Company.

(Signed) J. B. BROOKE.

" C. BLAKE."

(Signed) WM. HY. SEALE,  
Colonial Secretary."

It will be seen from the above document, that five years after Napoleon's death the English authorities still persisted in calling him GENERAL Bonaparte, and that the land was not purchased in perpetuity, but only for the period for which it might be required. Could the authorities have foreseen that, within fourteen years from the above date, his remains would be translated to France with the honours due to a crowned head?

After the exhumation, the ground of course became once more private property, as in terms of the agreement it reverted back to the original proprietor, in whose family it still remains. This family claimed the right and exercised the privilege of exhibiting the tomb, for which they charged a fee, and kept it for their own benefit. The Company and its officers had right of way to the tomb, but not the public—hence the origin of the present gratuity,—for to reach the tomb enclosure other land of the proprietor must be passed. It has been occasionally sub-let to other parties, by way of speculation, who trafficked in the enthusiasm of visitors, and levied black mail on every one approaching its precincts. It has more than once been offered for sale, as the following advertisement, cut from a Saint Helena paper, will show, in which the tomb is in fact the principal item.—

"Napoleon's Tomb.—For Sale, the Freehold Estate at Saint Helena, called Napoleon Vale, which contains the Tomb of Napoleon, late Emperor of the French. The proprietors being desirous of making a division of their joint property, hereby invite offers for the purchase of this valuable estate, thereby affording to capitalists an eligible opportunity for an investment, which may be promptly and profitably reimbursed."

The estate will be sold subject to the negotiations with the French Government (now pending for the purchase of the tomb for 40,000 francs. Apply, &c. 21st June, 1855."

Here the proprietors demand 1,600*l.* for the tomb, the land for which they originally sold for 1,200*l.*—which is not far short of the value of the whole property: hence the tomb is offered as the speculative bit for the Barons of the island,—the prospective 40,000 francs being held out as a tempting lure.

There is a strange and curious fact connected with the history of this grave not generally so well known as most events in his strangely varied life. Napoleon was buried under his kitchen hearth-stones! Whether it arose from any difficulty, at the time of closing his sepulchre, of getting slabs of stones sufficiently large, or whether from hurry, or whatever other cause, certain it is, the three slabs which finally closed his grave were taken from his kitchen-hearth at Longwood. They formed a flat covering, and were left alone in their nakedness, without name, date, or initial being put upon them,—and properly so, as a name on that grave would have been superfluous.

Antommarchi observes, in his "*Derniers Moments de Napoleon*," that "Une énorme pierre, qui devait être employée dans la construction de la nouvelle maison de l'Empereur, est destinée à fermer sa tombe. Les cérémonies religieuses terminées, on recouvre la maçonnerie d'une couche de ciment," which was strictly verified at the exhumation, except that the large stone immediately covered the coffin, instead of forming the exterior tomb-stone, which was, in fact, formed by three slabs as above mentioned, which were carried away by the Prince de Joinville.

Though no epitaph was given on the stones, yet one was written, by a venerated resident of Saint Helena, Major Sampson, himself a soldier, who had seen some service in the stirring times in which he lived. It is not remarkable for length, high-sounding phrases, or elegance of expression; yet it expresses a great deal. Though written in uncouth metre and jingling rhymes, it is eminently suggestive. Here it is, in its simplicity and truth, as taken from his own lips, at the tomb itself:—

"The stones that did his kitchen pave,  
Closed at last Napoleon's grave!!

Most persons are familiar with the well-known cast or mask of Napoleon's features, taken immediately

after death, but few are aware of the difficulty which occurred at the time in finding sufficient plaster for the purpose.

Antommarchi states that Sir Hudson Lowe said to him, "You have asked for plaster to take a mask of the defunct: one of my surgeons is very able in these kind of operations: he will assist you." I thanked his Excellency: the moulding is a thing so easy, that I could do it without aid. BUT I HAD NO PLASTER.

Madame Bertrand had only received, in spite of her reclamations, a KIND OF CHALK. I scarcely knew what to do, when Dr. Burton indicated a place where gypsum might be found. The admiral (Lambert) gave his orders, a boat put to sea, and a few hours afterwards returned with some fragments, which we calcined. I thus had plaster, and moulded the face." I can explain why Madame Bertrand received a kind of chalk instead of plaster of Paris, as asked for. Mr. Andrew Darling, the purveyor and undertaker to Longwood, who made the coffin and superintended the funeral of Napoleon, left behind him in MSS. a very interesting account of his proceedings on this occasion, a copy of which was given me by Mr. Charlette, his executor. The following extract from this curious document explains all about the chalk. It is dated the day Napoleon died.

"5th May, Saturday.—Went up about 12 o'clock in the day (to Longwood), met Mr. Dutton with a letter from Sir Thomas Reed, to send up some plaster of Paris; but as I knew there was none to be purchased, and none in store, having been on the look-out for the same article that same morning, and the day before, and found that the only thing I could find was to grind down some images, and use the material; but as the expense of them was considerable, and not certain of the materials answering, I declined doing so till I had orders; therefore, proceeded to Longwood House, where I knew Sir Thomas Reed was, and there found him and the governor in front of the new house. Told the circumstance to the governor, when he recommended the plan as it had been requested by Madame Bertrand. I then mounted my horse, came to town, purchased the figures to the number of 150, all small, got the men that I had at work, and set about pounding them, which having completed, I had two Chinese in waiting, and started them off with the powder, and then left town myself for Longwood." In another part, alluding to other matters, he says,—"A mattress is now in my possession, amongst the stores, being much marked by the stains of blood, &c. from him, when he was turned round to shave the back part of his head, for the bust which was taken on the 7th May, by Doctors Burton and Antommarchi, and afterwards a bust taken from the same, which was very fair considering the time he had been dead, and the roughness of the material, which was packed up, and taken by Antommarchi, for the intention, as I was told by Madame Bertrand, to be sent to Canova, for a model in marble."

A little further on he observes, "Much time having been lost, and a delay in taking the bust, and the smell getting to be none of the pleasantest, I felt anxious to have him put into the coffin, having the people all ready for the purpose." &c. &c.

There was no need of sending a boat out to get the necessary gypsum for this operation, as it is found on the hills in the vicinity of Longwood itself, where I have collected it for the very same purpose of taking a cast. The images alluded to were the small common cats, dogs, parrots, &c. so commonly sold forty years ago, before the Italian hawkers had taken their present more respectable position as dealers in superior casts from real works of art.

In a wooden hut or sentry-box near the tomb enclosure, the *custos rotularum*, or *cicerone*, keeps the "Visitors' Books," for the convenience of such as may be disposed to jot down their thoughts on visiting this interesting spot. It is needless to say these books are full of rhymes and rhapsodies in all languages—Dutch, German, French, English, Spanish, Portuguese, Arabic, Persian, Hindustani, and even one or two in the Chinese character.

The English writers are generally amusing from their absurdity, and the French from the air of regret or defiance which pervades most of them.

One French visitor writes thus, in unmistakable characters,—

*J'ai vu—et j'ai maudit!!*

Another follows him up by a sentence equally short and pithy.—

*Honte et Mépris à l'Angleterre!!*

A third is brief, but pathetic—thus,—

*St. Hélène—Hudson Lowe!!!*

Another falls foul of Pitt in the following strain,—

*Horreur à l'exécration Pitt.*

The attacks against Sir Hudson Lowe are often repeated: he seems a favourite mark for the French visitors' execration,—

*Horreur au bourreau Hudson Lowe!!!*

The following specimen is selected from many others of a similar kind,—

*O grande homme! O grande Napoleon!*

*Maldiction!!!*

*Mais la France, et toi sont vengés,  
Hudson Lowe est mort!!!*

I will conclude these extracts with the following entries, selected at random, from which the difference between the French and English effusions is very evident. I string them together without comment.

"The tomb of Napoleon we visit to-day,

And tread on the spot where the tyrant lay:

That his equal again may never appear,

Shall be sincerely prayed for many a year."

JACK LUX, Cork."

"The sun of Austerlitz is set,

And clou is have shone on Nap the Great.

Ambition brought the emperor here,

To this bleak isle, both lost and dress."

D. K."

"We Iohiboo gentlemen,

Are hearty and strong:

We left James' town

To visit Wood Long,

On the way to Wood Long

We visited the tomb,

Where Napoleon the Great

Lays conquered by fate."

"Here lies entombed of Bonaparte,

Embalmed the body and the life:

His ashes rest beneath yon willow:

Metaphics it far too hard a pillow,

For such a daring gallant fellow!"

"Louis F. Waldron, on board of the bark Hope, o

Nubedford, its boat steer,—has this day bin to see

bonny's tomb. We are out 24 munts, with thirteen

bundred bls. spurn oil!"

"Several officers have paid their respects to the scene which furnishes the best antidote to military ambition that the world can yet present."

I will conclude with the following translation from an entry, written in French, by a Russian visitor:—

"I have the honour to be a traveller who has visited all the curiosities worth seeing. I have seen the Bears at Berno,—the clock at Moscow,—the monument of Peter the Great, at St. Petersburg,—the Tunnel at London,—the Dome of the Invalides at Paris,—the Table Mountain, and a thousand other things. I have now come to this place to contemplate the tomb of the devastator of Europe,—of the great man of our age. Alas! the space which he has occupied during nineteen years, is exactly of the same dimension as that which holds the humblest of his numerous victims.

Lo Pélerin de la Russie!!

Whether the reports lately circulating in the continental journals be true or not, one thing is certain, that something must be done, and that speedily, if it is wished to preserve Napoleon's last home from irretrievable ruin. It cannot exist many years longer in its present neglected state. The French Government had therefore better bestir itself, and come at once to a conclusion. As Longwood House is Crown property it may be easily obtained, for it is more than useless to the Government, and a sad eye-sore to the island: no doubt it would be readily ceded to the French on condition of its being put in repair, so as to preserve it from further degradation. The tomb has been long in the market, and the proprietor will be glad to sell; so that no obstacle exists here to prevent the French Government carrying out its wishes, whatever they may be.

JOSEPH LOCKWOOD.

#### PROCEEDINGS UNDER THE BUILDING ACT.

On Wednesday, the 13th, Mr. Wm. Wray, builder, was summoned before Mr. Secker, at the Greenwich police-court, by Mr. Snook, district surveyor of Hatcham and Rotherhithe, charged with using faulty materials in the external walls of two dwelling-houses in the course of construction at Hatcham. Complainant said that Mr. Wray had used very bad place-bricks, bats, and portions of bricks, and the mortar was composed of loam or soil with small particles of lime, so that the bricks would not adhere: thereby the walls were not properly banded and solidly put together, as required by the Act of Parliament. He therefore required that the whole of the external walls be pulled down and re-erected, as he had cautioned him against using such material several times during the progress of the work. Defendant denied that the specimens produced were used, while complainant positively swore that he took them from the work. The defendant was ordered to pay 12*s.* costs, and the case was adjourned for three weeks for him to produce his witnesses.

GRANITE QUARRYING. An extraordinary explosion of granite took place on Friday, the 24th ult. in one of the quarries at Maen, in the parish of Constantine, belonging to Messrs. Freeman. A hole was sunk 19 feet, and occupied three men and a boy ten days in sinking: the size of the bit was 6 inches, and the stem 1½ inch: the charge of powder was 93 lbs. and a mass of granite has been shot out 4 feet from its original position, measuring 53 feet in length, 30 feet wide, and 24 feet deep: the solid contents being 35,160 feet, or 2,726 tons.



## Books Received.

*Some Account of the Condition of the Fabric of Llandaff Cathedral from 1575 to its re-opening in 1857; with Extracts from the Act-Books of the Cathedral.* Parker, West Strand. 1857.

THE Bishop of Llandaff is the author of this tract, which his lordship has written as a record of the steps by which his cathedral has been brought to its present condition of partial restoration. The pamphlet contains some extracts of interest, from a Chapter MS. and other sources, accounting so far for the ruin and disfigurement from which a considerable portion of the fabric has been rescued, and into which it first of all fell nearly three hundred years since. The first step towards its redemption was the insertion in 1844 of the present Early Geometrical five-light window by Mr. John Prichard; and from that day to this the work has been slowly progressing, and the main features of the edifice have at length been reconstructed according to the previous type, the Lady Chapel restored, the Norman Arch rest and exposed to view, other arches disencumbered, the Presbytery rebuilt, the floor restored to its level, stability secured by buttresses, sedilia inserted, encaustic tiles laid in the nave and aisles, and stone pulpit erected, a heating apparatus put up and ramified through the building, and various other works done, besides the removal of last century's work, &c.; and still the authorities look to the continuation of the good work, much even now remaining to be done. At the re-opening of the cathedral on 16th ult. a considerable list to the limited means of the chapter was given in offerings amounting to between six and seven hundred pounds, and the archdeacon offered 100*l.* in five years if 100 persons would do the same, so as to secure at once 10,000*l.* for the entire restoration of that portion of the fabric which is still in ruin. Various promises in accordance with this offer were immediately made, and others then and since have increased the prospective means already to not far short of half the sum required. We shall give some particulars of the restoration in an early Number.

## VARIORUM.

The article on the New Reading-room and Libraries at the British Museum, published in the *Times*, has been reprinted, with a plan, by Murray, of Albemarle-street, in the form of a penny tract, many of which appear to have been sold to the public at the entrance to the Museum and Library during the week just past.—An article in the *Engineer*, by Mr. D. Campbell, F.C.S. Analytical Chemist to the Brompton Hospital, on the application of Sewage to Agriculture, originally delivered as a lecture to the Chemical Society in April last, has been reprinted in the shape of a pamphlet. There is much matter for consideration on the interesting subject of which it treats, both in this and in another pamphlet just published by Atchley and Co. of Great Russell-street, Bedford-square, in which Mr. Jasper Rogers reiterates his own ideas on the subject of sewage as regards town arrangements. The title of this latter publication is "Facts and Fallacies of the Sewerage System of London and other large Towns, with Plans, Elevations, and Sections; being a complete Exposition of its Defects; showing that Pestilence is spread by its Deposits, detailing the Means of remedying its Evils, and pointing out the Necessity for public Lavatories, Closets, &c., as the first Step towards the moral Advancement of the lower Classes." Peat charcoal, we may remind our readers, is Mr. Jasper Rodgers's panacea. He dwells particularly, however, on the intensification of the sewage evil in the meantime by the extension of the closet system, and in the publication under notice he says, "All I ask at present is to get a metal pipe laid through the sewers, into which all water-closets shall discharge; and after that is done, I say, get, if you can, an Act of Parliament that every bed-room in every house shall have a water-closet." By the way, there is a fact of which we are reminded by Mr. Campbell in his lecture, to which we may here advert. Some time since we took occasion to draw attention to the power which mere common marly earth had of deodorizing offensive matter, and asked why it might not be tried, in conjunction with lime, for precipitating and deodorizing sewage. The fact adverted to by Mr. Campbell relates to the power of marly earth, and is to the effect that Sir H. Davy long since alluded, in a lecture, to the mixing of quick-lime with night-soil to deprive it of its disagreeable smell, and observed at the same time that the Chinese, whom he considered to possess more practical knowledge of the use and application of manures than any other nation, are in the habit of mixing their night-soil with one-third its weight of fat marl, make it into cakes, and dry it by exposure to the sun, in which state it has no disagreeable smell, and forms a common article of commerce of the Chinese empire.—Mr. J. S. Gamgee, military surgeon, has had printed and pub-

lished by T. Richards, of Great Queen-street, a pamphlet, entitled, "The Cattle Plague and Diseased Meat, in their Relations with the public Health, and with the Interests of Agriculture," being a second letter to Sir George Grey, the Home Secretary. Mr. Gamgee here exposes some of the vile doings in the sale of diseased and putrid meat in our markets, and offers suggestions for their amendment, after due inquiry by the Government. He deprecates restrictive measures on the importation of cattle as offering an increased premium for the fraudulent sale of our own bad article. That much diseased meat is continually sold in our markets there is but too much reason to believe; and the influence of such meat on the human blood, and on the health in general, becomes a very serious question. A circumstance which but last week came under the notice of the writer of the present notes on books received, and which occurred in the outskirts of London, will show how really diseased animals come to be sold as wholesome food. A milch cow (which, by the way, had just yielded twenty-four quarts of milk—wholesome milk, we can scarcely say, as a day's produce, also for human food) fell down in a dying state on Sunday morning before last, when the owner immediately sent for a butcher, and sold the cow at something like half price: the animal was immediately killed, cut up, and sent to the butcher's premises for sale. In a similar way eleven cows have been lost (as the cow-keepers themselves describe the process) by one man since before last winter, and others have lost theirs in the same vicinity under like circumstances; and we cannot doubt that this is a system which extensively prevails in the unwholesome cow-houses in and around London.—"Tymroads in Northern India, in connection with the Iron Mines of Kumaon and Gurkhal," by Mr. W. P. Andrew, F.R.G.S. (Wilson, Royal Exchange), advocates the speedy introduction of cheap tramroads into an important district of India, for which, since this pamphlet was written, a limited company has issued a prospectus. Speedy opening, as Mr. Andrew observes, is far more pressing than speedy transit and hence expensive formation in a case such as this.—Amongst books received we have to add, a second edition, with additions, of Dr. H. Lloyd's "Elementary Treatise on the Wave Theory of Light," Longman and Co. publishers; and "Trifles, historical and poetical, from an Idler's Common-place Book," by the same publishers,—an interesting collection.

## Miscellanea.

THREATENED INVASION OF NORMANDY.—At the last meeting of the Newcastle-upon-Tyne Society of Antiquaries, Dr. Bruce stated that an archaeological excursion of some duration was projected, in which, he believed, any member of the Newcastle Society would be allowed to join. An invasion of Normandy had been planned by the Sussex Archaeological Institute. A steamer was to sail from Newhaven, and if a landing were effected at Dieppe, a week would be spent in ransacking Normandy. Master Lower, he hoped, would be the Master Wace of the enterprise, and indite a poem thereupon; and the facts of the invasion would be pictorially handed down to posterity by the facile fingers of certain Lewes Matildas.

SANITARY PROGRESS AT CROYDON.—No great and good movement is without its Quixotic exaggerations and grotesque accompaniments. Sanitary reform has so progressed at Croydon, that in an action brought on behalf of a miller and his men against the Local Board of Health, for contaminating the water in the mill-head and the mill-tail with sewage, and so thickening the fluid as to make it sluggish, diminish its power, and retard the mill-wheel, &c. &c. the plaintiff lodged a list of nine several claims, amounting in all to 5,179*l.* odds, and including 700*l.* for obstruction of the flow, 500*l.* for analysis and measurement of the material, &c. and 2,000*l.* for "nuisance to self and servants, loss of service, expense, and inconvenience." That sanitary ideas are now taking a strong hold of the common sense of the country clearly appears, even in the very uncommon sense of the Croydon miller and his men.

NOVEL COMPETITION.—Two wood contractors, Mr. James Macpherson, Pitchroy, who purchased part of the forest of Clancathurich, and Messrs. Grant, Carr Bridge, who have lately erected two circular saw-mills, had a trial, on the 17th ult. who could saw the greatest quantity of timber in a given time. Each party had five men employed, and one at each mill (mutually chosen) for keeping the time. The work was commenced at 6 A.M. and the competition was keen. The Messrs. Grant took the lead from the first, and, in elocutionary language, kept at the head of the poll till the close of the contest, having sawn 523 square-backed railway sleepers, and 113 deals. The other party had only 219 sleepers, and 85 deals. Mr. James Grant, millwright, near Granton, was the contractor for the Messrs. Grant's mill.—*Inverness Courier*.

THE IMPROVEMENTS IN ST. JAMES'S PARK.—Last week the Earl of Malmesbury, in the House of Lords, endeavoured to raise a little political capital by denouncing the expenditure of capital of another description on public works, science, and education, and other cognate subjects forming the miscellaneous estimates, and in particular by objecting to the outlay requisite in clearing out the mud, &c. from the ornamental water in St. James's Park, and laying the bed of the water with concrete, an unnecessary expense, he thought, on sanitary grounds, inasmuch as her Majesty's family and household had no reason to complain of the state of their health while at Buckingham Palace. Lord Granville responded, informing Lord Malmesbury that, although her Majesty had made no complaint as to the stagnant mud and water, the district medical officers had repeatedly done so on the part of the inhabitants over whose health they presided. These officers had characterised the state of filth and stagnation into which the water had got as an abominable nuisance, and there were other reasons for what had been done, such as the loss of life when it was covered with ice, the depth being in many places too great for safety, and the bed so full of deep holes, that cleaning out was a most expensive process, which would now be entirely obviated by the expenditure of some 10,000*l.* or 11,000*l.*; and 900*l.* a year saved thereby.

TRADE NUISANCES COMMITTEE OF HEALTH OFFICERS.—A committee of the Metropolitan Association of medical officers of health appointed to inquire into trade nuisances have issued their first report, which relates to the nuisances arising from gas-works, and has been printed. It enters pretty fully into the subject of gas manufacture and purification, and points out how certain nuisances arise, and how they ought to be avoided. The Metropolitan gas-works have been visited, occasionally, since October last, by invitation from the managers, who are said to have shown every disposition to promote the objects of the committee.

OXFORD ARCHITECTURAL SOCIETY.—The first meeting of the Term was held in the Society's Rooms on Wednesday evening, the 13th. In the absence of the President, the Rev. H. B. Walton took the chair, and introduced the subject of the evening's discussion, "The Internal Arrangement of Churches." Mr. Parker called attention to the triple division of our most ancient churches into nave, chancel, and presbytery, and believed that the Reformers in England wished to restore this ancient arrangement, and that altars were ordered for this purpose. Several churches were instances which retain this arrangement. After further remarks from Mr. Lingard, Mr. Bennett, Mr. Lowder, and others, the subject of galleries was discussed; and it was agreed that galleries had been too indiscriminately condemned, which were certainly essential parts of the plan of ancient churches, and in many cases would be a great addition to the accommodation of new ones.

THE SURREY GARDENS.—The directors of these gardens have commenced their new season very well: the oratorio of "Eljah," and a series of "opera recitals," are amongst the fresh things. Dawson's modelled picture of "Fairy Land," though scarcely so good as some of his previous productions, is still a very clever and pleasing work.

The necessity for innocent amusements, at small cost, for the multitude, is so great, that those who worthily provide them, though with a view to their own profit, do good service. We have a proof of the demand for amusement in the fact that, in the seven days, from May 9th to the 16th, during which the new reading-room at the British Museum was open to the public, 162,489 persons visited it.

THE CRYSTAL PALACE.—The opera concerts here on Fridays are proving very satisfactory, and draw large audiences. The orchestra is formed in the great transept, and four or five thousand persons can hear well with ease. The charge of a shilling for the words of the songs is an imposition, which should be abandoned. The first flower-show is announced for Saturday, the 30th, when the first display of the great fountain for the present season will also take place. Something should be done to maintain the character of the Crystal Palace as an educator, by the establishment of lectures, for example, or otherwise.

THE BROTHERTON MEMORIAL.—The memorial of Mr. Joseph Brotherton, late M.P. for Salford, is to consist of a monument over his tomb, in the Salford Cemetery, and of a bronze statue in Peel-park, Salford. The commission for the statue has been given to Mr. Noble, and its cost will be 1,000 guineas. The pedestal will be of granite.

CONSUMPTION OF SMOKE.—In reply to a question in the Commons last week, Sir G. Grey said that, during the last six months, fifty-four convictions had taken place in London for violations of the smoke law, and that the police prosecuted those parties only who, after representations made to them, refused to comply with the provisions of the statute.



**BRIDGE OF BOATS AT CALCUTTA.**—A scheme is under consideration for the formation of a bridge, based on moored pontoons, across the Hooghly, at Calcutta, to the terminus of the railway at Howrah. The cost of such a structure has been estimated at from £125,000 to £150,000. A more solid and permanent railway bridge, at an expense of £500,000, has been mooted; but it is considered a great object to have some sort of communication, at once to supersede the present inconvenient mode of crossing; and besides, borings have shown that there was no foundation for a massive structure in the bed of the river, nothing having been found but a light and loose soil, and quicksands, even to the depth of 37 feet from the surface of the river bed. Objections, such as the bore wave, hurricanes, &c., have been considered, but are not thought to be at all vital. The bridge would be so made as to open for the passage of vessels, and to fall or rise at the river banks, so as to suit the tides. The roadway would be 26 to 30 feet broad, or sufficient for three carriages abreast, with a footpath on either side. Plans and a report have already been prepared by Captain Dicey, first assistant master attendant, at Calcutta, and approved of by Captain T. E. Rogers, superintendent of marine there.

**HINTS TO WORKMEN: TO PROCURE SLEEP.**—Nothing is more injurious or prejudicial to health, and, if neglected long, it may terminate in insanity, than long-continued watchfulness and want of sleep. To remedy this, pour a pint of boiling water on an ounce of Epsom salts and a teaspoonful of calcined magnesia. Let it cool, and drink it on going to bed. The warm bath is another excellent remedy, as well as the shower bath, both being highly sedative. Never eat a hearty supper, especially of animal food; and drink spirits and water, or beer, "if these are necessary," only after dinner. If these means fail to procure sound and refreshing sleep, lose not a moment in consulting a regular qualified surgeon.—J. B. N.

**DOOR-KNOBS.**—I am anxious to draw your attention to the absurd construction of the door-knobs in England. If a prize were offered for a handle which would present the greatest difficulty in opening a door, that condition could not be better fulfilled than in making it perfectly round and smooth. On the continent, they in general have the sense to avail themselves of the principle of the lever, in some shape, as we do ourselves in the case of handles to carriage-doors. If it is an object to turn the existing door-knobs to account, it may be easily effected by drilling a hole through and inserting a cylinder, thus imitating a carriage handle. In the same manner, if we have to pull vertically and overcome a spring, why a New Zealander would use some form of the lever! In this latter case, I have adapted a wooden lever, although less neat than if made in the original manufacture. Although of less moment, I think any hard wood, ivory, and perhaps gutta-percha, a better material for door-knobs than metal; the latter abstracting the heat of the hand so rapidly as to be dangerous to delicate persons; but that is as nothing compared to the present objectionable form.—M.

**THE ROYAL ACADEMY.**—In the first page of the catalogue of the Exhibition of the Royal Academy, there is a notice inviting exhibitors of this or last year to inscribe their names and become "candidates" for election as associates of the Royal Academy. Will you inform me if this rule is found to work well? Not being in the secret, to me it appears either a very impolitic, or a most unjust regulation. Is election to the Royal Academy to be considered as a privilege or an honour? If a privilege, one can understand why we are permitted to become candidates; and this circumstance may perhaps explain why, in so limited a number of members as sixty-six, there happens so frequently that we find the same name repeated (*two Coopers, two Landseers, two Pickersgills, and two Smirkes*). Can it be that the Academy is reduced to this, and that the title of R.A. is to be considered only as a mark of good fortune, and a proof that a man must be possessed of some influence in order to be so elected? But perhaps I am mistaken, and the distinction is to be considered as an honour, not a privilege. If so, what is the meaning of the word candidate? If it be an honour, why should not the proof of this honour be in the fact that it is unsought? Why should not the council, each year, select the most meritorious artist, and invite him to become a member? Why should the newly-elected associate owe his distinction, not to the fact of his being the most meritorious artist in his profession, but to his having been considered as the most fitting of the half-a-dozen bold men who had signed their names? But I have said it is unjust; for why should a man be tempted to inscribe his name, when he stands no chance of being elected, although he, poor man, is not aware of the fact? Why should he, by so doing, render himself an object of ridicule by his presumption, or bring upon himself a half-suppressed sneer, as he is recognised as a "Would-be-Associate."

AN OCCASIONAL READER.

**VALLETTA, MALTA.**—A correspondent, jealous for the credit of Valletta, where he resides, finds fault with a writer in our contemporary, the *Illustrated News*:—"The writer saw beauty in a beggar woman, he continues, which no Maltese or visitor ever saw before, yet in the noble church of St. John he could see nothing but the natives on their knees. Did he look around him? Did he survey the ancient and beautiful effigies of grand masters, once the terror of the Algerine and Turk, and the bulwarks of Christian commerce in this sea? Did this writer even look up at the glorious painted roof, or regard the workmanship of the shrines? Had he done so for an instant, he must surely have found something better to talk of than natives on their knees. Permit me, as a keen admirer of the few old and beautiful public buildings we possess, to suggest that Government should devote a little attention and a little money to the restoration of the paintings on the roof of this old cathedral. The cost would be small; the benefit, as regards the feelings of the mass, great; nay, I doubt not, much of the necessary outlay would come from the Catholic population, did Government take the lead in the matter."

**MODEL LODGING HOUSE SOCIETY AT WATERFORD.**—From the report of the managing committee, it appears that this body started into existence in November, 1855, and had an income of 377*l.* for the year ending November, 1856. The success of the experiment is said to have been already fully proved.

**THE GRAIN OF STONE.**—A "Querist" asks (p. 279), what composition would be applied to stone columns with a view to bring out the grain and veins of the stone, and then how they could be polished. A strong alkali,—soda, or lime and potash,—using it, if required, several times, would remove the carbon or dirt, and bring out the colours: afterwards emery powder, or pumice-stone, rubbed well over, might polish the surfaces.—F. L.

**NEWS FROM MELBOURNE, AUSTRALIA.**—There are few public works of any magnitude at present in course of prosecution here, excepting the making and repairing of roads and bridges, and the construction of the patent slip at Williamstown. A new Government printing-office, estimated to cost 20,000*l.* is in course of erection, and the interior of the Legislative Council Chamber is being completed and decorated. The Melbourne Exchange Company are advancing successfully. The plan of the building includes a large board-room, secretary's offices, library, and reading-room, 65 by 32, and a basement capable of being made into twelve offices; and it is anticipated that these rooms will be completed and ready for occupation before June 1st of the current year. The subject of artesian wells has begun to attract much attention. Discoveries have been made in various parts of the country which justify the most sanguine expectations of our being able to obtain by such means the great desideratum of a sufficient water supply for the purposes of irrigation and personal comfort. The working men of Melbourne and the suburbs have subscribed among themselves nearly 1,000*l.* in aid of the funds now being raised to defray the cost of an additional town to the Melbourne Hospital.

**DISCOVERIES AT TUNIS.**—The *Malta Times* speaks of the success attending the Rev. Nathan Davis's explorations among the ruins of Carthage. In addition to the discoveries of a series of Punic mosaics, a further piece of mosaic flooring, of about 12 feet square, had been brought to light. In the centre appears a basket of beautiful form and design, filled with members of the funny tribe and other inhabitants of the deep, consisting of several varieties of fish, crawfish, writhing eels, prawns, &c. delineated in colouring and effect so as to vie with the most perfect oil-painting.

**A CONTRIVANCE FOR SECURING STACKS OF CORN FROM THE ATTACKS OF VERMIN.**—We have seen at Messrs. Dray and Co.'s, the agricultural engineers, of Swan-lane, Upper Thames-street, a very ingenious method of excluding rats and other vermin from corn ricks. A set of cast-iron pillars are so formed that an animal ascending to the top finds himself completely at bay, being covered with an impenetrable dome. With these pillars a set of iron clips are supplied, by means of which a farmer may readily construct a stack frame from any waste timbers found on the farm. The cost is only about 3*l.*—"Farmers' Club."

**ST. PAUL'S ORGAN.**—As the keyboard at the west front of the organ gallery has been allowed to remain so long unfinished, I presume some alteration of the organ is contemplated: if so, I wish to suggest that no more money should be wasted on this unjustly extolled, toneless instrument (built by a foreign workman of no note), as a good opportunity of purchasing a really grand organ will shortly offer. If, however, it is intended to preserve the present "outrageous machine," I hope you will urge the immediate removal of the unsightly keyboard framework, and the restoration of the gallery front.

AMATEUR ORGANIST.

**ARCHITECTURAL CONGRESS AT LINCOLN.**—A great architectural congress is to be held at Lincoln, on the 26th of May, and two following days. The meeting will consist of the architectural societies of Yorkshire, Northamptonshire, Leicestershire, Bedfordshire, Worcestershire, and Lincolnshire; and the officials of each body are expected to arrive in Lincoln on Monday, May 25, for the purpose of holding a conference for the transaction of business. On Tuesday the whole body will attend Divine service at the cathedral, and a lecture on the sacred edifice will be delivered, by the Rev. G. A. Poole. The castle, and other objects of interest in the town, will afterwards be inspected; and in the evening a lecture will be delivered upon the introduction of Christianity into Lincolnshire during the Saxon period, by the Rev. E. Trollope, and another upon the architectural history, &c. of the cathedral, by the Rev. G. A. Poole. On Wednesday, the 27th, an excursion will be made to Coleby, Somerton Castle, Navenby, Wellingore, Welbourn, Temple Bruer, Dunstan Pillar, &c.; and in the evening the society's dinner will take place, either at the Great Northern Hotel or at the Corn Exchange. Lectures will fill up the evening, one being promised on the history of the captivity of John, King of France, at Somerton Castle, by the hon. acting secretary. On Thursday, the 28th, another excursion will be made to Stow, Littleborough, Marton, Yorksey, Thorney, Doddington-hall, Skellingthorpe, and Bracebridge; and in the evening the Mayor of Lincoln purposes to invite the members of the societies to an entertainment. The Duke of Newcastle, Earl Stanhope, the Bishop of Lincoln, and other distinguished personages, are expected to be present.

**THE USES AND ADVANTAGES OF SCHOOLS OF ART.**—Mr. Young Mitchell, the principal of the Sheffield School of Art, delivered a lecture last week at the Sheffield school on this subject. There was a considerable attendance. Mr. W. Rhodes, the chairman, stated that a committee of artisans and working men had been formed to raise funds to liquidate the debt that now pressed upon the school. The committee found considerable apathy in the minds of many, no doubt arising from ignorance of the nature, and design of the institution, and had thought it desirable that a series of lectures should be given to awaken sympathy with the institution, and remove misapprehension, and Mr. Mitchell and Mr. Sterling Howard had come forward to deliver lectures on the applicability of art to Sheffield manufactures. Mr. Mitchell, in course of his lecture, said:—It may be asked, What has the School of Art done for us? Although it has been in existence but twelve years, with many difficulties to overcome, it has done much. It has educated many hundreds of your artisans: it has been instrumental in advancing the material and social position of many who, but for it, might have been struggling on unknown; it has, I can prove, materially raised the character of your manufactures. In many instances the good obtained here is utilised at once, and this is particularly the case as far as engravers and chasers are concerned, for they, as it were, carry the principles they have learned overnight into the work they are engaged in next morning. At the close, the lecturer said,—"I call upon you, artisans of Sheffield, to be wise in your generation, and not neglect advantages which will prove of the greatest benefit both to you and your children. I have spoken of art only as it advances a man in his material position; but it has a higher mission than this. It is by nature a refining and elevating study, and is connected collaterally with so many other branches of knowledge, that the art-student is incessantly led into many pleasant paths which otherwise he would not have trodden. He has no time for base and grovelling pursuits, but finds that, as he becomes a better artist, he also becomes a better man."

## TENDERS

For additions and alteration to a Warehouse, in Wood-street, Cheapside, for Messrs. Vyse and Son. Messrs. Tiltott and Chamberlain, architects. Quantities supplied.

Holland and Co.	£4,999 0 0
Ashby and Sons	4,720 0 0
Jay	4,543 0 0
Rider	4,480 0 0
Brann and Son (accepted)	5,343 0 0

For a pair of Gothic Villas, to be built at Earl's-court, Kensington, for Messrs. Newton and Smith. Mr. Gordon Statham, architect:—

Jackson Frow	£3,995 0 0
Wm. Gray	2,943 0 0
Henry Frow	2,879 0 0
T. H. Adamson and Sons (accepted)	2,798 0 0
Wm. Eds.	2,571 0 0

For rebuilding House, 227, Strand, for Mr. W. Brownley. Mr. John Barnett, architect:—

Myers	£2,031 0 0
Greg	1,927 0 0
Ashton	1,885 0 0
R. Lawrence	1,879 0 0
Axford and Co.	1,850 0 0
Macey (accepted)	1,732 0 0



tion, 18 days, or meeting with an ENGAGEMENT for Three Days a Week, or for four or five hours daily.—Address, M. Z. A. Office of "The Builder."



# The Builder.

VOL. XV.—No. 747.

LIVERPOOL is full of activity. New sets of chambers of great cost and extent are rising on all sides, and display an amount of decoration, externally, somewhat surprising. Some business houses of considerable pretensions are being erected in Bold-street and elsewhere: the Exchange is to be enlarged, and part of Dale-street is to be taken down, to admit of the erection of Public Offices. In St. James's-street, at a short distance from the centre of the town, a new Roman Catholic Chapel is in progress, from the designs of Mr. Pugin. It is of the Geometrical period in style, and of considerable size, with elaborate east and west windows. Under the same architect, a new presbytery and other additions are about to be commenced at St. Oswald's: these buildings will be in accordance with the church, which is in the Decorated style.

Amongst the most important works going on are buildings containing sets of chambers for business purposes. The most striking of these is the pile known as the "Tower-buildings," now in progress under the able direction of Mr. J. A. Pictou, and which will hereafter be seen from the water-side. This pile is 105 feet long one way, 96 feet the other, and 65 feet high. The fronts are of stone, with granite dressings, in three stories, and in the frieze and elsewhere display a large amount of carving, some of it very well executed by Stirling. The small columns to the windows between the columns of the principal order, have capitals of natural foliage. As we shall give a view of the building hereafter, we need at this time only add that the total cost will be from 18,000*l.* to 19,000*l.* Within, iron girders carry flat arches, and 2-inch oak planks from girder to girder form the floors.

"Middleton-buildings," nearly completed, close by, under the same architect, shows some novelty in the windows, and will afford us an example of the value of good business premises; in Liverpool, for the Cunard Company have agreed to pay for the ground-floor of this building 1,000*l.* per annum, which is at about the rate of 40*l.* per square yard.

In a building also for chambers, now being erected near the Exchange, Messrs. Haigh and Co. the contractors, Belgian marble is introduced in courses in the fronts, with Darley Dale stone, to give variety. Some chambers, close by, in progress, from the designs of Mr. Colling, display in the front a considerable amount of varied ornament. It may be objected that this is flat (purposely, by the way), and that the windows are wide for their height, which renders them somewhat squat: as a whole the building, nevertheless, commands praise. Mr. Cockerell's Assurance-office is not yet sufficiently advanced to tell its own tale.

The new landing-stage intended for sea-going steamers is making rapid progress: it will be 1,000 feet long, and will cost more than 100,000*l.*; and if you commit yourself to one of the steamers close by it which pass constantly backwards and forwards to connect Lancashire with Cheshire, evidences of similar movement in Birkenhead will be found in the construction of docks, ship-building yards, and manufactories—a more healthful and promising activity than that which was evident there some years

ago, when the land there was first bought by the acre and sold by the foot, and the owners of it were thoroughly possessed with the notion that they were about to absorb and wipe out Liverpool.

There is a tradition that when the parish church of St. Peter was built, about 150 years ago, Liverpool could not boast of a professional architect amongst its inhabitants. "An application," says Mr. Pictou, in his "Architectural History" of the town, printed in our pages, "was made to an architect in London to furnish designs for a doocorse. He sent down four sketches for the purpose. The authorities here not being able to agree as to which should be preferred, it was suggested that the whole four should be adopted, which was accordingly done, as may be seen by inspection, each of the four entrance doorways being of a different design."

At the present time, if half-a-dozen local architects were needed for each doocorse, or any other case, they could be found: Liverpool, indeed, has become an architectural centre, and has many attractions for those who would know what is being done in this way in the provinces. Its magnificent town-hall is of itself worth a journey, and will become more and more so as the arts of the painter and the sculptor are brought to bear on its adornment. The interior is already getting dirty, and the darkened condition of the metal doors and brass gaseliers, seems to suggest something wrong in the ventilation, notwithstanding the elaborate arrangement for it which exists, and the great attention paid to the matter by Mr. Mackenzie and the other resident officers. It is, indeed, elaborate, and, with the heating, costs about 2,000*l.* a-year. The air, admitted through huge vaulted passages in the basement, where it is washed at the entrance by an artificial Scotch mist! is sent forward by powerful fans worked by a steam-engine over pipes containing hot water, or otherwise, according to the season, to an apartment where it is prepared for use, and then, at any temperature that may be desired, according to the theory, is passed into the hall through openings the whole length of the floor. So completely do the officers assume to have it in hand, that the temperature is varied for *after-dinner* meetings, and during a large ball a uniform temperature, it is asserted, can be preserved under perpetually varying circumstances. Discharging shafts take away both the foul air from above and the smoke from the furnaces, and the whole building is in this respect one huge machine!

The interior of the new concert-room, at the end of the Hall, recently finished from the designs of Professor Cockerell, is singularly elegant in detail. It is oval in plan and light in colour, with a considerable amount of gilding. The centre part of the ceiling is flat, and rather low. The effect of the mirrors over the orchestra is very good in daylight: how it may be at night, when looking-glass often fails, we cannot say.

The present aspect of the ground around the George's Hall is almost ludicrous. A costly balustrade (with two columns, *disjecta membra*, rising out of it, opposite the railway station), and gates of great height and size, inclose an area, next the flank of the hall, the level of which is several feet lower than the level of the adjoining road; and out of this area into which you have descended you ascend the steps leading up to the hall—steps down to steps up, in short. Lions, each formed out of more than one stone, with the faces of lugubrious judges, or masks in a pantomime, form part of the ornamentation. The remedy would seem to be simple, and ought to be adopted without further discussion: the outer balustrading, with the columns, of which it has doubtless been said,—

"It is not that the things *are*" rich and rare;  
One wonders how the devil they got there;—

should be swept away, and a level place formed,

by partly lowering the road, and partly raising the existing sunk area. The gates, of themselves, look very much like a joke, being of great and careful strength; 14 or 15 feet in height, surmounted by spikes and other defensive arrangements, with a low balustrade at the side, over which any one may step at will.

The site proposed for the Public Library and Museum is behind the St. George's Hall. Some opposition to it has been offered lately, notwithstanding the circumstance that the first stone has been actually laid. To say the truth, the site, situated as it is on a steep incline, and close to St. George's Hall, is not a good one; but it was shown, at the meeting of the Town Council whereat the opposition was offered, that it united greater advantages than any other available plot of land, and nearly all feeling that, at any rate, matters had gone too far to admit of further discussion, the objection was put on one side.

The plan of the proposed building is said to be good, but the design externally is a poor thing, not likely to maintain the character in an architectural point of view that Liverpool has acquired. A foreign architect, writing to us recently on the subject, remarks,—

"Est-ce que vous savez que les Liverpooliens veulent, pour leur musée, copier *National Gallery de Londres*? N'y aurait-il donc par moyen de leur faire acheter à bon marché l'original, dont tout le monde attend la démolition?"

The praises and compliments heaped on Mr. Brown for the wise appropriation of some of his superfluous wealth, and which must have led many to exclaim, "Something too much of this," ought at any rate to lead to many similar acts, by which society may be benefited and advanced. Mr. Huggins, in his recent address to the Architectural Society of this town, to which we have before referred, made some observations in connection with this event which well deserve publicity.

"What struck me," he says, "most during the recent proceedings in honour of that gentleman was how easy and pleasant a path he had found to immortality compared with what is usually trodden.

Ah! who can tell how hard it is to climb  
The steep where Fame's proud temple shines at last?  
Ah! who can tell how many a soul sublime  
Hath felt the influence of ashy dust,  
And waged with fortune an eternal war?"

Hard, indeed, for the unblest of Plutus, however emboldened by the rare gifts of genius. But here is one literally strewn with flowers, and yet all but untrampled. To a multitude of men in Liverpool, Manchester, Bolton, worth hundreds of thousands, some half a million and more, how small a price is 30,000*l.*—when it could involve no self-denial nor the sacrifice of a single physical or mental enjoyment—to pay for being made the founder of an institution by which intelligent creatures will for ages to come be inspired with the breath of knowledge, trained in the scale of being, and made better and happier through life, and perhaps in death, than they could otherwise have been. Twenty thousand pounds! The price is too low, and ought to be raised: while the wonder should be not at the extraordinary magnitude of the gift, but that it should be at all an extraordinary occurrence, and that Mr. Brown is without competitors.

I must confess that to my own mind the whole of the late and most delicate of that gentleman was a satire on humanity. There is no end in the assertion that rich men are but towards, and have no right to the exclusive use of enormous wealth, which was given them in trust for the general weal, and are bound, in common duty, in common honesty, to do what Mr. Brown has been idolised for doing. So that what in vulgar estimation is princely



generosity, judged by a right standard, is barely justice, or less than justice."

Scores of men in Liverpool, in Manchester, in Leeds, in Bristol, in fact throughout the kingdom, could emulate Mr. Brown without any personal sacrifice, if they pleased; and would do so, if they were to reflect on their position in the right spirit.

"Let us hope," continued the speaker, "that Mr. Brown will have imitators, and even rivals, and that donations will pour in of sufficient number and amount to render our Free Library of Liverpool such a wonder of the age that the Bodleian, the Ratcliffe, and other renowned institutions of the kind shall be no more heard of, and make Liverpool in reality what Haydon must ironically have called it, the Florence of England.

But there is other ground besides the Free Library,—other, and some larger, fields for heroes of the class. We want a museum of geology, of botany, of mineralogy. We want an architectural museum: we want a good permanent gallery of art; a gallery, too, for annual exhibitions of painting, sculpture, and architecture: the present one is, I believe, only rented. We want a score of humanizing and refining institutions that I am unable to name. What capital chances are here for our millionaires—so many passports to immortality! We have, or can soon make, within and around St. George's Hall, an abundance of niches, brackets, and pedestals, which need not be all rated alike, or so high as 30,000*l.* but put up at different prices—say from 10,000*l.* to 50,000*l.* or 60,000*l.* Step in, gentlemen, step in."

We would repeat the observations to the wealthy of each town in England, and cry aloud everywhere, "Step in, gentlemen, step in."

Brief as our notes have been, we have said enough to justify our assertion at starting, that "Liverpool is full of activity."

#### THE GOVERNMENT COMPETITION DESIGNS.

SHOULD any inaccuracies chance to be found in the letter of our correspondent last week on the block plans, our disclaimer of responsibility at the time will be held sufficient. In accordance with what we said at first, we apprehend that the balance of opinion on the Bridge question is not as he puts it; and even had he made no error in his classification, the fact of a considerable number of designs showing a bridge in place of that at Westminster, on a different site, would be not conclusive; for there is much evidence here, as in other matters, that competitors indicate what they think will be acceptable, and thus are not just to their calling and to themselves; whilst, further, the chief of the plans proposing a new site show the disadvantages of it, as we also have said,—the view of our correspondent in one place—that a removal northward would serve only the Park—being really the same opinion as our own under another guise. We shall, however, continue to state what are the different propositions in the street plans, so that our readers may judge how far we were correct in our generalization whether regarding the whole, or the more important, of the plans.

Under the number 68, with the motto, "*Optimus ille est qui minimis urgetur*," are included a general plan and block plan, and a design for the Foreign-office. In these the author, who appears to be a foreigner, retains Mr. Page's plan for Westminster-bridge, but adds another bridge, joining the northern portion of the ground by a line askew, to a point on the opposite side,—not in the direction up, but down the stream. He also shows colonnaded, or other communications between the Offices, crossing Parliament-street. Some objection—having regard to the purpose of concentration—has been seen by many of the competitors, to the break in the system by the very wide street which follows almost of necessity from the instructions. The contrivances for remedying this are, however, in few cases sufficient.

No. 70, "*Crescens*," a design for the Foreign-office, is one of the better works in one, though that not the highest, of the classes of authorship into which the collection might be divided from evidence of drawings alone. This No. 70 may be of what we might call the student class,—a class very different to that of certain works referred to in our first notice,—which had surely come from the least imaginative of "five orders" men, or the hopeless suburban school of shop-fronts and compo-pilasters.

No. 71, with the motto, "*Spes est meum astrum ductum*" (which we copy literally), and the device of a silver star on blue ground, includes a general block plan and drawings, of a design for the War-office. We observe that the author would move Westminster-bridge to a site approached from the middle of the ground which is west of Parliament-street. The general arrangement of the Offices is based on the *datum* of the present Board of Trade building, which would be preserved,—adding a similar front at the south end of new Parliament-street, and building the War-office as a centre. The design is an ordinary arrangement of columns and window openings, with masses at the ends, crowned by domes. The Offices adjacent to the Houses of Parliament, it is proposed should be Tudor, but less florid in character than the Houses. This way of solving difficulties of the site is not a good one; but the present author only illustrates as others do, the disadvantage resulting from the prevalence of more than the one style. He proposes that the main streets should be 114 feet wide, from front to front. The ventilation has been considered; but the corridors would be quite dark (it is extraordinary how general this error is); and the internal fronts of the courts exhibit no decoration,—they have merely holes for light.—We hold that No. 72, "*Victoria and Albert*," is a work of instructive character, properly looked at. Like some other designs, it might show what to do, by the very opposite which in itself it practises. Its pretentious architecture in the building for the War-office and Foreign-office, includes a major and minor order of columns, placed without the slightest harmony of proportion, a portico of seven columns, and bad details. Fortunately there is power in the beauty of good architecture to hold its place, where the good and the bad are, as in this exhibition, side by side—provided only that each is *examined*; but the case is not so with the public always, or where comparison cannot be made. In his general plan, the author moves Westminster-bridge to the limit of the ground—north,—whereby he gets an unnecessary angle in the Lambeth approach, which joins from the Bridge-road.—The design No. 73, "*Arcana Imperii*," and No. 73a, "*Vox populi dignitate urbis*," appear to be by the same hand, though not accordant with one another. No. 73a includes a general plan and a block plan. Westminster-bridge is altogether removed; and a bridge at the Horseferry, and one with approaches from Whitehall—one approach opposite the Horse Guards—seem to be considered sufficient. The blocks of building in Parliament-street would fail in effect, as shown, for the very reason that the fronts are neither quite symmetrical, nor sufficiently different. The author of No. 73, as distinguished from the last, would leave Sir Charles Barry's building; and under the idea of harmonious junction of the styles north and south, he adopts for his design for the War-office, the Jacobean style, or, as he would call it, Anglo-Italian. The objections to the Gothic style are not as the author puts some of them, "*from the enormous expenditure, such as decorative style would involve*,"—these objections start from false premises. The general decorative details in No. 73 are plain, as appearing to the author most suitable to purposes of business, and include rusticated pilasters, and mullioned and transomed windows. The principal front has truncated roofs at the angles, and in the centre a lofty tower.

No. 74, "*In hoc spes mea*," including a general plan, a block plan, and a design for the Foreign-office and War-office in one building, preserves the site of Westminster-bridge; and proposes a bridge approached from Charing-cross. In the plan of the Offices there is a large central court, with a cortile north and south. Portions of the corridors are again

inadequately lighted, as we find them in many designs where one central court is provided. The decorative character is rich Venetian, with arch-headed windows and orders.

No. 75, with the motto "*Deus atque jus*," is the work of a Frenchman, who signs "A. B. d'H. Inspecteur aux Travaux du Louvre," and appears to say he received "honourable mention" in the competition prior to the erection of the Exhibition building of 1851. The drawings here are likely to be passed without observation by many; but they exhibit beauty of architectural detail and precision of drawing such as are not surpassed by any of hand-petitors. The author at first felt the project to be so immense that he should not be able to enter upon it; he, however, sends a general plan, a detailed block plan, and drawings of a design for the War-office and the Foreign-office. The general plan is not very clear at the height at which it is placed, but the author's chief intentions are explained in the block plan. This, as to the bridge, and the careful attention to symmetry, somewhat at resembles the plan in No. 12, also by a Frenchman. As in that case, the site for the bridge would be an excellent one, were the sole object that of providing a communication between the Offices and a corresponding spot on the Lambeth bank; but, for all traffic from the Birdcage-walk, the new site, would add four turns to the present direct route, and to the inconvenience of the Offices themselves. The chief difference between the two plans, is in the omission in No. 75 of the great place in the centre of the system, and (since the portions of ground, east and west of Parliament-street, do not accord in the northern line of boundary) in the placing the bridge to centre with the western ground: thus, the precise symmetry considered essential by both authors, would be gained by No. 12 by trespassing on Great George-street, and by the other by a suggested appropriation of Richmond-terrace. The several blocks of building are shown with galleries of communication across the streets. The internal courts are shown laid out in *parterres*, as also are the sunk areas of the basement in the Foreign-office design, as an alternative suggestion. It is curious, that the value of shrubs and garden-ground towards architectural effect should be more felt in France than in England, where horticulture is so well understood. The importance of the combination was better understood in the buildings of the Elizabethan period. The plans under No. 75, for the War-office and the Foreign-office, are characterized by the same attention to symmetry as the plan we have been noticing. In each Office there is an oblong court in the centre, with staircases well planned for effect; and generally the lighting has been properly considered. The drawings, however, are difficult of examination, not being drawn to the prescribed scale. The end elevations—the east of the War-office, and the west of the Foreign-office—consist of three principal stories on an elevated basement, the latter rusticated horizontally, the ground story having arch-headed windows with archivolt, impost, and plain circular panels in the spandrels; the story over, similar windows, with an order of three-quarter Corinthian columns; and the upper story, short Corinthian pilasters, windows with architraves and cornices, and a general entablature cornice to the building, which is finished by a Mansard roof with dormers. The mouldings on the roof are especially well calculated for effect. It should, however, be observed, that there is the usual arrangement in pavilions; and the centre pavilion has an extra story, with pilasters and panelling, and a dormer, or similar feature, and a lofty curved roof with bold enrichments at the angles and the summit, where there is an elaborate piece of decoration, forming the base for the flag-staff. The whole of this part of the design displays great beauty of ornament, general taste, and the required calculation as to effect from below. The pavilions at the angles have truncated roofs. The angle pilasters, or piers, are rusticated, and have capitals of novel and beautiful design, and they support either statues or vases. The doorways not made prominent, but are marked by the wide flight of steps. In the flanks the central feature is different, and quite subordi-



nate. In the general group, the two Offices appear to correspond in all points,—but they are united by a two-storied building with gateways, a central pavilion and high truncated roof. The style is that of the later French Renaissance. The interior decorations, in the style of Louis XVI. are studied; and, like all the ornamental parts, are drawn with a skilful touch.

No. 76, with the motto "Grande Certamen," is a design manifesting considerable novelty. The authorship would be ascribed to the right quarter, without the help we gave. The drawings include a general street plan, a block plan and views, and drawings of the War-office and Foreign-office as one general building. The general plan has some marked peculiarities. The author would move Westminster-bridge to opposite the centre of the western portion of the ground, but he would place another bridge, and a route crossing Whitehall, at a point a little north of the Horse Guards, the road curving round to the Haymarket. Between the two new bridges, on each side of the river, he would place, if we see the plans aright, Offices and residences, with terraces on arches on the Surrey side. He would open a street from opposite the door of Westminster-hall, running due north across the site of Hungerford-market to the Strand. All the streets proposed are of ample width, one on the Surrey side being 100 feet, and one from the new Westminster-bridge, through the Offices to the Park, being 150 feet wide. Parliament-street, of course, would be widened; and all the streets would have arches over them for communication between the Offices. These arches would be built from time to time, as works of commemoration. The present Board of Trade building, the present author would preserve. The War-office and Foreign-office would form one building, with three courts and corridors, for free communication from end to end, and across,—or the connection of the Offices could be cut off at any time. A door of communication between the residence and the Foreign-office also, appears to have been carefully left. Entire separation is hardly desirable, and would involve constant inconvenience. The corridors would be lighted in great part by borrowed lights, which perhaps are not objectionable where the rooms are for offices, and are themselves well lighted, and may be made conducive to effect in the passages themselves. The principal entrances are from the centre court, which itself is reached from Charles-street, by a *cortile* of three archways and transverse arches. The entrances mentioned lead to halls lighted from the top, and staircases. In the Foreign-office the stairs wind round a large enclosed well-hole, if we may so call it. The entrance to the residence from the park is by a bold flight of steps and arcways, over which, in the first floor, is a loggia of arches. In the decorative effect, the sky-line of the building plays an important part, from the varying heights of the masses and the numerous domed turrets or other features of the same kind. The design shows three or four stories besides an elevated basement, and a fifth story sometimes added, in the centre. The windows are numerous, and are often filled in as to the upper part, with something like Gothic mullions; and similar work is introduced to various arched recesses which occur in some parts, as in projections which are corbelled out like oriel windows, the last being sometimes placed obliquely at the angles. In many other parts ideas taken from the Gothic style are expressed in form; we may mention the centre pier and statue to a doorway of coupled openings. The turrets we have mentioned, which have tall finials; sculpture, freely introduced; and many varied details, complete the design, so far as it can be described in print: for, the design which has most merit is necessarily that which it is difficult to place before the mind by written description: the requisite of novelty which it has, as one element of art, prevents the application of the terms used for forms and details in known styles. Novelty, though it belongs to bad as well as to good art, is a quality which the design now before us certainly has, and conjoined with effective grouping in parts, and pictorially composed masses. The author contends that the classical styles are inapplicable,

and that the Gothic style, when used in accordance with examples, gives little opportunity for applying the materials of our own time, and that it is shown to be unsuited now to public and private buildings by the circumstance of the want of harmony which we observe in towns between churches and public buildings. The style, therefore, which he produces from all sources, may be called the author's own. The construction of the building has been well considered. It is proposed to carry the fire-proof floors by iron brackets and landings, forming a border or shelf, 2 to 3 feet wide, round each room, the brackets being made ornamental. Thus the girders would be free at the ends, and the mode of construction would be at once most suitable to the material—iron, and best calculated to allow accidental fire to be confined to the room in which it commenced.

No. 77, with the motto, "Fortiter et Fideliter," includes designs for the War-office and the Foreign-office, as distinct buildings, in a similar style of architecture. Both subjects, iconographically as well as decoratively, are treated by the author (whose name has been mentioned), with much technical skill and taste. Whether his chance is in jeopardy from the blacked and coloured plans which he has sent in, we are not aware; but most of the competitors have very carefully striven to keep within the instructions, which ought to have been so clear as to leave no room for misconception. Both the designs now before us, are in the rich Italian style, which, with the addition of new features—the high-pitched roofs and pavilions—became naturalized in France, and has been made by that country as much its own, as elsewhere it is Italian. The style, however, now has become no longer Italian, but is European; and there is no reason why results of our own insight into the principles and practice of Gothic architecture should not be brought into combination with the Italian architecture, whether of Italy or of France, by a course not very dissimilar to that taken by the French, but which could be made to end in a style as distinctly English as the other is national and French. The only detraction from the present designs would be one from the fact, that they are much like well-known buildings in Paris. The two Offices are separated by a street 65 feet in width, and in external character are sufficiently accordant with one another to appear to be devoted to similar uses; and yet they are sufficiently distinct for variety. In the plan of the War-office there are four courts—56 feet by 46 feet each—and an octagonal hall in the centre from which the four principal corridors lead out, 20 feet in width each, and join to other corridors round the building. Most of the corridors are lined by columns and arches standing some distance from the wall, leaving space where light is admitted by glazed panels in the floors and ceilings. The lighting on this method—looking both at the area and the position of the openings—would be ample for the short length. The top corridor has a sky-light. Other corridors are lighted from the courts. The central hall—lighted from the top—contains the main staircase. Three flights of stairs meet at a landing in the centre of the hall, whence the upper flight joins the gallery, whence the stairs again ascend. Internal effect has been well considered in the plan of the corridors. The building has three main stories, with a fourth story as attic to the pavilions; but there are also mezzanines with separate staircases above the ground and one-pair floors, in which are well placed the required conveniences. Each angle of the building has a pavilion surmounted by a truncated roof, on the attic story; and in the Parliament-street front there are two other pavilions, joined by a central portion of the building and a lower line of roof with enriched dormer, and terminated by an Italian *louvre* turret. Amongst the decorative details, three-quarter columns and pilasters, and salient columns bearing statues, windows with dressings and pediments—some enriched with sculpture—or arch-headed and divided into lights by a central shaft and console, and the continued impost; a group of three arches as the entrance; the upper story, and the attics, with pilasters and windows double the number of those below; enriched dormers, and angle chimneys; and a railing at the top of the roofs,

are distributed so as to produce a rich effect. In the Foreign-office and Residence, the plan has, we think, a peculiarly distinctive character, in the collection. From a slight error—as to not showing some of the lines dotted—some little time may be required to understand the arrangement of the staircases, which are contrived specially for distinct ingress and egress of the visitors at receptions. The plan includes two courts, with entrance gateways from the Park and a cross-way of communication from court to court. Of the gateways, the one nearest the north is for the entrance of carriages setting down. The doorway under it gives access to the staircase of ascent, 10 feet wide, near the foot of which are servants' rooms and retiring-rooms. From the suite of reception-rooms, the distinct staircase of descent brings the visitor to the landing at the foot, whence he can pass straight to the southern archway, or can turn to the right through a large hall—which occupies the centre of the story on the park side, and is well adapted for footmen waiting—and can enter his carriage that way. Another peculiarity of the plan is, that the Cabinet-room and Foreign Ministers' Waiting-room are so placed, in the centre of the building, that they can be entered by a separate staircase from the way between the two court-yards. The Minister's private residence is at the south-western angle, the entrance being from the southern archway before mentioned. The public offices are entered by an arcaded loggia in the eastern front, and the inner hall and public staircase are on the northern side of the entrance-hall. The offices of the Secretary of State may be completely shut out from the more public portions of the building if required. The corridors are lighted similarly to those of the War-office. A mezzanine floor, for the required conveniences, is arranged over the corridors and smaller rooms. In the exterior the number of stories and the angle pavilions are arranged as in the other design, but are varied in decorative enrichments. The roofs of the angle pavilions are formed in curves of contrary flexure, with bold mouldings and enrichments, and have dormers and circular openings,—whilst the centre pavilion is finished with a pediment and sculpture, and high truncated roof, also much enriched, and is flanked by projecting masses in the facade. Salient columns supporting statues, candelabra, and sculpture, are used throughout the design, with great richness of effect as the result. Every part of these designs will well repay study.

Lower in merit is No. 78, with the motto "Hoc Propono," attached to a general plan, a block plan and a design for the two Offices in one building. The author keeps the site of Westminster-bridge. His design for the Offices has the general fault as to the corridors, and externally exhibits an order of Corinthian columns the height of three stories, and an attic with pine-cones as the termination of the pedestals.—No. 79, with the letters S P Q L, includes a general plan, a block plan, and a design for the War-office and the Foreign-office in separate buildings, with a communication. He would remove Westminster-bridge altogether, place a bridge at the Horseferry, and one opposite the Horse Guards, near which (or between Whitehall and the river) he would have a new parade-ground. He would also extend the line of the Haymarket to the Park. In the plan of the Foreign-office, the residence next Downing-street has archways for carriages to set down in a small court. The details of these designs appear to have been taken from books without real study, or freshness of invention.—No. 80, "Omnia vincit Labor," by a foreigner, is a poor work; but the author is at least consistent, for, after removing Westminster-bridge a little farther north, he utilizes the approach by carrying a part of his office-buildings up to the clock-tower. To the consternation of their architect, we should think, he would effect the "completion of Westminster Palace" by erecting a building in front of the Peers' Offices and Victoria Tower included.

No. 81—

"Idem  
Pacis eras medius que belli,"—

consists of a block plan, and designs for the War-office and Foreign-office as detached build-



ings, marked by some originality and effect, but altogether better suited for a building for a different purpose, and not a national work. From the block plan we find the removal of Westminster-bridge contemplated, with the erection of a skew-bridge with an approach in continuation of Charles-street. In the plan of the War-office there is a court of irregular form divided on the ground-story. In a small portion of the plan the sides of the court are but 18 feet apart, so that the lighting might there be defective. The entrance from Parliament-street is by a bold arch with coupled columns and side openings, forming an effective *cortile*, and beyond this is a staircase semicircular on plan, lighted from above, with corridor round. The principal front is remarkable for its bold masses and recesses, its few large arch-headed windows, of various proportions, its prominent rusticated work, and coin-stones cut with facets, and its panneling to the top story. In the principal mass, the centre in the top story is retrenched, and the sides are finished with pediments. Each of the two recesses is filled up on the ground story with a loggia of two arches. The Foreign-office and the Residence are distinct in external design, as in plan, with the exception of a communication by colonnades on the ground story. The corridors are lighted by circular lights in the floors, and these could not be deemed sufficient. The entrance to the Official Department, is from Charles-street, beneath a great portico, hexastyle and Corinthian, flanked by turrets; and the Residence has a carriage-porch next the park, a rusticated basement, two stories of arch-headed and Venetian windows, continuous enriched impostes, coupled columns and balconies, and is surmounted by a dome on a low tambour and square podium.

No. 83, with the motto, "The British Forum," as the work of an Italian, may be looked at with a certain kind of interest. It does not, however, testify to the vigour of our art now, on the very soil from which since the period of the Roman empire, all the styles of architecture except the Gothic, sprang. Since the Louis XIV. ornament, Italy cannot be said to have developed anything new. The inquiry into the reasons for this would be a curious and interesting one: that there is no inherent feebleness—no finality—in any phase of the Italian style, we believe can be shown from what has been effected through it, as also from the works in the present exhibition,—neither is it clear the political state of Italy has to do with the condition of art, as often supposed; for we apprehend that this state is not less favourable on the whole, than were the circumstances under which the original works were produced. Whilst, however, the state of political subjection is similar to what it ever was, the noble families no longer exist, possessed of the same wealth and influence; therefore, new buildings are not asked for, and our profession, when not drawn into the department of engineering—in which the Italians have great skill—is absorbed in antiquarian studies and investigations, by which exclusiveness of pursuit the artist mind is deadened, and the deficiency in power becomes fixed. This question, however, we cannot now pursue. No. 83 includes a general plan, a detailed block plan, and separate designs for the Foreign-office and War-office. The motto indicates one idea, on which it is based. Retaining the site of the new Westminster-bridge, the author would add triumphal arches, quite unaware how inappropriate these would be, considering the traffic of London.

In the plans of the Offices, we observe again remarkable defects, such as distinguish the old Italian buildings, from those of our own period. The convenience of having passages of communication, instead of going through one room to get to another, appears to have been generally felt only in our times; and still it seems we have to learn something as to the plans of those passages—with due regard to lighting and convenience. The Italians, however, judging from the imitations of their works in this country, submitted to a considerable amount of inconvenience. The peculiarity referred to here as a defect, is remarkable in the plan of the War-office, in No. 83. External loggias are, in their place, excellent things; and

these have not till lately been adopted in English architecture to the extent that might have been expected. But, they do not answer as the only means of communication from room to room. The elevation for the War-office is of indifferent Palladian character. In the design for the Foreign-office there is little merit in the plan; but the elevation is of rather better character, disfigured, however, by the royal arms in bronze, of enormous size at the top. The style is Venetian, and the centre has well-proportioned loggias in each floor, with arches on columns, and some of the angle piers are in good taste.

We shall resume our notice in another number.

Notification has been made that the Exhibition will be closed on Saturday, June 6. The Hall will be open for the exhibition of the models for the monument to the Duke of Wellington, early in July; and it is stated that those designs for the Offices which may have been selected to receive the premiums will be exhibited at the same time.

#### CORRESPONDENCE ON THE WESTMINSTER DESIGNS.

I WOULD not willingly add to your editorial troubles at the present exciting season; but, as a subscriber of many years' standing to your valuable Journal, and an admirer during that time of the fair and temperate spirit which has characterized its critical department, I must beg to be allowed to say a few words on the communication in your last number signed "E. L. Garbett."

I pass over the oracular spirit, which pervades the former part of that document, and its appropriate sequel, the mode in which distinguished reputations, both living and dead, are referred to. I come at once to its laboured attempt to fix an opprobrious sobriquet to the architecture which three-fourths of the competitors for the Government Offices have adopted—characterizing it as the per-centage style. It is true that, like a pointless arrow, the witless epithet falls harmless to the ground—but look at the *ennam* displayed. He would insinuate, that men who have been labouring with such indelible zeal and energy—many in the midst of pressing professional avocations, all with a great outlay of time and money—with very faint hopes of any reward, and often supported only by an enthusiastic love of their work for its own sake—that such men have selected their style, on the base, paltry, contemptible principle of its combining the least amount of labour with the largest amount of pay.

The malignity of the suggestion is only surpassed by its absurdity. Why, I for one can tell him, from the bottom of my heart, and there are scores to re-echo the sentiment, that I would rather associate my name with works conceived in the spirit of those "grand" styles which he affects to despise, for one per cent. remuneration, than with some of those morbid creations which he affects to admire, for ten times that amount.

But he also supplies us with tables, professedly based upon facts, and presenting an analysis of the various designs; and against the truth and accuracy of these I protest, as the result of his own reading of the Government instructions, and distorted view of the concrete designs.

I do not for a moment wish to provoke a discussion on this subject. Our works are now before a high, dignified, and able, competent tribunal, and few would care to vindicate themselves at such a banquet of folly.

I only ask to be allowed to protest against his aspersions, and express a hope that the pages of the *Builder* will never be stained by so important a piece of clear evidence as the Middle Ages, which, with a calm and dispassionate view of the merits of the designs, seem to have been treated with its architecture. I end, as you do, amen.

#### A COMPETITOR FOR THE BLOCK PLAN.

SIR—If there be advocates of Gothic Art among your correspondents I have written to oppose. Our great gun has been fired after another, and common sense makes no reply, and takes no pains to disguise public opinion of the attempts to trammel it with the tedious repetition of the Pointed Arch and the ceaseless cusp; as though one style alone were suited to our climate, and as if that style alone were truthful. Our enthusiastic apostle of Christ has left the Gospel to plead for Government Offices in this Byzantine style. Your ever devoted correspondent Mr. Garbett has fallen into the beautiful snare, on the Continent, of the Middle Ages, that I happen to be decorated with classic features. There is not an architect who travels abroad but returns imbued with the desire to reproduce the

charming forms that have rendered his rambles so delightful. This remark holds good with the authors of most of the Gothic designs in the present competition, and renders the praises of their critics highly ridiculous, claiming an English origin for what is actually an importation from abroad; thus Nos. 85 and 116 are decidedly Italian, and the "Noble Vindication of English Art," No. 129, is most evidently continental. In thus rebutting the philologists, I am desirous only of advocating the adoption of a really truthful and sound system of architecture, in which the materials and construction of the present day should be used without recurring to styles long gone by.

Surely it is not desirable to obscure our windows with stone mullions, or mince up fine sheets of glass into quivers, any more than we should darken the streets in our gloomy climate with heavy classic cornices or shaly porticoes. As long as we build in brick, the segmental arch is a proper constructive head of an ordinary window or door. Decorate them if you will: sculpture may be applied here, as elsewhere, and is, as Mr. Ruskin well said, a more beautiful mode of enrichment than plain mouldings. But for the proposed Government Offices we are not confined to brick: the building materials of the whole nation are available; in most freestones, where large blocks are used as lintels, straight lines are easier to work than circular, and the square-headed window is the natural result. It was a favourite maxim with the late Mr. Pugin that small stones only were suited to Gothic architecture, and yet constructively a large slab is preferable to the numerous joints between small blocks. I cannot agree with Mr. Garbett that the mere fact of repetition, as in Italian buildings, is a fault: a tree is not less beautiful because it is covered with leaves so like each other as not to be distinguished at a glance: neither does an animal lose any of its beauty by having one eye to correspond to the other, or its ears exactly alike. On the whole, therefore, it seems quite unnecessary to be restricted to one arch rather than another: treat your work with taste and judgment, and be sure that light and shade, and elegance of outline, will please as well in one shape as another. And as to grouping the new buildings in harmony with the Abbey and Parliament Houses, adopt the Gothic principle of working out the characteristics of the present age, and the effect will be far more satisfactory than could be accomplished by the servile imitation of the forms of Mediaeval English Art.

FORWARD.

Seeing that the *Builder* of last week states that Messrs. Ansell and Pownall are appointed assessors to aid the judges in selecting the best designs; perhaps it can also inform its readers what is meant by these three much-used words. Do they mean the best plans for the purpose with suitable facades, or the best facades? and in either case are they to be the best in the Hall, or the best in accordance with the instructions? Lastly, when a sub-committee chose the prettiest drawings laid before them, and was asked if the prize-sets fulfilled the instructions, the sub-committee ingeniously answered, that when it made the decision the instructions were not the rule: there was no difficulty in guessing what that meant. Certainly the number of competitors who have kept to the instructions is so unusually large, both as a majority of the profession as of the candidates, that I do not envy the fate of the judges, whoever they may be, if the Westminster-hall Exhibition terminates in a choice made "with the instructions upon the table;" and which is unlucky for any bad choice, there will be no hope of avoiding much criticism on the selected designs; a criticism which will be surely more furious if the prize-drawings are removed from public view.

PERCE.

Will you allow me to offer a few suggestions as to the Government Offices competition?

1st. That the *plans* of the competitors, most of them being well known, be added to the drawings, and thus be before the eye of the exhibition.

2nd. That the whole of the *block plans* only be removed into a separate room, and hung in a line, and determined on by the judges first, *i.e.* before the division on the elevations—NB The larger plans only would suffice.

3rd. That the whole of the *plans of steel elevations* be placed in a continuous line, and viewed with the eye, in a separate apartment, so that the various merits of the designs may be, without confusion, studied. They should be placed, the Classic on one side, and the Gothic on the other, of some long gallery. By the committee-rooms corridor of the Houses of Parliament.

4th. That the *ground plans* only answering to the above elevations be hung immediately below the elevations, that the result of the comparison of the elevations may be made clearer. The above three drawings, *viz.* the block plan, ground plan, and principal elevation, will enable the judges and the architectural public to form, without the confusion consequent on so many drawings, a fair judgment by comparison.

5th. That one, or two, or three independent professional judges—the only competent judges—be selected to go through the whole of the drawings—the block plans first, then the drawings for each department, to report on each set individually, giving the reasons for and against each block plan and design. Thus each successful competitor would know the reason of his success, the unsuccessful ones



the reason of their failure—the only return they can have, and which they ought to have. But the professional judges be paid, and liberally paid, for their work; and that they respect to the commission; the commissioners, as at present appointed, in the way of dealing with the work. In this way will the advantages of a competent professional insight, and the prestige of a royal commission, be obtained, together with a fair satisfaction to those who shall be unsuccessful.

C. B. A.

# SOME RECOLLECTIONS OF THOMAS BEWICK, THE ENGRAVER.

THE value of the labours of Thomas Bewick, and his brother Robert, in advancing the arts amongst the masses in this country, can scarcely be overrated. Before the days of the Bewicks, engraving on wood, to which this and other journals are now so much indebted, was a dead letter—the art being considered as only suitable for the rough and most common description of work. It is true that, before the time of Thomas Bewick, Albert Duer and others had cut fine things on wood, but these works were not so familiar to the people as at present; in fact, few had an opportunity of seeing them. It is curious to note the circumstances which led to the usefulness of the Bewicks, sons of a small farmer. They were born at Oringham-on-the-Tyne, a few miles from Newcastle, a place surrounded by beautiful scenery, and which had formerly been a Roman station, and had in other ways interesting associations.

At the age of about fourteen years, Thomas Bewick was apprenticed to an engraver named Drury, at Newcastle-on-Tyne, where he was taught to engrave door-plates, dog-collars, silver plate, moulds, and similar matters. At that time the faces of the "eight day clocks," as they were called, were chiefly of brass, and were elaborately engraved with flowers and dispersed patterns. In this department of work Thomas Bewick soon acquired great skill; and even when his talent as a wood designer and engraver had been recognised, he was often pleased with the opportunity of cutting a clock-dial and boasting to his pupils,—"Ah! boys, many a one of these I've done."

People are surprised when, going over the various parts of Edinburgh and the neighbourhood which are connected with Sir Walter Scott, with those who had known the great wizard and his haunts, they find how common-place all particulars seemed to them: the place was not so much prized in his own land as elsewhere. The kind, affable, and homely manners of Scott rendered him familiar to all around him: it was something of a similar case with Bewick, who was so simple and unostentatious in his manners, that few of his neighbours, and, we believe, not he himself, were aware of the position which he had gained amongst the artists of his country.

Born in the country amongst woods, and rivers, and streams, and near to old castles and other picturesque and curious matters, the mind of Bewick was impressed with images which he endeavoured to convey in pictures to the multitude. As one knew better than Thomas Bewick the expense and slowness of printing book illustrations from copper plate, he had, besides his usual pursuits, often himself worked at the copper-plate printing press, and he set about designing and engraving woodcuts which could be printed with the letter-press.

We have had in opportunity of examining some of the blocks which were engraved for the "History of British Birds," and these would surprise many of the wood-engravers of the present day. In parts they are sunk and followed to a considerable depth, in order to make the light tints suitable to the press printing. It is extraordinary to compare this primitive machine with all those applications of steam which have, notwithstanding the rapidity of production, enabled us to dispense with the troublesome process of lowering and on the sunk surface engraving the tints and textures. We, however, propose in this brief article not so much to examine into the artistic merits of Thomas Bewick, as to give our personal recollections of him.

At the east end of the famous church of St. Nicholas, in the cathedral as it is called, in one of the houses which surround the church, a mass of mouldering dead, a plainly-painted board announces that the place was occupied by "Thomas Bewick, engraver and copper-plate printer."

On a reading the inscription, the cut of a passage, might be noted the copper-plate-printing-presses, busily at work throwing off invoice-heads, tradesmen's cards, and such like necessaries. The house was but two stories high, and on the door of the upper part was painted "T. Bewick's Workshop." Here, for several hours in the day, the engraver might be found busily employed at his desk in a little sanctum: on one side was a small glazed door, which

afforded the master an oversight of and communication with the pupils, and through this opening Clemmell, William Harvey, Nesbit, and others, who have been chief instruments in advancing the useful art of engraving on wood, have received many a useful lesson. On the walls of this study, or workshop, were cases of stuffed birds and fishes, and some choice old prints. The place was plain and homely, like its inmate, who, usually dressed in a suit of grey of useful rather than ornamental cut, was ready to attend upon customers or to receive a visit from some brother artist or naturalist.

Thomas Bewick was a tall, stoutly-formed man, of pleasant yet plain manners, and was always ready to speak his mind, disliking much the flattery which was at times bestowed by those ignorant of art on his works.

During the printing of his illustrated books, a part of each day was spent in superintending the pressmen, who were engaged at the old-fashioned presses in printing the sheets; and even when up in years he spared no pains in getting studies from nature for his drawings of natural history subjects, and when busy with his small cut of the peacock he travelled from Newcastle to Elswick, a distance of more than two miles, upwards of a dozen times, to catch the opportunity of sketching this beautiful bird with its tail displayed.

Most of the examples which illustrate the history of birds were in the same way carefully studied from nature, as may be at once seen by comparing the animation of those done from the life with others which have been drawn from skulled specimens.

Thomas Bewick was also an excellent musician, and played well on the Northumbrian bagpipes. On the news of the Peace of 1815 arriving at Newcastle, the church bells rang, the cannon on the castle roared, and Bewick buckled on his pipes, and caused his son to do so likewise; and, playing an appropriate tune, they marched several times in triumph round the churchyard.

During the early part of his life Bewick visited London, but the publishers there were ignorant of the merits and uses of wood engraving, and he received so little encouragement, and liked so little the bustle of the place, that he was glad, as he said, to shake the dust from his feet, and establish in a corner of his well-loved neighbourhood, which no doubt often intruded their images in his mind in the crowded thoroughfares. Even while in London he did not neglect the study of nature, but wandered to Bagnigge Wells and Maiden-lane to study the docks and other plants which grew there in profusion. It is to be regretted that so few of Bewick's original sketches have been preserved, for their faithfulness must have made them valuable.

It would be well if the wood engravers of the present time would, more than is now practised, follow Bewick's example with their pupils. He did not set them down at the beginning of their career with small blocks; and, without any knowledge or practice of drawing, make them, until the expiration of their engagement, cut tints and textures without their being able to make a sketch of the most simple kind either on paper or wood. This is not the way to raise wood engraving as an art. In winter nights, in the old-fashioned workshop, the youths sat down by candle-light to their drawings, and in the summer evenings strolled to the hedge-rides, and studied art in the best of schools. Some of the exquisite drawings of coast scenery which are to be found in Bewick's volumes are the work of Clemmell and others of his pupils—a circumstance equally creditable to the master and themselves.

At the time of their production, the lion and some other engravings of animals on wood, which were about six inches square, were worked upon with water; indeed, it was no easy matter to find the box-wood necessary for cuts of this size, for then the plan of joining small pieces of wood together had not been invented, and it was by no means unusual for a block to crack so much as to be useless either in the process of engraving or printing. Harvey's large cut of the Assassination of Dea was engraved on a joined block, but although it was clamped with iron, it was not long able to bear the working. We believe that the method of joining the blocks as now in use was brought to its present state by a Frenchman, whose name we have never been able to discover. Perhaps some of our readers can enlighten us on the subject. But for this plan, the illustrated papers could never have been produced. An improvement in this mode, however, is even now wanted. Is there no hard wood, say in Australia, from which blocks of larger size than is attainable in box wood, could be cut?

NEWGATE.—The reconstruction of Newgate, from the plans of the city architect, Mr. Bunting, has been commenced. We shall give particulars hereafter.

## FOREIGN INTELLIGENCE.

*The Kölner Donblatt.*—It is owing to the activity of the present time that the building of an edifice gives rise to the publication of an especial journal. The *Kölner Donblatt* has now existed from 1842 to the present period, and contains such an amount of interesting notice relative to the *Dom* itself, as well as the architecture of Cologne and the Rhineland in general, that it has become necessary to compile an alphabetical register of the whole series. M. Reichensperger, M.P. of Prussia, is at the head of the undertaking.

*Official Statistics of Railways.* Two most important works on this subject have been lately published. "Documents Statistiques sur les Chemins de Fer," published by the French Secretary of State for Agriculture, Commerce, and Public Works. For its compilation a commission has been formed, consisting of members of the directors of railways, engineers of mines, and of bridges and roads, presided by Citizen Count Dubou. The other work is the third volume of the "Statistische Nachrichten von den Preussischen Eisenbahnen," published by order of the Prussian Minister of Commerce, Industry, and Public Works, by the technical bureau of railways. It contains the results of the year 1855, and likewise a general chart of Prussian railways, with sixteen plans of *niveaulement*.

*Art in Russia.*—There has arisen of late, in St. Petersburg, a Museum of especial Ethnography, the new Museum of the costumes and weapons and armour of all periods of history and all nations. Of especial completeness here are the specimens belonging to the great Slavonic nations of Russia, but even the Medieval period of Germany has not been neglected. While, in 1848, many of the royal arsenals of the Continent were plundered, their worthier contents found a way to the Russian capital, and the visitor from any country will find here former acquaintances of his. This museum has now been described in six volumes of text, and illustrated in four large folio volumes of colour-printed plates. The Library of Dresden possesses already this, as well as the work on Crimean Antiquities. The St. Petersburg National Gallery has now been enriched by the complete arrangement of the Luichtenberg bequests of pictures, which Eugene Baillat has had partly collected when Viceroy of Italy. To this is to be added now the collection Parbaigne, formerly of Venice, and considered the finest after that of the Academy. Amongst these are above seventeen pictures by Titian, from his very first pupil sketches up to the time when this spirited man, upwards of ninety years of age, still had lost little of his former warmth and imagination.

## THE GREAT BLAST AT HOLYHEAD.

In presence of upwards of 1,000 persons, a portion of the Holyhead mountain, which is 122 feet in height, was displaced, on the 21st inst. by a blasting operation of unparalleled magnitude. The removal of a considerable portion of the mountain is necessary for the formation of the new harbour of refuge, which is now being constructed under the superintendence of Messrs. J. and C. Ribby, who personally superintended the operations, assisted by Mr. G. C. Reibherg, the resident engineer of the firm. Two or three of these operations have already taken place, and so eminently successful were they, as to induce the engineers to attempt another on a much larger scale. The scheme now contemplated the displacement of 120,000 tons of rock, by the application of 18,000 lbs. of gunpowder. At the last moment, the engineers determined still further to extend the operation, and for this purpose two additional chambers of mines were prepared, making the weight of gunpowder used 21,500 lbs and the body of rock displaced, no less than 160,000 to 200,000 tons, being even far more than could have been calculated on. At a given signal, all the chambers were simultaneously ignited, and the huge body of the rock and mountain was upheaved, and fell down on the side in large fragments of several tons each. It will be removed by railway for the purpose of completing the breakwater, from which it is about two miles distant.

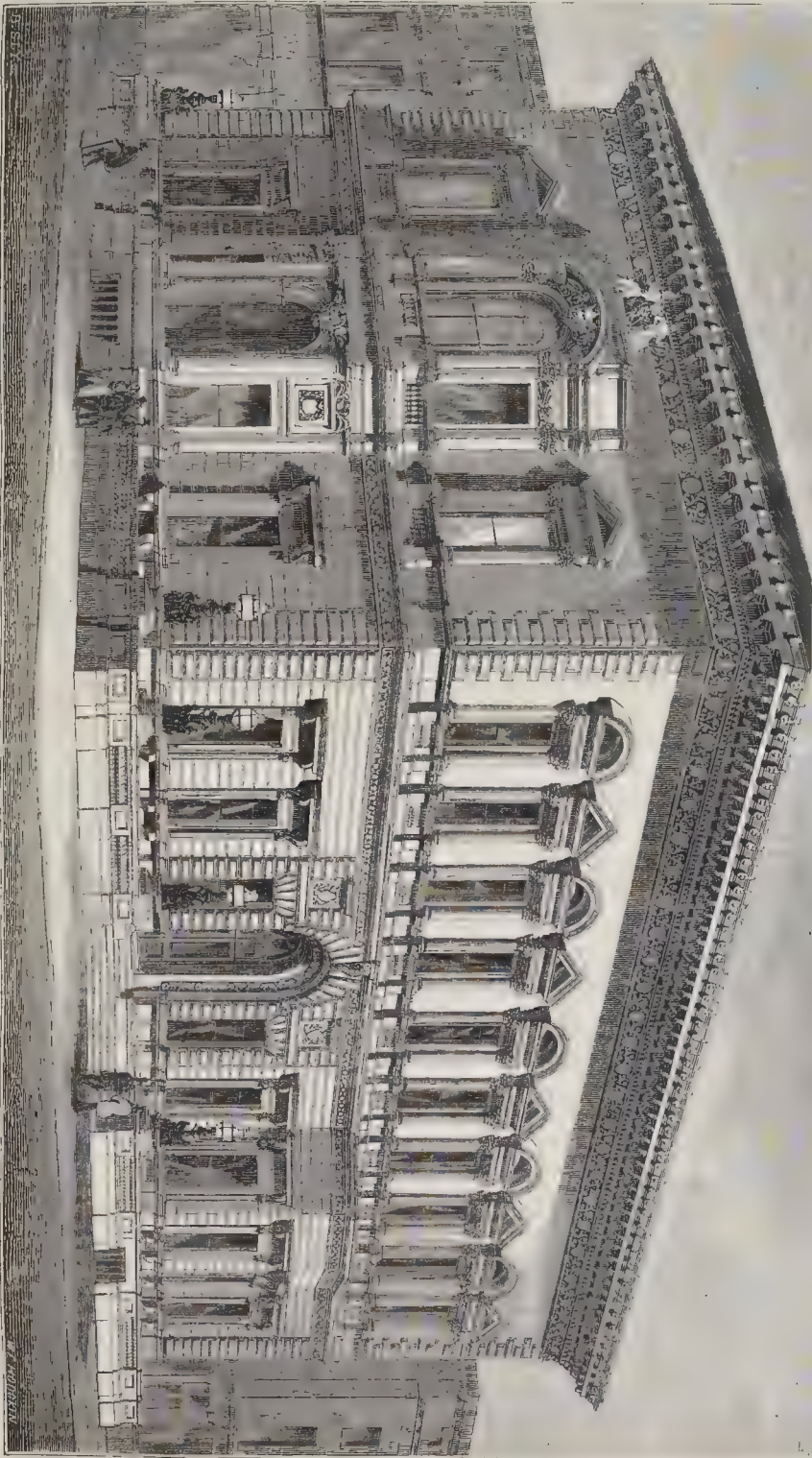
TO EXTINGUISH FIRES EFFECTUALLY.—As soon as the fire-engine is in readiness to work, stir into the water seven or eight pounds of *potash*, and continue to add the same quantity, as occasion may require; taking care that it be directed against the timber, and not wasted against the brickwork. Where time will admit, dissolve any quantity of *potash* in a vessel of water, and as fast as it dissolves, mix a pailful in the water in the engine pretty often. Wood, steeped in a strong solution of "phosphate of ammonia and borate of soda" becomes incombustible. If trees when cut down (the sap being extracted) are treated by these alkalis, fires will be next to impossible.—J. B. N.

\* During several years of his apprenticeship Thomas Bewick walked to Oringham to see his parents, and back again, and did not by the way shut his eyes to natural accidents.









THE UNION UNITED SERVICE CLUB, REGENT-STREET, LONDON.—Messrs. NUSON AND SONS, ARCHITECTS.



## ROME.\*

In the consideration of so disputed a point as the topography of the Roman Forum, there is one peculiar feature in the claims to consideration of the theories of the late Commendatore Canina, that must not be lost sight of,—namely, the fact of his being an accomplished architect, as well as a profound and erudite antiquary. San Gallo, Labacco, Serlio, Palladio, Scamozzi, Desgodetz, and Piranesi were architects, but they were no topographers, at least, according to modern requirements in such. They could rear again the prostrate building, give back its fair proportions to the ruined portico, and cover the crumbling marble blank with living sculpture; but to fix the site where the temple or the basilica once stood, where all is now empty space, or modern brickwork, was not of their capacity. On the other hand, the great Italian and German topographers, from Flavio Biondo to Bunsen and Becker, though so eminently fitted by their knowledge of the classic authors for the task of penetrating the obscurity in their writings that has proved such a legacy of discord to the world in general, possessed not that knowledge of architecture which is of such material assistance in the laying out of an unfavourable site for a fixed purpose; and which, if well performed, affords of itself so strong an argument in the reading of a passage of doubtful import.

In the case of Canina, however, both these qualifications were united in an eminent degree, and however mistaken he may have been both in his earlier and latter theories, his excellent scholarship, his thorough knowledge of the forms and requirements of the various civil and religious edifices of the Eternal City, the indefatigable industry with which he could mould the most inauspicious site to a particular structure, his minute attention to detail, and extraordinary devotion to the great object of his honourable ambition, if not constituting of themselves an argument in favour of his particular views, yet entitle those views to that consideration and deference which his greatest antagonists have richly honoured in paying to them. The author of twenty-four folio volumes of plates, and ten or twelve octavo volumes of learned text, there must of necessity be much in his works that must be ascribed to his own glowing imagination only; but, on the other hand, there is nothing in his elaborate restorations for which good reasons may not be assigned. Right or wrong in this topography, his notions of the dignity and magnificence of the Eternal City cannot fail to instruct and impress. Take, for instance, his views of the Forum, first in its desolation, then as he conceived it to have been in its imperial splendour. Looking from the Rostra Julia towards the Capitoline, on the left, the Basilica Julia raises its imposing mass; the Temple of Jupiter Tonans, on the ascent of the hill, comes next; and to it succeeds the Temple of Saturn and the Arch of Tiberius; in the centre, side by side, rise the Temples of Vespasian and Concord; and to the right, the Carcer Mamertinus and the Basilica Emilia. The background is filled up, to the left, by the edifices of the Arx; to the right, by the Temple of Jupiter Capitolinus, towering above all; whilst in the foreground the Equestrian Colossus of Domitian, the Column of Phocas, and numerous statues and monuments bewilder with their profusion.

Viewed from the opposite extremity, at the foot of the Campidoglio, the Forum presents an equally imposing spectacle. To the left the Arch of Septimius Severus forms the chief object in the foreground; the Basilica Ulpia and Statianæ immediately follow, and are succeeded by the Basilica of Constantine, partially concealed by the Temple of Antoninus and Faustina; whilst in the middle distance, the Basilica Fulvia, the Temple of Julius Caesar, and the Temple of Venus and Rome stand out against the bold background of the Colosseum. The space to the right is occupied by the Arch of Titus, the Curia Julia, Temple of Vesta, Basilica Julia, Arch of Tiberius, &c.; the buildings of the Palatine forming the background on that side, and the area of the Forum occupied, as before, by statues, &c.

Such are the buildings that Canina groups round the Forum. In the site of his Forum, and in the direction of its longer and shorter axes, he finally agreed with Bunsen, Becker, and the German school in general, with the candour which distinguished him, at once admitting the indisputable evidence of the new discoveries, but retaining for it the form of a parallelogram instead of a trapezium, and differing much in the position of the surrounding buildings. So bigoted, on the contrary, was the late Professor Nibby to the old opinions, that in his latest work he adopts the expedient of making the line of pavement in front of the Basilica Julia mark the northern limit of the Forum instead of the southern, and allotting the space between the Column of Phocas and the Arch of Septimius Severus to the Forum of Caesar!

The rule laid down by Vitruvius for the proportioning the length and width of Fora, in the ratio of two-thirds of the former to the latter, was not applied to the Roman Forum, if the limits now assigned to it be correct; and the probability that, if different, he would have noted the exception, has not been lost sight of as an argument for certain views of the question.

Of the probable situation of the Græco-stasis, we before spoke. It was so called from the fact of the Greek ambassadors, and perhaps also deputies from other foreign or allied states, "ubi nationum subsisterent legati qui ad senatum essent missi," being allowed to stand there to hear the debates, just as the Stations Municipiorum appear to have been places allotted to municipals for the same purpose. It was merely an open space, elevated above the surrounding level, and of similar character, as far as can be now judged, was the Senaculum, on which the senators were accustomed to assemble before entering the Curia to deliberate. "Senaculum vocatum ubi senatus aut ubi seniores consisterent."

There is no account of any building, during the republican period, occupying the narrow end of the Comitium, where the Temple of Julius Caesar was afterwards erected; but on the south side may be placed, with almost absolute certainty, the Temple of Vesta and its appurtenances. Of these, the Regia certainly fronted the Comitium, but whether the dwelling of the vestals (the *Virginea Domus* of Martial) also fronted the Comitium we have no further means of deciding.

We have already given a brief account of the history of the Forum during the first two centuries and a half of its existence—that is, under the kings. One of the first works of the republic was the completion and consecration of the Temple of Jupiter Capitolinus. The next work of importance had its origin in the beautiful legend connected with the battle of the Lake Regillus, "a conflict," as Niebuhr remarks, "between heroes like those in the *Iliad*." The legend states that the dictator, Aulus Posthumus, having vowed a temple to the Dioscuri, the twin gods, Castor and Pollux, were seen upon white horses, fighting in the ranks of the Romans, during that eventful day, and that, before the battle was well over, the same gigantic horsemen appeared in the Roman Forum, and announced to the people assembled in the Comitium the happy result of the conflict. Near the fountain of Janua, where they gave water to their horses, the temple to their honour was erected, and the eloquent verse of Macaulay has found a grateful theme in recording the event:—

"On rode they to the Forum,  
Unseen, till they saw the towers,  
Two and a hundred feet high,  
Which the Romans in their towers  
Venerable drew up to Vesta,  
They were the Dioscuri.  
And when the Dioscuri saw the wall  
That sprang to Vesta's fan,  
As I stand on an oak mounted,  
And ponder Vesta's door,  
Then, like a blast, away they pass'd,  
As the wind goes to their moor.  
Here, hard by Vesta's temple,  
Build we a stately dome  
To the great two brothers,  
Who fought so well for Rome."

The exact site of this temple is a matter of great dispute, though in its *absence* all are agreed. Bunsen places it in front of the Forum, between the Basilica Julia and the Temple of

Minerva Chalcidica (to which latter he assigns the three Corinthian columns so long known, from the statements of Lucio Fano and Marliano, as those of Jupiter Stator, but which Foggia referred to the bridge of Caligula; Nardini and Nibbey to the Comitium; Canina to the Curia Julia; Bunsen formerly to Castor and Pollux and Dyer latterly so); Canina places it behind the Basilica Julia; Becker in much the same position as Bunsen and Dyer, as we said before, where the three columns stand. It was commonly called *ades Castoris* only; and Cicero describes at once the importance of the temple and its position in the words, "In ade Castoris, celeberrimo clarissimoque monumento, quod templum in oculis quotidianoque conspectu populi Romani est positum."

It was restored by Metellus Dalmaticus, and rebuilt by Tiberius. Caligula connected it with his palace by breaking through the back wall, and found a senseless gratification in placing himself between the statues of the twin-gods to be adored by the people. In commemoration of the legend, an annual procession took place of the Roman knights, in state attire, and crowned with olive, who, leaving the Temple of Mars outside the Porta Capena, traversed the city, and proceeded across the Forum to the Temple of Castor and Pollux, where they offered their homage.

The invasion of the Gauls, A.U. 365, must have almost destroyed the whole city, as the Romans entertained serious thoughts of migrating to Veii, but the patriotism of Camillus changed their purpose and the city was rebuilt, and in memory of the event the Temple of Concord was founded upon the Campidoglio. In U.C. 410, the Temple of Juno Moneta was consecrated upon the Arx, where the house of Manlius stood. In 449 a small bronze shrine was erected to Concord, upon the Vulcanal, by C. Flavius. In 542 a fire is recorded by Livy, which destroyed the Atrium Regium, the Forum Piscatorium, the Septem Voteres Tabernæ, and other buildings.

Of the several Basilicae of this period we have already spoken. The same diversity of opinion which attaches to the sites of most of the buildings of the Forum is entertained with regard to the Basilicas also, except the Julia and Emilia, and the difficulty existing about a right understanding of the several editions of the latter we before alluded to.

At the time of the erection of the Basilica Emilia the same consul whose name it bore erected a Temple of Concord upon the Clivus Capitolinus. And in the same year the Forum was adorned with the triumphal arch called Fornix Fabius, or Fabianus, erected by Q. Fabius Allobrogicus, in commemoration of his triumph over the Allobroges, but of the position of which we are by no means certain. The few other works about the Forum during the republican period were merely restorations or alterations. Sulla, when dictator, made certain changes in the Curia Hostilia, and after its destruction in the Clodian riots it was rebuilt by his son Faustus. Caesar, however, caused it to be pulled down in B.C. 45, under pretence of having vowed a temple to Felicitas, but in reality to efface the name of Sulla.

In 652, Q. Lutatius Catulus commenced the substructions of the Tabernæ on the Capitoline, as proved by an inscription found upon the spot recording the event.

With the dictatorship of Julius Caesar was connected that new era in the history of the Forum which was the cause of its subsequent appearance under the empire, and the building of a new Curia was one of its most important features. The exact position occupied by the Curia Julia is another disputed point, but we shall not be able here to go into the arguments, and must content ourselves with the results.

Suffice it to say, therefore, that Canina assigns to it the three columns standing near St. Maria Liberatrice; that Bunsen concludes it to have been the building of which the lofty brick walls are still standing behind the Temple of the three columns; that Becker, agreeing with Canina as to site, yet regards the three columns as the remains of the Temple of Minerva, mentioned in the Notitia, and conceives the Curia Julia to have perished in the great fire of Rome under Nero; the Senate-house being transferred

\* See p. 258, ante.



by Domitian to the angle of the Forum, near the foot of the Clivus Capitolinus, in which quarter we find it at a late period of the empire; and that Dyer places it on the site of the Hostilia and looking on to the Comitium, which, as we before showed, he places at the north-west angle of the Forum, near the Arch of Septimius Severus.

The other works connected with Julius Cæsar were the Forum that bears his name, with its Temple of Venus Genetrix, and the Basilica Julia. The latter, which seems to have replaced the Sempronia of which we hear no more, he left to be finished by Augustus, which fact, together with its situation between the Vicus Jugarius and the Vicus Tuscus, or, in other words, *inter ædem Castoris et ædem Saturni*, is plainly told upon the Marmor Ancyranum. The mutilated inscription found in 1835 near the Column of Phœas, and which proved upon inspection to be the same copied two centuries before by Græter and Panvinio, and afterwards reburied, has left no reasonable doubt of the site of this Basilica.

Either before the death of Cæsar or immediately afterwards, the Rostra also were removed from the place they had so long occupied in the centre of the piazza to the south side of the Forum. Bunsen has pointed out that these new Rostra are not to be confounded with the Rostra Julia, which were, in fact, formed out of the basement of the Temple of Julius itself. Besides these, there appears to have been in later times a third edifice of this kind at the other end of the Forum, and to which Bunsen (adopting a suggestion of Canina) has ascribed the remains found adjoining the Milliarum Aureum. After the death and apotheosis of Julius Cæsar, first an altar and then an *Ædes divi Julii* were erected where his body was burnt.

The Temple of Antoninus and Faustina, at the extreme north-east angle of the Forum, was the last building of importance that adorned its circuit; and, as if to complete the circle of doubt and difficulty, the inscription upon the architrave, though entire, still leaves a doubt as to which of the Antonini it refers.

Of the works of Septimius Severus, the only one that bears his name is the triumphal arch at the top of the Forum, which originally seems not to have spanned any road, as the latest excavations prove it to have been elevated above the level of the Forum. As a striking contrast to the ruin of the glorious monuments of Cæsar and Augustus that surround it, the Column of Phœas, the homage of a slavish minister to an unworthy master, yet rears its head, while all around is prostrate.

We have thus traced roughly the general features of the disputed points that made the Roman Forum in its desolation, where—

“A thousand years of silent factions sleep;”—

the arena for discussions as fierce as ever agitated it in the days of its might and glory. Upon topographical matters we must abstain from further argument, and content ourselves with a few more observations upon two or three of the remaining points of greatest importance in this extensive field of inquiry.

The old Forum had long ceased to serve for the *Comitia* for the election of magistrates, but was still found so inadequate for the amount of judicial business, that Julius Cæsar conceived the idea of a new one devoted to that purpose alone; and which undertaking was terminated by Augustus, together with many others of his uncompleted plans. Not many years, however, elapsed before Augustus had to add yet another Forum for judicial purposes, and surpassing that of Cæsar in extent and magnificence. Each of these Fora contained a temple: that of Cæsar being dedicated to Venus Genetrix, the reputed parent of the Julian family, and that of Augustus to Mars Ultor, for assistance rendered him at Philippi.

No vestige of the Forum Julium remains, and its topographers had merely agreed in placing it somewhere on the north side of the Forum Romanum, when Nardini pointed to its correct site near Sta. Martina, and Canina produced the proof. Of the Forum of Augustus, all we know is, that it was reduced in scale owing to the obstinacy of certain householders, and was

restored by Hadrian. In Palladio the portion of the wall of the Forum which he saw forms covers on each side of the temple, with porticos in which Augustus placed the statues of the greatest Roman generals. Remains of three of the handsome Corinthian columns, with their entablature of the Temple of Mars Ultor, still exist near the *Arco de Pantani*.

The Forum Transitorium, or Forum of Nerva, was begun by Domitian, but dedicated by Nerva. From the Temple of Minerva, placed in it by Domitian, it was also called Palladium; and it derived its name of *Pervium* or *Transitorium* because it was traversed by a street connecting the north and south sides of the city. Canina places it between the Temple of Peace, and that of Cæsar with its longer axis extending from the Forum Romanum, and shows upon it a fourfold archway of Janus Quadrifrons facing each of these separate Fora. Palladio restores this Forum in his work, and Du Perac calls it the most complete ruin of a Forum in Rome. In the Via Alessandrina the remains of the enclosure of peperino may still be seen, together with two large Corinthian columns, half buried in the earth, with the entablatures covered with mutilated reliefs, and over them an Attic with a figure of Minerva also in relief.

The last and most splendid of the imperial Fora was that of Trajan, and its design was to connect these Fora with a certain important quarter of the town in a manner suitable to the magnificent structures on either side of it. Though begun by Domitian, it was executed by Trajan, with the assistance of the celebrated architect, Apollodorus of Damascus. But, as Mr. Dyer observes, “as no ancient author has left us a satisfactory description of it; we are obliged to make out the plan, as best we may, from what we can trace of the remains.” It consisted of the following parts:—The Forum, properly so called, adjoining the north-west sides of the Forum of Cæsar and Augustus, and filling the whole space between the Capitoline and Quirinal. Next to the Forum, on the north-west side, lay the Basilica Ulpia, which extended across it lengthways, and thus served to form one of its sides; and on the north-west side of the Basilica stood, and still stands the column of Trajan, the finest specimen of its class in the world, 127 feet high, the shaft being composed of nineteen cylindrical pieces of white marble, in which the steps for ascending the interior are cut, and the surface covered with reliefs in spiral bands, representing the wars of Trajan against Decebalus, and containing no fewer than 2,550 human figures. In Fabretti, Piranesi, and De Rossi, the best illustrations and descriptions of this magnificent column are to be found.

There are traces of the further extent of this Forum to the north-west. Excavations have brought to light enormous granite pillars, belonging probably to the temple which Hadrian dedicated to Trajan, mentioned in the *Notitia*, in conjunction with the column. How long this Forum existed is uncertain. In the *Mirabilia* it is spoken of as a thing that has disappeared.

Before leaving the subject of the Imperial Fora, we will say a few words upon the position of the Temple of Peace. All antiquaries, from Poggio to our own time, have regarded the grand and imposing ruins still remaining between the churches of SS. Cosma e Damiano and Sta. Francesca, as those of this celebrated temple, erected by Vespasian, and destroyed by fire in the time of Commodus. Nibby was the first to call in question this long-received appellation, and to prove that the ruins in question were those of the Basilica of Constantine, erected by Maxentius. This point being settled, the next question that arises is, whether the Temple of Peace previously occupied the site of these ruins, or whether we must seek its location elsewhere. On the one hand Poggio only repeated the appellation that had from the middle ages been assigned to them; on the other, from a passage from Procopius, it would appear that the ruins of the Temple of Peace were still visible long after the construction of the Basilica of Maxentius, and that consequently the two buildings could not have occupied the same site. The latter view is adopted by Canina, who assigns to the temple a site adjoining the

Basilica, and regards a portion of wall still remaining behind the church of SS. Cosma and Damiano as part of the cella of the temple itself. Bocker refers this wall rather to the *περιβολος*, which is expressly mentioned as surrounding the sacred area; but Bunsen, on the contrary, who assigns this wall to his Forum Transitorium, maintains that the Temple of Peace occupied the place since covered by the Basilica, and that the name of Forum Pacis was used to designate the Basilica, together with the elevated open space around it, recently laid bare by excavations.

For those who may take an interest in this fresh subject of dispute, the short essay of Mr. Bunbury upon the Fora of the Emperors will convey in a condensed space the arguments *pro et contra*, as well as all other matters connected with these Fora. The following *resumé* from his pen may save us further trouble in the matter:—

“The series of magnificent structures thus raised by successive emperors has probably never been surpassed in point of architectural splendour; but they are of comparatively little interest to the scholar, from the absence of all those ennobling associations which have hallowed the precincts of the Republican Forum. Still, they formed a feature in the Imperial city, and it is impossible to pass them over without examination.

Two attempts have recently been made, by collecting together the notices we find in ancient writers, and comparing them with the still existing remains, and with those of which the memory has been preserved to us as extant at a late period, to restore, as far as possible, the form and arrangement of those monuments of imperial greatness. The one of these we owe to Canina, whose architectural attainments have here been of the greatest advantage; whilst Becker, who has adopted his views on this subject almost without alteration, has illustrated them from the ancient writers with great learning and ability. The other system is that of Bunsen, which he has brought forward as a sort of sequel to that elaborate restoration of the Roman Forum, the leading points of which have been already discussed. If his efforts in the present case seem less successful, it is but justice to him to bear in mind that they are only put forth as an attempt, and with a very just sense both of the difficulty of the undertaking and the uncertainty of the results obtained. It will be readily seen that the arguments upon neither side can be considered as entirely conclusive; and the decision of the question can only be looked for from future excavations, unfortunately rendered very difficult by the new streets and masses of houses which have grown up here since the days of the earlier topographers. Much that even Palladio still saw has since utterly perished: much more which could then have been explained and laid open with comparative ease, is now buried, it is to be feared, for ever.”

We purpose concluding these notices upon Rome topographical in another number.

#### SCHOOL-BUILDING NEWS.

**Horsington.**—A new school-house has recently been opened at Horsington, from designs furnished by Mr. H. Hall, of Bath. The building consists of three school-rooms and a dwelling for the master and mistress.

**Hull.**—Steps are being taken for the erection of a new boys'-school, on the north side of St. Paul's church, Hull. It is to be 73 feet 6 inches by 30 feet, and there will be two class-rooms, 20 feet by 16 feet 6 inches each, and every other requisite school accommodation for upwards of 300 children. It will be built in the Early English style. The architect is Mr. Botterill, of this town, whose plans have been approved by the Committee of Council on Education. The first stone of the Holy Trinity new parochial schools has been laid by the vicar. The buildings will consist of two school-rooms—one for boys and the other for girls,—each 64 feet long by 20 feet wide, and 14 feet high; and each school is to have a spacious class-room. At the eastern extremity is a dwelling-house for the master. The entire range of buildings is in the Gothic style, of red stock bricks, with stone dressings, and relieved with letters, devices, &c. formed of vitrified bricks. The north gable, fronting Humber-street, is surmounted by a



bell-turret, and behind is a playground, with offices. The whole cost of the buildings will be 2,030*l.* of which 1,090*l.* have been raised by private subscription and 940*l.* granted by the Privy Council Committee on Education.

**Newcastle-upon-Tyne.**—The foundation-stone of the Orphan House Wesleyan Schools, in Northumberland-street, Newcastle, has been laid. These schools will be erected for 400 children of both sexes, at an outlay of about 5,810*l.* of which 1,172*l.* have been contributed by the Committee of Privy Council. The erection of the schools, master's house, and shops, has been contracted for (with Messrs. Scott and Doukin) at 3,127*l.* The designs were furnished by Mr. William Butterfill, of Hull, architect.

**Willeshall.**—The foundation-stone of new schools and residence, in the Holy Trinity district, was laid by Mrs. Gough, of Gorsebrook House, near Wolverhampton, on the 4th inst. The buildings, which will be erected on the east side of the churchyard, will consist of girls' school, 53 feet 6 inches by 20 feet; boys' ditto, 41 feet by 16 feet; class-room, 14 feet by 12 feet 6 inches; lavatories, hat and cloak rooms, and porch. The residence will adjoin the south end of the girls' school. The buildings are arranged so as to form three sides of an additional school-room for infants, if it should be required,—thus providing for additional accommodation at a trifling cost. The walls will be of blue and red bricks, with Bath stone dressings. The roofs will be covered with blue and red tiles finished with ornamental crest, the gables over the front windows being surmounted by crosses of the same material. The roof timbers will be exposed internally, and varnished. Messrs. Griffin and Weller, of Wolverhampton, are the architects, and Mr. James Rowley, of Walsall, is the builder.

**Stoke Saint Michael, London.**—New schools have just been erected here, by local subscriptions, assisted by grants from the two London societies, the Rev. George Morgan bearing the principal part of the cost of the work. The building, of stone, has been most substantially erected by local workmen, according to the plans and valuation of the architect, Mr. Cranston, of Birmingham.

**Orcop.**—Six tenders have been received for school buildings at Orcop, Herefordshire, Messrs. Pritchard and Seddon, of Llandaf, architects, ranging from Eastcourt (Gloucester) 830*l.* to W. Dealey (Ross) 430*l.*

#### PUBLIC BUILDINGS IN THE PROVINCES.

**Eye Town-hall and Corn-exchange.**—The new Town-hall and Corn-exchange for Eye have just been completed, and were opened on Tuesday in week before last. Sir E. Kerrison, M.P. for the borough, was the principal mover in this undertaking. The estimated cost was about 2,500*l.* to meet which the corporation, with the consent of the Lords of the Treasury, raised 1,800*l.* upon mortgage of a farm belonging to the town, and 800*l.* were contributed by Sir Edward, together with the materials for the roof, stone-work, rubble, and gravel, the whole of which are estimated to be worth about 800*l.* The architect was Mr. Lamb, and the builder Mr. Robert Hawkins, of Monks Eleigh. The foundation-stone was laid August 18, 1856. The building is chiefly of red and white brick, and consists of one long room for a corn-hall and other suitable purposes, a council-chamber, reading and library rooms. The hall is 74 feet by 27, and 30 feet high. The roof is of oak, supported by single spandrels on stone corbels. The greater portion of the roof is of glass, with five side-windows, and one at each end. There is a reading-room, and adjoining it the library. A stone staircase leads to the council-chamber, which will be available for county court and magistrates' sittings, and other public business. The building has a tower 74 feet high on the east side.

**Chesterfield Market-hall.**—On Wednesday in last week the new Market-hall that has just been erected at Chesterfield was formally opened. It has been built by a company, to whom the Duke of Devonshire has transferred his right to the tolls. Messrs. Davies and Tew were the architects, and Mr. George Thompson, of Derby, the contractor. The hall, which has been built in the market-place, occupies a space 104 feet long from east to west, and 90 feet wide from north to south. The building is arranged round a central square, which forms the general market, the large hall being on the north side, the entrance to the principal staircase on the east side, with private offices on the south side, and corn-exchange on the west; the market and corn-exchange being a clear height of from 17 to 20 feet. The design is after the Italian style of architecture, externally presenting a square of buildings, the north and south sides rising considerably higher than the east and west, the central part of the four sides being recessed from the four wings. The principal entrance to the Market-hall is on the east side, and on this side there is a clock-tower, rising to the height of about 84 feet from the level of the market, and crowned by a dome covered with lead,

surmounted by a gallery, which is surrounded by an ornamental balustrade; above this rises a skeleton dome of cast-iron arches, the whole finished by a gilded ball and vane, the former being about 110 feet from the level of the pavement. The corn-exchange is lighted by a glass and iron roof, and the general market is roofed with similar materials. The hall, or sessions-court, the mechanics' institution, and offices, are entered by a doorway at the east end, leading directly from the staircase, and by three smaller doorways to the west end, the centre one leading from the magistrates' room to the bench, the northern doorway from the same room directly to the hall, and the south doorway to the small ante-room. The great hall, or sessions-court, is 70 feet long, 31 feet 6 inches wide, including the magistrates' bench, and 27 feet high.

**Dudley County Court Buildings.**—The amount of the contract for these buildings, taken by Mr. C. Burditt, of Wolverhampton, and Mr. Nelson, of Dudley, was 3,775*l.* and not 3,400*l.* as stated by our informant.

**Conway New Union Workhouse.**—On Wednesday, the 18th inst. the works were commenced at the new Conway Union Workhouse, North Wales. The design, which is in the Elizabethan style, has been prepared by Mr. George Felton, architect, of Llandudno, and is to be executed in native stone from Conway town mountain, with Llanasa stone, limestone, and white firebrick dressings. The contract, amounting to 2,010*l.* has been let to Mr. James Jones, of Conway.

**New Public Rooms at Chatham.**—The tender of Mr. G. Cotton, builder, Rochester, for the erection of the proposed public rooms at Chatham, has been accepted, and the building will be immediately proceeded with. Besides the large hall, which will be nearly 70 feet long, and 42 feet wide, with galleries, there will be a number of smaller rooms. The interior will be decorated.

**Mechanics' Institution, North Shields.**—The foundation-stone of the Tradesmen's and Mechanics' Institution, Howard-street, North Shields, has been laid. The library-room will be 50 feet in length by 25 feet in width, and 22 feet high to the springing of the arched glass roof. The building, which has been designed by Mr. John Johnstone, of Newcastle, will be of brick, with dressed stone facings. The elevation is of an Italian character. The contractors are Messrs. Scott and Reed, of Newcastle. The amount of the contract for completing the building is 1,500*l.* The site has cost about 260*l.*

#### CHURCH-BUILDING NEWS.

**Fulley.**—The church of Fulley was lately reopened. The new edifice is in the Early English style, and consists of nave, chancel, and porch. It has single lancet windows on the north and south sides, and triple lancets in the east and west ends, of Ancaster stone. The walls are of the ordinary green sandstone of the neighbourhood. The east window is of painted glass, containing the birth, crucifixion, and ascension of our Lord, with the emblems of the Holy Trinity, St. Peter, and the sacred monograms filling up the ground-work, and the north window in the chancel containing the raising of the widow's son, have been presented by friends of the rectory. The south windows of the chancel contain the emblems of the Holy Evangelists, and the north-west windows of the nave contain the figure of St. Andrew, to whom the church is dedicated. The floor is laid with Milton's tiles, and the seats throughout the church are open. The works have been executed by Mr. Carter, of Horncastle, under the direction of Messrs. Maughan and Fowler, of Louth, architects.

**Sittingbourne.**—The Vicarage of Bapchild, near this place, is about to be enlarged, on plans furnished by Mr. E. C. S. Blake, of Westminster, architect. The following were the tenders for the work to be done:—

Shadgett, Boughton Monchelsea	...£949
Saymell, Borden	..... 997
Smith, London	..... 797
Taylor and Co. London	..... 790
George, Sittingbourne	..... 513

**Salisbury.**—On the 9th inst. the first stone of the new Church, at Alderbury, near Salisbury, was laid by the bishop. The church, which is under the direction of Mr. Teulon, will, when complete, seat 500 persons. It will consist of a chancel and chancel aisle, to be built by Lord Folkestone; a nave, with north and south aisles, and transeptal chapels, eastward, one for Sir Frederick Butcher, facing, and the opposite one for the organ. The tower will stand at the west end of the north aisle, and will be surmounted by a shingle spire. The style of the church is Early Middle Pointed, and it will be built with flint and Bath stone. The south porch is of oak.

**Bradford.**—The new Baptist chapel in Little Horton-lane (Trinity Chapel), was opened on Thurs-

day in last week. Messrs. Andrews and Delaunay, of Huddersfield, were the architects. The dimensions are rather larger than those of Westgate Chapel, the length within the walls being 76 feet, the width 50 feet 6 inches, and the height 34 feet. The entire cost of the edifice, including the site, will be nearly 4,000*l.* About 3,000*l.* have been already contributed.

**Jarrow.**—The United Presbyterian Church here recently erected has been opened. The church, with school-room attached, stands on the Jarrow Grange Estate, and adjoins the new road leading to the engine works of Messrs. Palmer and Co. The building is of brick and is in the Gothic style of architecture. The upper part forms the church, capable of seating above 400 persons: the under comprises a school room and a vestry. The site was presented by Mr. Ellison, and Messrs. Palmer, Brothers, provided the woodwork. Mr. Robert M'Vey was the architect of the building, and Mr. Charles Miles the builder.

**Datchet, Bucks.**—Datchet Church is about to be almost entirely rebuilt and enlarged. The new works will comprise the extension of the nave westward, and the erection of a south aisle, about double the size of the present one, entered from an open-timber porch. The roofs throughout will be all new, and open to the ridge: the arcades, doors, and windows will be also new, so that the only portions of the old structure that will remain are the chancel walls and the tower. The architect to whose care the works are entrusted is Mr. Raphael Brandon, of London. The contract is taken by Messrs. Dove, of Islington, for the sum of 1,827*l.*

**Broomfield.**—A new [?] is open church is about to be erected in the beautiful village of Riding Mill, adjoining the estates of Mr. W. B. Beaumont, M.P., who, with his lady, contributes largely to its funds. The plan of the church comprises nave and chancel, with vestry to the north, and a tower and spire 60 feet high at the west end, adjoining which is a south porch. The style of building adopted is that of the "Geometric Decorated." The stone is to be from Prudham Quarries. The whole of the woodwork will be stained and varnished—the seats open: in the chancel will be placed four stalls, and on the opposite side the choir. The church will be heated by hot water, and thoroughly ventilated. Accommodation is provided for 160 persons. Mr. Matthew Thompson, of Newcastle is the architect.

**Lincoln.**—The coverings have been taken down from the windows put up in the south-east transept of the cathedral. Allusion is made in the three upper windows to the system of ecclesiastical polity under the patriarchs and the Jewish dispensation by means of single figures, the use of which, in preference to groups, was necessitated by the position of the windows. These figures denote Adam, Enoch, Melchisedec, Abraham, Isaac, Jacob, Judah, Moses, Aaron, Joshua, Samuel, David, Isaiah, Jeremiah, Ezekiel, Daniel, Malachi, and John the Baptist. In the middle tier are the Annunciation, the Baptism, the Last Supper, the Crucifixion, the Resurrection, and the Reproval of Thomas's Incredulity; and in the lowest tier are Christ Blessing the Apostles, the Day of Pentecost, the Death of Ananias, the Conversion of St. Paul, the Delivery of St. Peter from Prison, the Blindness of Elymas the Sorcerer, the Appointment of Deacons, and the Consecration of Timothy as Bishop of Ephesus. The windows have been executed by Mr. G. Hedgesland, of London.—The tender of Mr. Wm. Huddleson, of Lincoln, amounting to about 2,700*l.* has been accepted for the building of Binbrooke Church. Mr. R. P. Pope is the architect.—The tender of the same builder has also been accepted for the building of Firsby Church, for which Mr. G. E. Street is architect.

**Stonehouse (Devon).**—Six tenders have been received for the erection of a small chapel, in Stonehouse, Mr. A. Norman, architect, ranging from W. H. Pettuck, 810*l.* to R. Dingle, 560*l.* (accepted). Each tenderer took out the quantities for himself.

**Derby.**—The foundation stone of a Wesleyan Reform Chapel, to be erected in Becket-street, Derby, was laid on the 20th inst. The plan will consist of a parallelogram, 60 feet by 45 feet. The elevation will be simple, of the plain Italian character: the materials are bricks, with stone dressings. The building is calculated to accommodate about 800 persons. It is proposed to light with sunlights in the ceiling, the flues to be made available for ventilation. Attached to the chapel are to be schools for 300 children, with vestries, &c. The total cost, including the land, will be under 2,000*l.* The architects are Messrs. Giles and Brookhouse, and the builder, Mr. Porter, all of Derby.

**Oldham.**—A Wesleyan Methodist new Chapel is about being erected at Town-field. Mr. Simpson, of Leeds, is to be the architect, and Mr. Wrigley, of this town, the builder. Mr. Penk, of Manchester, will execute the wood work. The building will be of brick.



## AGAR-TOWN, ST. PANCRA8.

On Thursday, the 21st inst. the first stone of a Church School, the commencement of a series of contemplated buildings, of church, parsonage-house, and schools, for this densely populated district, was laid by the Right Hon. the Lord Robert Grosvenor, M.P. The vicar has taken the whole responsibility upon himself of accomplishing these works, and has placed them in the hands of Mr. Teulon, architect, to carry them out. The work now in progress is a church school, 60 feet by 25 feet, with a sanctuary to the east, screened and railed off. The class-room, serving also for a vestry, is north of this. The entrances are north-west and south-east, so as to divide the children who, during the week, will use it as a school. The building will be of brick, both externally and internally, with some constructive colour, very partially applied. The east and west windows, set in pointed arches, will have square tracery and cusping, a mode of treatment calculated for its connection with brickwork. The bell turret, over the west gable, will have a hipped roof or canopy, of wrought iron, with a cresting.

## ARCHITECTS' CHARGES AS WITNESSES.

A QUESTION has arisen in my practice lately which I think the interests of the profession require should be set right.

A party employed me to take an account of dilapidations in a house in the City, for which he paid. But the case went to trial, and I was engaged three days at the Exchequer. For this I made a charge of two guineas per day, the payment of which is refused, the solicitor of the party saying that nothing is legally chargeable beyond the guinea paid with the subpoena. My own solicitor also tells me these charges cannot be recovered.

If this be true, it is very hard that in consequence of having done business for which perhaps two or three guineas have been paid, a surveyor must sacrifice possibly not only two or three but four or five days, with no remuneration except the guinea which accompanies the subpoena. JAMES EMBESTON.

\*.\* We never heard of a charge per day for attendance in such cases being questioned; it would be manifestly unjust, and would act most injuriously. We shall be glad to hear from some of our legal friends on the subject.

## THE DECORATIONS OF THE ART-TREASURES BUILDING.

As I find by your statement in the *Builder* of Saturday last that you are incorrectly informed as to the decorations of the Art-Treasures Building at Manchester, I feel it due to myself to correct the error. The decorations throughout the building were designed by me, and executed under my direction, and with slight exceptions, by my own artists and workmen. In the side galleries, the Manchester firm you mention painted the ceilings, cornices, and dado, according to patterns first put in for their guidance by my workmen, and they papered the walls; but the arches, which are the main decorative feature of these galleries, were executed by my own artists.

JOHN G. CRACE.

\*.\* The statement in question (p. 287) was made at the special request of the Manchester firm named, who pledged themselves for its correctness.

## DRAIN-PIPES.

I THINK it will be generally admitted that pipe drainage for houses is a very great improvement on the old drains, provided they are properly laid; but the great drawback is the opening them to examine and clean them out. Several attempts have been made to overcome this difficulty, but, generally, the pipes have to be taken up, or cut open, in order to ascertain the state of the drains: some have half-socket pipes, but then you must remove the pipe. Jennings's plan is a great improvement, as you can remove the upper part of the connection to examine the drain; but there is not space to clean it out properly. Single junctions are often placed upright for the same purpose, as also sockets in the bend of the syphon traps; but I would propose a simple method of overcoming the difficulty and inconvenience. If the makers would always keep some pipes made in two parts, lengthwise, with a flange or rebate in the lower half, the upper part could be taken up at any time without disturbing the pipes: let one of these be placed at the principal junctions, or such other places as may be convenient, with a mark on the pavement, or wall; there would be a great saving of expense and inconvenience, and a sweep's machine would generally do all that is required. The difference in expense could not be much, and the advantage would be great.

I hope you will consider this hint worth a corner in the *Builder*; and as you have so many sketches of drain-pipes in your advertising columns, I hope to see another added to the number before long.

E. O. S.

## SOUTH KENSINGTON MUSEUM.

WE understand that the following rules, amongst others, have been sanctioned for the admission to this Museum, which will be opened to the public in June—

1. The collections of objects relating to education, architecture, and trade, of pictures, sculpture, ornamental art, and models of patented inventions, will be open to the public daily, from ten till four in the day-time, and from seven to ten in the evening, on Mondays and Thursdays, except during the appointed vacations.
2. On Mondays, Tuesdays, and Saturdays, and daily during the Easter and Christmas weeks, the public will be admitted free; but on these days, books, examples, models, casts, &c. cannot be removed for study.
3. On Wednesdays, Thursdays, and Fridays, the public will be admitted on payment of sixpence each person. This sum during the day-time will enable any person to consult any books, diagrams, &c. in the collections of education, and to copy any article in the collections of art; except modern paintings, for which special permission in writing must be obtained. In the evening, works cannot be removed. An annual ticket of admission to all the collections, morning and evening, may be obtained for ten shillings.

## Books Received.

*Essays from the Edinburgh and Quarterly Reviews, with Addresses and other Pieces.* By Sir John F. W. HERSCHEL, Bart. K.H. &c. &c. London: Longmans and Co. 1857.

PERHAPS there are none of Sir John Herschel's well-known works and discoveries which impress one more completely with a sense of the versatility of his talents than this collection of essays, addresses, and pieces. Besides his various lighter yet still profound discourses in the *Reviews*, on Terrestrial Magnetism, Industrial Science, Probabilities, the Mechanism of the Heavens, Kosmos, &c. and his memoirs and addresses to the astronomical and other societies, we have here his various poetical translations from the German, and even his original effusions of a kindred order; and amongst these latter, like that other versatile but much more dreamy genius Coleridge, we have a series of stanzas partly composed during sleep! and noted down on waking; here, in short, we have a bright luminary in all his varied phases, though much more especially as a keeper of the "night watches" than a sleeper while the stars are up. To say one word here in recommendation of such a work as this would be sheer impudence: we shall therefore leave it to speak for itself, however tempting the occasion might elsewhere be to review a reviewer such as Sir John Herschel.

*The Manufacture of Iron in Great Britain; with Remarks on the Employment of Capital in Iron Works and Collieries.* By GEORGE WILKIE, Assoc. Inst. C.E. A. Fullarton and Co. 106, Newgate-street, London. 1857.

The author of this small volume states, in a brief preface, that he has had some years' experience in the iron trade and manufacture, and has something to say as to the heavy losses frequently incurred by capitalists in this branch of manufacture from want of practical knowledge of the subject. The treatise is entirely practical, and although, doubtless, there may be differences of opinion on some points amongst practical men, it appears to be both instructive and useful, comprising, as it does, a succinct view of the main principles and practice of the iron manufacture as at present conducted in this country, and also the author's ideas as to the chief causes which usually prevent such undertakings from being successful.

## VARIORUM.

"A Selection of Vases, Statues, Busts, &c. from Terra Cottas" (Weale, Holborn), by J. M. Blushfield, the well-known terra cotta manufacturer has just been issued. It contains many approved models of vases, fountains, tazas, statues, and other ornamental works, executed, or which he is ready to execute, in terra cotta, or baked clay, which in many instances, it appears, can be made to rival even mere stucco in cheapness, while of far more permanent durability and beauty.—"Biographic and Descriptive Sketches of Glasgow Necropolis," by George Blair, M.A. (Maurice, Ogle, and Son, Glasgow, publishers), is an ably-written and pleasant account of the subjects of the more public and generally interesting monuments and tombs in that earliest of British ornamental cemeteries, the Necropolis of Glasgow. As regards the truthfulness of the volume in respect to those less universally known characters who have once been celebrated in Glasgow and the west of Scotland, and now rest their respected remains in this Necropolis, perhaps the strongest evidence is the favourable way

in which the local press of all complexions appear to unite in noticing the work.—A "General Map of Australia and Tasmania or Van Diemen's Land, showing the British Colonies as divided into Counties," and drawn from the British and Government Surveys, and other sources, with the new electoral divisions of the colony of Victoria, has just been published by A. and C. Black, of Edinburgh. This is a large and handsome map, containing much interesting information, in a graphic form, as to the districts, gold-fields, roads, routes, railways, &c. in Australia and Tasmania. It includes several sketch maps, on even a larger scale than the main one.

## Miscellaneous.

**BUILDERS' BENEVOLENT INSTITUTION.**—A Special General Meeting of this prosperous and useful institution was held at the London Tavern, on Thursday, the 28th inst. for the purpose of electing two pensioners, one male and one female, from a list of ten candidates. The president, Mr. Alderman Lawrence, was in the chair, supported by Mr. George Bird (the treasurer), Mr. Joseph Bird, Mr. Thomas Cozens (the founder), Mr. W. Hutcheons, Mr. J. Williams, Mr. G. Burge, Mr. J. Thorn, Mr. R. Williams (Brighton), Mr. Thomas Stirling, Mr. George Grayson, Mr. Thos. Todd, jun., and other gentlemen. The last annual report stated that the subscriptions and donations received during the past twelve months amounted to 1,354l. 1s., and 700l. stock had been added to the sum invested in the Three per cent. Consols. The large number of deserving cases presented at each election, shows the necessity for such an institution, and for all the pecuniary help that can possibly be accumulated on its behalf. The president said he hoped the funds would come in more liberally. The charity was ably managed, and if the subscribers would but place the means at the disposal of the committee, they would, on the next occasion, be enabled to elect a larger number. Mr. George Bird said he hoped the subscribers would exert themselves to enable the usual election to take place in November next.

**BIRMINGHAM ARCHITECTURAL SOCIETY.**—The annual meeting of this society, adjourned in consequence of the death of Mr. D. R. Hill, was held on the 18th inst. Mr. W. Harris in the chair. The report of the council, which showed the society to be in a prosperous condition, was read and approved, and the question of the establishment of an Architectural Exhibition was referred to the council. Announcement was made of the formation of the Birmingham Architectural Photographic Society. Office bearers were elected, and a resolution passed to pay a visit to Oxford to examine its architectural monuments during the vacation.

**WIDNEY SEWAGE WORKS.**—During the past quarter 5,191 feet of sewerage have been constructed, chiefly in Scholes, at a cost of 1,809l. making a total of 14,290l. since the works began. Notices for the drainage of 250 houses in Scholes ward have been served, and many dwellings reported by the surveyor as unfit for habitation have been doomed.

**CHELSEA BRIDGE.**—In reply to a question put by Sir John Shelley, in the Commons, last week, Sir B. Hall stated that it was expected this bridge would be open by August. The Act declared it a toll-paying bridge; and that the tolls be first applied for the maintenance of the bridge; next, for the expense of construction, and any surplus for the carrying out of metropolitan improvements.

**THE VIVIAN MEMORIAL AT SWANSEA.**—For some weeks past the concrete foundation of this statue was ready, and on the 10th inst. the first or foundation-stone of the pedestal was laid by the Mayor. The contractor, Mr. Renoden, will now proceed with the work. The pedestal will be 13 feet high, and the statue 8 feet high. The sculptor is Mr. J. Evan Thomas, of London.

**STRIKES.**—At Liverpool the stonemasons are on strike for an advance from 28s. 6d. to 30s. a week in summer, and 26s. to 27s. in winter. Several employers complied, but there is no prospect of an early settlement of the question. A similar dispute has occurred between the cabinetmakers and their employers. At Manchester, the joiners and carpenters are on strike for the Saturday half-holiday, and have appealed to the trade operatives in Bradford, Leeds, Sheffield, and five or six other towns, for aid, which has been promised. Two hours a-week during summer would, it seems, be the maximum of the time asked by the workmen. At Nottingham, a similar strike to this last has taken place, amongst the joiners, masons, bricklayers, and labourers, for an hour on Saturday. Some masters have consented, and others have offered half-an-hour, which has been declined.

**THE FALL OF HOUSES IN TOTTENHAM-COURT-ROAD.**—The inquiry was resumed on Tuesday, the 26th inst. and was again adjourned till (this) Friday, the 29th.



**BRICK-MAKING.**—A Pamphlet contains Two Papers, to which the Society of Arts awarded a Silver Medal, forwarded on receipt of four-penny postage-stamps. HUNPHREY CHAMBERLAIN, Kempsey, near Worcester.



# The Builder.

VOL. XV.—No. 748.



REFORMATORIES, Ragged Schools, and similar institutions, have been called "Social Bridges." The title is a happy one.

"God's blessing," writes Longfellow,—

"God's blessing on the architects who build  
The bridges o'er swift rivers and  
abysses  
Before impassable to human feet,  
No less than on the builders of cathedrals,  
Whose massive walls are bridges  
thrown across  
The dark and terrible abysses of Death.  
Well has the name of Pontifex been  
given  
Unto the Church's head, as the chief  
builder  
And architect of the invisible bridge  
That leads from earth to heaven."

And there are dark and dangerous places in the social world which

need bridging over, to afford a way out to the miserable dwellers amidst degradation and filth. Blessings to those who build and maintain such bridges, and afford a chance of light and hope to the poor souls born in darkness and misery. Lately public attention has been strongly directed to these and other means for the prevention of crime; and we may, perhaps, be excused, viewing the matter as part of the great question to which we have long given consideration,—the social condition of the working-classes,—if we here make some few observations upon them. We have before now shown the extent of the dark places in London, the nurseries of crime, the hotbeds of disease, and have pointed to the enormous number of the children occupying our streets uncared for anduntaught. It is time that measures commensurate with the magnitude of the evil were taken. In all large cities there is to be found a considerable amount of distress, and a condition of things, which, if left neglected, is sure to lead to danger, trouble, and expense. Improved medical knowledge, increased opportunities of supplying information and instruction, and the progress of the science of statistics, will be the means, ere long, of sweeping away the dwellings that disgrace the metropolis, and raising up the classes which now are so difficult to deal with.

During the last twenty years good has been done in patches; but only enough to show that improvement is practicable. London missions, national schools, ragged schools and dormitories, and infant nurseries, have become established institutions in this great city, but not in sufficient numbers to meet the enormous requirement.

Foremost amongst the causes which lead to the increase of crime in London are—

1. Ignorance reared and encouraged in neglected neighbourhoods.
2. The want of the means for teaching children some useful trade; and
3. The neglect of parents, who, by dissipation, and other ill conduct, leave their offspring to shift for themselves, or else drive them into the streets to thieve.

Take an instance or two. A boy, now in the Reformatory in Britannia-street, said, when asked,—"I am between fourteen and fifteen years old. I have a father and stepmother, and two sisters, younger than myself. I have been in prison three times. I stole once a loaf of bread. I was very hungry, and could get nothing to eat. I once stole some bacon, and took it home to divide with my sisters. My father, however, took up the poker and hit me with it, because I would not give him all."

The sufferings of this lad in the streets (for in course of time he was driven away by his unnatural guardians) were too shocking to relate. The superintendent of the refuge said he did not know a letter in a book until he came there, and that he is now a good and industrious boy.

Out of nineteen boys in this "refuge," nine go out in various ways to work, the others are engaged chopping wood, &c.; and out of ninety boys admitted since the opening of the school, sixty have been put in the way of earning their bread in an honest manner: some have entered the navy, others have become soldiers: some have been apprenticed to trades.

The boys, when first brought to these institutions, are in most instances ignorant of everything good. The superintendent of the Britannia-street Refuge says—"Of the large number of boys who have passed through the school, very few have returned to their former habits." He knows many who, if they had been left in the street, would have been a pest to the country, are now growing into young men, filling situations in life, and becoming useful members of society. The cost at which this amount of good is done seems very small.

Salaries .....	£25 10 0
Food .....	104 1 5
Coals, gas, and washing .....	11 4 0
Boys' treat .....	1 17 6

Printing, and the expenses of a public meeting, come to about 9*l*. The whole cost of the refuge for nineteen lads is 165*l*. 17*s*. 7*d*. If we take from this sum such items of expenses as might be avoided if the system were differently organised, and the produce of industrial work, 27*l*. 8*s*. 1*d*. the actual cost is little more than 6*l*. 11*s*. per annum, or 2*s*. 6*d*. a week, for each lad. When we find criminals transported at a cost of from 30*l*. to 40*l*. a year, one feels astonished that the various ragged-schools and places of refuge are so little cared for, and allowed to remain in struggling circumstances.

Questioning a group of lads of from twelve to sixteen years of age, at the Field-lane Ragged School, not long ago, every one of them, without the least appearance of compunction, acknowledged that he had been three, four, six, or seven times in prison. They had in most instances stolen food, and none of the half-dozen lads had either father or mother. Useful knowledge, when they first came to the school, they had none: how could they have it? The report of the schools would afford dozens of instances of the mode in which children are forced to become thieves and vagabonds. Take one case. J. N. aged sixteen, says,—"Father dead: mother a very bad woman. When I was a child I was taught to steal, and if I returned home without something for mother, I was sure of a good beating, and was turned out for the night." This lad had slept in arches and on the stones, and been nine times in prison, once for throwing stones. He is now in work and doing well. The larger portion of the 200 or 300 children who here assemble day after day, are clean and tidy; and it is satisfactory to contrast the appearance of the great bulk of the children with the state of those who are persuaded to come to the ragged schools, when first established in new neighbourhoods.

In the Field-lane school great good has been done by a society of ladies, who give clothing, and receive from the children part of the value of it in very small payments. The first properly-shaped articles of dress with which some of the children have been clothed have been obtained through this medium.

In the dormitory, a temporary night shelter is provided for the most destitute, either old or young, in which 12,220 have slept with tickets (that is, those who have attended the Bible classes regularly); 6,708 without tickets, who have attended the Bible classes casually; 1,092

strangers to the school: total, 20,020, or about 55 per night during the year, to whom nearly 60,000 loaves of bread have been given. Out of the number above mentioned, during the twelve months, 113 have obtained employment from the refuge; 60 have been admitted into permanent refuges; 18 have enlisted, and 21 have been restored to their friends: so that 212 youths and men have been taken from the streets and prisons and provided for. Much of this good is effected by the moral power and kindness of the Sunday-school teachers.

The above facts show that there is a class to deal with, amounting to a considerable number, who are totally neglected, without a shelter, and are obliged to break the law at a tender age in order to obtain the commonest necessities of life. It is clearly shown that some of the wildest of them, if caught in time, can be transformed into useful members of society. It seems certain that ragged schools, in connection with dormitories and industrial training, if instituted to a sufficient extent in the proper neighbourhoods, will give a right impress instead of wrong, and effect much good. At any rate, it is but proper to try the effect of kindness and persuasion before taking other measures. It is an act of injustice to allow thousands of ignorant and destitute children, both male and female, to go to almost certain destruction, without an effort.

Care should be taken in connection with reformatories and places of refuge not to make them seem to be places of punishment, for undoubtedly much of their present success is owing to the feeling of independence and thankfulness experienced by the inmates.

Let us look at the matter in a practical point of view. We want good artisans,—our colonies want them even more—offer any money for them. Would it not be better, wiser, cheaper for the country to turn the neglected infant population of our cellars and streets into men of this class, instead of allowing them to become, as they unquestionably must become if uncared for, rogues and thieves, if nothing worse, to plunder honest men, and to be ultimately caught, tried, convicted, and maintained in prison, or a penal settlement, all at the cost of the State?

## THE GOVERNMENT COMPETITION DESIGNS.\*

The design, No. 86, with the motto, "Tenax Proposito Vir," has come from Munich. Though it has little of the invention in details, for which the German works mostly are remarkable, and for which, perhaps, the shortness of the time, of which the author complains, allowed no opportunity—it yet deserves to be looked at, considering that the points which have received attention, namely, the general disposition on the ground, and the grouping of buildings, are those in which the architecture of our towns is most deficient. In these, one object to be attained is *variety* of character; and to gain this, whilst eschewing the use of several different styles, which would rather injure one another in their effect—occasional use of circular and oblique lines in the ground-plan is desirable. The author of No. 86, has sent a street plan of the immediate locality only, a detailed block plan, and drawings for the War-office and Foreign-office, as one design. Looking at the general arrangements—he obviously would pursue the present plan of the works commenced for the new Westminster-bridge; but, again like many of the competitors, is misled by the plan and instructions, so that he shows only the site of the old bridge. The Offices are arranged in the block plan, in symmetrical groups, with free intercommunication; and in place of the French arrangement, where a new site for the bridge becomes the centre line, Parliament-street is made the starting-point of the design. At the south end of Parliament-street, is a splayed or straight-sided recess—a "cres-

\* See p. 302, ante.



cent," the author calls it—in the ground, with projections with small porticoes on the oblique sides, and a Roman triumphal arch with side openings, across the street in the centre. In the "crescent" are fountains; and an obelisk in the middle of Parliament-street is seen beyond the arch. At the position of the obelisk, a broad place intersects. The front towards the river has embattled towers at the ends; a centre with pediments, one over the other, and a dome seemingly suggested by that of St. Paul's Cathedral. A projection in the form of a semicircular bastion occurs in the river wall, in the centre, and round this the landing-stairs wind. Low domes are placed on the obliquely disposed fronts in the "crescent." The author's decorative details appear to be conceived with the view of assimilating them with the present Board of Trade, which building would be preserved—as also that of the Treasury facing the Parade, attributed lately to Sir Robert Taylor, but sometimes ascribed to Kent. The plan of the War-office and Foreign-office has two large courts and several smaller courts. Apparently it provides a considerable number of rooms; and these are separated by parallel corridors, about which part of the plan the sufficiency of the lighting is not evident. The Foreign-office and residence have a peculiarity of plan noticeable in some other cases, and which here may have originated from the position of the State Paper-office, which is preserved,—that is to say, the north-west angle of the block is splayed off, and the grand entrance to the residence, with the staircase, as well as a carriage-way through to the court, are provided at that angle.

No. 87, "Palmyra," generally pointed to as by Mr. Bardwell, is worthy of notice, chiefly for the suggestions in street arrangement that may be derived from the general plan—which, however, is hung where we are unable to read much of the writing upon it. Besides the plan referred to, there is one to a smaller scale, showing a proposition as to a site for a museum at the meeting of the main routes on the Surrey side, as the central locality of London; and there is a general block plan of the Offices, and a design for the War-office and the Foreign-office, which are connected, as in many other cases, by arcades with colonnades above. The drawing of the general plan is remarkable for the extensive provision of trees lining the streets. The author apparently would complete the plan for new Westminster-bridge, but again, like others, shows the site of the old bridge, and also the width marked on the Government plan, of Mr. Walker's proposed addition; but does not indicate in any way the site of the works in progress. This error would throw out the whole line which would seem to be contemplated by the author, so far as the south side of Bridge-street is concerned. He proposes a new bridge from Charing-cross, with one approach obtained by the removal of Northumberland House, and with a junction from Whitehall-place; and he has also a bridge at the Horseferry. The bridge from Charing-cross is intended to carry a railway as well as the road. A street through the centre of the National Gallery, joining Tottenham-court-road, a portion of the new Gallery bounding the new line; the junction of the Mall and the Strand; the provision of a wide avenue to embarking and landing stairs, opposite the Horse-guards; the addition of a dome to the Horse-guards; the removal of St. Margaret's Church to the south side of Bridge-street, in line with the Clock Tower; and the formation of a larger place, with groves of trees opposite the Abbey, are the chief of the other suggestions. The originality which there is in some of these as shown, degenerates to eccentricity in the designs for the two Offices. In the War-office plan, the entrance leads to a rotunda of 80 feet diameter, and 116 feet in height, surmounted by a dome, and having a gallery of 10 feet wide on the inside, on the level of the first floor. The covering of the dome, externally, is panelled, and ornamented with various military devices, not on the best principles of ornamentation. In the Foreign-office there is no large dome; the plan has a crescent-shaped recess in the centre, next the "Great Court-yard," which is between the Offices. But the chief peculiarity of the designs

consists in the very large area given to window opening, and the salient columns of the upper stage. The author says,—"The columns being detached, would, if seen in perspective, present a rich line of architectural grandeur, almost entirely hiding the windows, and illustrating the motto, 'Palmyra.'" The angles of the plan are terminated by domes of subordinate character, the rooms in each floor there being octagonal.

No. 88, "Vitam excoluere per Artes," retains the site for Westminster-bridge, but otherwise offers no point for notice; but No. 89, "Ars longa, Vita brevis," as the work of a Frenchman, though unequal in the designed decorative effect to works previously named, is important as based on the usual English proposition as to the bridge, just referred to. The author exhibits a street plan of a limited area, a block plan, and a design for the War-office and Foreign-office in one building. He provides a "Place Victoria" opposite the west end of the Abbey, from which five ways radiate, the Sessions House and Hospital being removed; and forms a garden, with a fountain in the centre, between the Abbey and Great George-street. The Board of Trade would be preserved, and Dover House would be removed. The general Offices are grouped in four blocks, with recesses and courts, and would be symmetrical in plan were the suggestion for the appropriation of Richmond-terrace carried into effect. Parliament-street, widened, is intersected by the "Rue des Ministères," forming a junction between the river embankment and the park. The western portion of this "Rue" is itself intersected by the "Place des Ministères." Thus there are two similar fronts in the park, with gates in the centre, to Charles-street, and two similar fronts in Parliament-street. This reproduction of designs—as distinguished from the treatment in symmetrical portions of one general design, to which parts are subordinate—has been practised by too many of the competitors. We can understand how the circumstance referred to has come to pass, considering the inadequate time allowed for any grand comprehensive design; but at present the aspect of affairs would go towards justifying our correspondent, Mr. Garbett, in his application of the name *per-centage style*. We might lay down as a principle that, where there is no really comprehensive design with one central feature and other prominent features of the whole, what then become individual buildings should not be formed in duplicate, but should be designedly different. At the same time a good general design, with the required duplication, would produce the finest effect. In that case, however, though the ends of a front should correspond, the separate fronts should present greater variety than English architectural works have usually exhibited; and it is, in fact, on the happy conjunction of the qualities—unity and variety—opposed to each other in the vulgar perception, but really both possible and essential in architectural art, that the effect of any building depends. The plan in No. 89 of the building for the War-office and the Foreign-office has a deeply recessed centre next the "Rue des Ministères," and five courts. The entrance in the centre, is by a loggia of five arches on a wide flight of steps; each end of the loggia giving access to the hall of one of the Offices. The Residence, next the park, has its entrance beneath an archway which unites two of the courts,—archways of ingress and egress being of course provided to the courts from the park. All portions of the plan are in communication; but this is not always effected by corridors. The deficiency here, like that in lighting, seems, as referred to in our last, apt to characterize the "*academic plan*," which is either Italian or studied in a great degree from Italian models. There is, we believe, as much to learn from the continental architects, as they can learn from us; but there are parallel deficiencies. The style of the design is French Renaissance, with the pavilions, Mansard roofs, and dormers; with a rusticated basement and vermiculated quoins, and segmental-headed windows, and within the upper stage a Roman Doric order of pilasters and columns enclosing two stories; but the decorative treatment is not equal to that of other French productions.

If one wished to see whether bad architecture could be produced out of England, reference might be made to No. 91,—

"Lust und Liebe zum Dinge  
Macht alle Müh und Arbeit geringe;"

a design for the War-office with poor arch-headed windows and rusticated wall-surface, and a large plaster all by itself at each of the angles of the façade, and of the centre division.

For the next number in order of rotation, 92, we must pass to the opposite end of the hall, where, under the motto "Confido," in a wreath, drawings of a design for the War-office and Foreign-office, in one, are exhibited. An oblong court, with archways at the sides, is the prominent feature of the plan; and into this, at one end, projects a two-storied building, leaving sixteen to twenty feet of width for the lighting to the sides there adjoining. The discrepancies between the plans of the competitors, in certain points, are very remarkable. In one design there may be space for all purposes, and room to spare for a very unusual area in halls and staircases; whilst in another case, the courts are too confined for the required lighting; or they are left of larger dimensions than necessary, without adequate use made of them in lighting the corridors. A detailed comparison of such cases would be instructive; it would be a work of some labour, but one of great value in results; but it is one that we must perforce leave unfinished. The exhibition, indeed, is about to close before there has been any time for the chief advantages of study which could be derived from it, and for which there will not for many years be an opportunity similarly capable of being made conducive to excellence in architecture. We may at present observe, that discrepancies arise in some cases from different readings of the "instructions." This circumstance it is essentially requisite should be considered, with a view to fair adjudication. Some of the best designs have certainly transgressed beyond the prescribed limit of the ground; other discrepancies have resulted from the want of figured dimensions in the Government plan; and in many of the plans, the *ins* and *outs* of the red line are corrected with every advantage as to the Government object, but clearly in defiance of the "instructions," and to the injury of other competitors should these "instructions" be not held binding. In short, we should not be surprised to find that the designs which are the best for the object, in all points, are precisely those which cannot fairly receive premiums. This position of affairs would be precisely what we pointed out in the very first instance as the necessary result of the course which was taken. In the design now before us, the plan is of a curious wedge-shape; but many of the competitors similarly alter the angle of the south and east sides of the ground, though not to the same extent as the author of No. 92 has done. There are, however, other discrepancies in designs—of the nature referred to—from the comparison of which valuable information could have been derived. The decorative design in No. 92 is more meritorious than the plan. In the ground-story the fronts have arch-headed windows with enriched spandrels, and with the piers panelled, and enriched with horizontal mouldings in lieu of rustication. Above,—the height of two stories,—there is an order of three-quarter Corinthian columns, with broken entablature, balustrade, and vases: to the first-floor there are arch-headed windows with enriched spandrels; and, to the upper floor, are windows, with dados or pedestal bands, grouping with the windows below, enriched with festoons.

No. 94, with a motto—"Utilitas"—not unfittingly chosen for a design which displays prominently, decorative character, is spoken of as by Mr. Coe, and the drawings include a general street plan, with a plan to a smaller scale showing what it is necessary to consider—the connection of proposed routes with the communications to and from far distant localities; a block-plan of the Offices generally, and a design for the Foreign-office. The author is one of those who would remove Westminster-bridge altogether; and probably he has put the case of the removal party in the best light. He has a "new Trafalgar-bridge," opposite the Horse-guards, with one of the main approaches from opposite Cockspur-street; whilst on the Lambeth



side he would provide two streets, one to Stamford-street and the other to the angle of the Bridge-road. For another bridge, he proposes the site south of the Victoria Tower,—the route on the Middlesex side commencing from the angle in Victoria-street, and on the Surrey side crossing the archbishop's garden (whereabouts, a street at a right angle is suggested to the York-road), then running straight by the Obelisk, using the portion of the Westminster-bridge-road beyond the Orphan School, and the Borough-road, passing on to Stoness'-end, Blackman-street, which is crossed,—afterwards crossing Bermondsey-street, and ultimately joining the Bermondsey Low-road,—whilst, farther on, a road often proposed, is indicated, cutting off the corner of Paradise-row with the Deptford Lower-road. At the Victoria-street end, the new street would connect with a short route northward to the St. James's-park foot-bridge, and with one southward to Regent-street, Westminster. There can be no doubt that the route proposed would be one of the most important for the metropolis. We would wish, however, to urge, as we have done before, that the arguments in favour of particular routes and bridges, whilst showing the advantages of these lines, do not at all controvert the arguments in favour of other lines, which equally and in addition require to be opened. Like most of the competitors who would contemplate having no bridge on the present site at Westminster, the author of No. 94 leaves the approaches as they are, thereby, as it seems to us—without referring to the money already spent in foundations—wasting an opportunity of getting at the most economical rate, one of the many bridges which are still needed. For, whilst the approaches of a bridge often cost as much as the bridge itself, it cannot be too generally made known that the approaches for the bridge—with increased width on the up-stream side—at Westminster, are so nearly complete, that the purchase of one small block of houses on the Lambeth side, would be alone required to make them so. Referring, however, to what may be an independent question, namely, the erection of a bridge next the Victoria Tower, it may be well to state that the levels are even less favourable there to the effect of the Houses of Parliament than they are at the opposite end. The Victoria Tower stands, in fact, on lower ground than the Clock Tower; and, therefore, it would be exceedingly difficult to get the gradient for the approach to the bridge, proposed by the author of No. 94, without serious injury to Sir Charles Barry's work. We need not refer to the author's other suggested improvements; but proceed to the design for the Foreign-office, which is prominent in the exhibition, by its bold and effective perspective view. First, remarking that "the written description" to which the author requests particular attention, does not accompany the drawings, we observe that the plan has two internal quadrangles, with sunk areas and ornamental gardens; and that these quadrangles light, besides the transverse corridors, a grand gallery, of 20 feet wide, on each floor in the residence, through a loggia or recess, which may be filled with flowers at evening receptions. The principal corridors to the official department would seem to be lighted only at the ends. The Office has the principal entrance at the east, and a second one in Downing-street, and the entrance to the Residence is from the park under a wide carriage porch, formed of clustered and rusticated pilasters. In the residence, beyond the entrance-hall, is the grand gallery, north and south, before referred to, and a similar corridor, with the reception-rooms on the floor above. In the middle of the whole plan is a "central hall" (44 feet square and 50 feet in height), for occasional use; it is lighted at the sides, that is, from both corners, and is reached from the landings of the stairs both of the Office and the Residence. As regards the decorative design, the style may be called a rich pure Italian; the masses of the building are crowned with curved roofs; and there is a turret having much the character of one of the Anglo-Italian bell-towers, at the north-west angle. Besides the porches to the residence, there is a portico in two stories of columns to the Offices. The lower story generally has three-quarter columns of the Italian-

Ionic order rusticated, and quoins and window dressings; the first floor has a Corinthian order and arch-headed windows, and to the upper floor there are windows with dressings and pediments. The cornice to the building is surmounted by a balustrade, interrupted by the dormer windows, which have curved pediments, and there are attics to the chief masses of the buildings from which rise the curved roofs, which have railings at the top. The prominent parts referred to, in the front, have Venetian windows, bordered by clustered columns bearing a pediment and sculpture. The interior decorations have been well studied.

For No. 95—"Stranger"—we must go back to the south end of the Hall. The drawings under the number, represent designs for the War-office and Foreign-office in one building, and the residence in a separate block. The whole group extends over the prescribed boundary about 170 feet,—a mistake which is made in several designs that are more important than the one we are noticing. The author disregarding the instructions, places the Foreign-office along the Downing-street side, and the War-office chiefly along the south. It is impossible to make out the decorative character, the elevations being placed far from the eye, and being very full of work.

No. 96, at the north end of the Hall, includes under the motto "Apropos," a general street plan, and a detailed block plan, and under the motto "Pense à bien," designs for the War-office and the Foreign-office in separate buildings, which are joined by an archway. In the general plan, Westminster-bridge is removed; but a foot-bridge on the suspension principle is placed on the site. For this bridge, the chains and other materials of Hungerford-bridge are proposed to be used; for, as the authors provide a carriage-bridge approached from Trafalgar-square, they conceive that two bridges closely adjoining one another, would not be needed. The new suspension-bridge would, it is thought, solve the difficulty of the depreciation of the property in the Bridge-road; and as to the loss of the money already expended in foundations for the Westminster-bridge, the authors think the sacrifice of that, or of ten times the amount, should not stand in the way of a comprehensive public improvement. This, however, is assuming that the plan now before us would effect an improvement, as contrasted with the maintenance of the carriage route, and the completion of the bridge which has been commenced,—an opinion which we need hardly say, is not ours. For, our original argument in favour of the bridges north and south, being admitted by all parties—preserving a bridge at Westminster or not—the real question is, whether, with the other bridges, a third carriage route—namely, the existing one,—is desirable; and this is generally admitted. The economy of construction in the present site is a subordinate argument. The chains of a suspension-bridge would be more destructive to the effect of the Houses of Parliament, than would any bridge on the plan which is approved of by Sir C. Barry; and the expression of an opinion by the author of the design No. 99, touching the present Hungerford-bridge, and the view of London, may indicate what the architect of the Houses would say as to any suspension-bridge at Westminster. With reference to the view that there is no necessity for two bridges, so near together as the Hungerford-bridge and a Charing Cross-bridge, we may just observe that their distance on the plan would not represent exactly the case. For, there would be considerable difference in level,—the Hungerford-bridge would be a high-level bridge, serving the South Western Railway, and the other bridge would be a low-level bridge for different purposes. The distance also, of the bridges on the Middlesex side, would not be so trifling as to lend an excuse for doing away with the Hungerford route.

—In the plan under No. 96, the authors seem to provide an approach to their Charing-cross bridge, by the destruction of Northumberland House; and on the Lambeth side, they propose curved lines of street to Upper Stamford-street, to the New-cut, and to the Bridge-road. They have also a bridge at the Horseferry. They alter the east side of Whitehall, connect the Mall and the Strand, form a street from near the foot of the Charing-cross bridge, southwards

to the Clock Tower; similarly open out a view of the Victoria Tower by a street from Victoria-street, crossing Dean's-yard; remove St. Margaret's Church, and get a place 600 feet square, opposite the north side of the Abbey; arrange the parade, with additions to the adjacent buildings, on a symmetrical plan—removing Dover House; and repeat the Banqueting House, with a central feature, and an archway on the same right line as the archway of the Horseguards, leading to the court of a building for the use of scientific societies. A new National Gallery, and an alteration of Trafalgar-square; a street north to Leicesters-square; and one from Chandos-street to Jermyn-street, Regent-circus, are also projected. For the embankment, it is proposed there should be two levels,—one route passing under the bridges, and in front of the Houses of Parliament, and another at the level of the bridges, terminating at Bridge-street. The Offices generally are proposed to be arranged in regular blocks, the Board of Trade front being preserved; and the Admiralty, with a dome terminating the vista from the street, on the present line of Charles-street, being next the river. The masses of building would be connected by screens and triumphal arches. The War-office and Paymaster-general's office, would have similar elevations in Parliament-street, connected by an archway and screen of columns; and the Foreign-office and Exchequer, each surround three sides of a quadrangle, with a residence, filling in the side next the park. The plans of the War-office and Foreign-office have been well studied and carefully drawn; but the elevations and perspective views have evidently been hurried. The corridors seem to be partly lighted by borrowed lights. A large area of window-opening, externally, is provided. In the War-office plan, there are two archways from Parliament-street to the court, and under these are entrances to the building. The principal entrance is on the opposite side of the court. In the Foreign-office plan, the entrance to the Office is by a portico of superimposed coupled columns on the east, and there is another entrance from the central court. The residence is entered from the court—to which there are carriage-ways of ingress and egress—and from the park; and it has a grand staircase which winds round the space inclosing the private stairs. In the Office, the staircase is well planned, with middle and side flights, and landing all round on the floor above, and the corridors are well lighted from the open courts. The decorative features comprise semicircular and segmental headed windows—some with labels—enriched friezes, cornice, and balustrade, loggias or porticoes in several stories in re-entering angles; and pavilions with orders and curved roofs with balustraded terminations; but the merit of the design would have to be looked for, as we said, in the plans.

No. 97, "England expects every Man to do his Duty," at the south end of the Hall,—ascribed to Messrs. Wadmore and A. J. Baker,—includes a large street plan, a block plan, and views of all the Offices—which are in a connected design,—and drawings of the War-office and the Foreign-office. The general plan has received the chief attention. Westminster-bridge, the authors propose to remove—whilst leaving the approaches—and they would substitute a bridge opposite the site of Dover House,—removed in connection with Mr. Pennethorne's direct route to Southwark. In this proposal they would seem to intend but one bridge; but they also suggest two bridges, one at Charing cross and the other south of the Victoria Tower. They would open a communication by an incline between the park and Waterloo-place, and one between the Mall and the Strand; would remove the National Gallery to the site of Burlington House; at Westminster, would take down the south side of Great George-street, and remove St. Margaret's Church to the angle formed by Great George-street and Prince's-street; would move the Sessions-house to the site of Gwydyr House, and the law-courts to Somerset House; and, like many of the other competitors, would form a place of 600 feet square, with statues and fountains, opposite the Abbey; and would clear the south side of the Abbey and the Chapter-house. The Offices generally they would



arrange in two buildings, one on each side of Parliament-street, which they would make 180 feet in width, planting rows of trees along it. They would preserve the Board of Trade buildings; and have endeavoured, in the general Offices west of Parliament-street, to follow the style of Inigo Jones's Whitehall Palace; not, however, we think, with as good results as those which are attained by other competitors who have had in view the same or the original Palladian style. For the Offices on the east side of Parliament-street, "a style to harmonise with the New Palace of Westminster" is proposed. The rooms of the two Offices are arranged round three quadrangles; and the corridors are lighted by areas at each end, and through ornamental gratings along the sides from the skylight of the top story. A shaft for ventilation, by the aid of which also the smoke of the fireplaces might be consumed, is shown.

No. 98, with a monogram of the letters A. and V. R. (at the north end of the hall) includes a general plan, a block plan, and designs for the War-office and Foreign-office in separate buildings. These designs are good specimens of the treatment of the subject in the Palladian style; the architecture is excellent in general composition and proportion of details; and might fairly be put forward to show the effect that can be produced in a style which has not unfrequently of late years been rated at a low level. But, as the drawings are hung, they have perhaps not been properly noticed. Photographs of them accompany the written particulars. In the general plan, it seems to be the author's intention to keep Westminster-bridge much as at present commenced; though in that case, like others, he must have mistaken the position of the new works. He proposes a reconstruction of Hungerford-bridge for heavy traffic, and a second approach to it from Whitehall-place; and he indicates a bridge at the Horseferry. The embankment of the river—as to which desired measure, we may here observe, that there are points which do not seem to have been studied by any of the competitors—the junction of the Mall and the Strand, and of the park and Waterloo place by an incline, arches being erected at each of the entrances; the removal of St. Margaret's Church, the Sessions-house, and other buildings, and formation of a grand square next the Abbey; a communication with this place from Regent-street, skirting the park; a new street opening the south side of the Abbey, and ending in a vista of the Victoria Tower, near which is a grand state landing-place, and other improvements are suggested. The Board of Trade would be preserved, and an addition made to it at the back. The plan of the War-office has an entrance-hall, from which corridors lead out, and an inner hall and staircase projecting into the one large court, which is intersected on the ground level by a colonnade leading to the range of building opposite—where there is a back entrance. The corridors, 15 feet wide, are lighted in great part by openings in the floors and ceilings. These seem to be about 18 feet in length, and 4 feet 9 inches to 5 feet in width, and to be about 42 feet apart,—of course, lighted from the top by skylights. At the present Board of Trade, where there is a similar method of lighting, we believe the apertures in the floors are about one-third the dimensions just quoted, whilst the lights are about 18 feet apart. Considering that in the latter case, even in the first floor, the light is not by any means greater than necessary, we apprehend that a length of 42 feet, even with large apertures, would involve dark places in the ground-floor corridors at least. The useful hints which could be drawn from examination of the plans, would be very numerous; but the early closing movement of the Government allows no opportunity for the real benefit from an exhibition, of this kind. The principal staircase has a domical ceiling, and is well treated decoratively, as are all parts of the interior; and it is surmounted externally by a curved roof quadrangular on plan. The building, which, as we have said, is of good Palladian design, is in three stories, and has masses at the angles covered with truncated roofs, and a projecting centre with a portico of coupled columns in three stories, and a pediment flanked by portions of the front, which are carried up as

turrets with salient columns and lanterns. The general decorative effect is produced by superimposed coupled columns, chiefly three-quarter columns, with additional clustered columns to the centres of the angle-masses or pavilions, where also the windows are larger, and the central group has a curved pediment at the top, and sculpture,—the lower order being rusticated,—whilst the intercolumns have archivolts and impost enclosures with architraves and pediments. The whole design shows what a good effect may be produced with the most simple, and even with long familiar, materials. Sculpture for the pediment is shown in a sketch, and is designed to illustrate the origin of war, and the blessings of peace. In the Foreign-office plan there is one court, from which the corridors could generally be lighted; but the defect which we believe would exist in the other case may also be found. The Residence has a feature which is very well treated both iconographically and decoratively, namely, a loggia in two of the principal stories facing the park. We regret to find that this design occupies ground extending considerably over the boundary of the space coloured yellow in the Government plans. Other competitors—the authors of what, perhaps, are the best designs—have fallen into the same error,—as we have already observed.

No. 99, marked "Δελα 27" — the authorship of which has already been ascribed—has attracted much attention since the opening of the Exhibition, both from the careful illustration of the proposed street improvements which the drawings afford, and from the idea that they represent the views of Sir Charles Barry. No doubt the chief of the improvements suggested are the result of many years' attention to the subject by the architect named, and they have this advantage as compared with the propositions of the foreign competitors,—that they make great use of the existing routes, instead of altogether ignoring them; whilst they suggest a number of works, trifling in themselves as to cost,—but of great value as to the thoroughfares, and as to architectural effect. The drawings include a general street-plan, with a number of sections and elevations, showing the gradients and the different lines of buildings along the embankment and various streets from Millbank to Leicester-square; a block-plan of the general arrangement of the Offices, and separate drawings of that portion of the main design, which comprises the War-office and Foreign-office. The author or authors, at starting, say they have been guided as to the block-plan by the spirit rather than the letter of the instructions, "which they consider to be incompatible with the best realization of the object in view." Thus they have planned one comprehensive building for the whole of the objects required to be included in the "block-plan," excepting the offices for the commissions—which would be located in the buildings contemplated by Sir Charles Barry to enclose New Palace-yard, and excepting the Somerset House branch of the Admiralty, which is very properly placed in an addition, on the north side of the Parade, to the "Admiralty, Whitehall." The offices which are left, however, in some parts transgress the boundary of the red line. We should say that the west side of Parliament-street only is appropriated,—the ground on the east side being left as at present, or to be gradually cleared of buildings.—By every one of such deviations from the letter of the "instructions," the project of the Government tends to get hitched into the exact position in which we anticipated it would be placed: here, the objects are attained in a plan which possibly more than any other demands attention, but which cannot receive a premium without injustice to competitors who have adhered to the "instructions." The authors rightly seeing that the present front of the Board of Trade is worthy of preservation, and even that the Treasury front, next the Parade, need not be demolished, adopt the Board of Trade as the wing of a building extending along Parliament-street. The State Paper-office next the park, would be the only building of any importance removed; and even the Board of Control, it will be observed, could be left for some time standing. As regards the position of the War-office and the Foreign-office,

which form part of the general design, the instructions as to site are strictly adhered to; and it is shown that these buildings could be built either in anticipation of, or distinct from the other offices. Reverting to the general street plan, in which the authors conceive it necessary to enter largely into the subject of the improvement of that part of the metropolis,—as to Westminster-bridge, the authors propose it should be completed on Mr. Page's plan,—the present site being considered the most convenient, as well as the natural line of communication with Belgravia; and it is urged as most important that the level of the new roadway, as determined by Parliament, should remain unaltered. The proposed bridge at the Horseferry is indicated; and for the third bridge, the authors offer either a reconstruction of Hungerford-bridge, or a new bridge from Charing-cross, with a second approach from the Horse Guards. If the Hungerford-bridge site were preferred, they hope that the reconstruction would involve removal of the chains, which they well say detract from one of the best views in London. The embankment is shown in some places at a high level on arches, and elsewhere—as in front of Somerset House, and Whitehall-gardens—at a low level, and adapted for promenades. Thus there would not be a continuous carriageway,—though we should observe that this desired provision, in the opinion of some parties could not be made without greatly interfering with the commercial interests. About the end of the present Craven-street, a good site is suggested for a large hotel; and the space reclaimed in front of the Adelphi, would serve for a large basin, or a metropolitan railway terminus, which could be joined to the proposed Farringdon terminus, by tunnelling under Fleet-street. The raising of the river terrace of the Houses of Parliament, is suggested as worthy of consideration. Amongst the general improvements, are the junction of the Mall with the Strand, and of the Haymarket with the park, along with the formation of a road skirting the Parade, to Victoria-street; the enclosure of the Parade, with an open screen next the park—an improvement conducive to architectural effect, and offering advantages as to the location of the troops during periods of popular excitement; a new line of street, south of the Abbey precincts, conjoined with a removal of houses opposite the Victoria Tower, to form gardens and open out a view of the Chapter-house; the formation of a garden on the river side, south of the tower; the removal of St. Margaret's Church, to a site between Tothill-street and the Birdcage-walk—the schools to be in proximity, and the Stationary-office between Tothill-street and Victoria-street; the hospital being placed in a more central locality, and the Sessions-house transferred to the Westminster Bridewell; the western towers of the Abbey improved by details of better character, and a spire raised at the intersection of the nave and transepts, whilst the Chapter-house would be restored, and a new palace added within the "precincts," for a future bishop of Westminster. Moreover, the National Gallery would be altered and greatly enlarged, and a new street to Leicester-square would be formed at the back; and a central gateway and wing would be added to Whitehall Chapel, to form a symmetrical group, the additional building being, it is thought, an appropriate location for the National Portrait Gallery. The Horse-guards would be improved in architectural character, by the alteration of the lantern-turret, and new wings to the buildings might be added, supposing that Dover House were removed. In all these arrangements, as well as in the plan of the Offices themselves, the authors have been impressed with the importance of large open spaces—at all events as an ultimate object—both for sanitary reasons and for the due display of what would be fine groups of buildings,—but at the same time they have arranged their Offices with due regard to the manner in which public money is usually voted. For the buildings themselves, taking the Board of Trade as the basis of their design, and raising the roof, they propose a similar block as an opposite wing, and a recessed centre surmounted by a quadrangular domical roof, 100 feet square, and 250 feet in height, with a lantern. This feature is sug-



gested with the view of marking the Public Offices, and as one that would contrast but not compete with the Victoria Tower. The quadrangle is enclosed by a screen of arches; and has minor towers in the re-entering angles; and there are archways through to a glass-roofed court,—which would measure 320 feet by 150 feet. The central building on the east would be the War-office,—the tower and roof being appropriate for the storage of papers. The entrance archways lead through to the Foreign-office, which has also an entrance from the park. The Residence fills up the northern side of this portion of the plan, and is entered from the park; and the chief feature in it, is a grand saloon, the full height of the two floors, with columns and galleries, and a staircase at the end, the reception-rooms being ranged around. The lighting of these rooms, from the ceilings, is well managed, and is much varied as to design. The corridors in the Offices are chiefly lighted by borrowed lights—*lanterns*,—but the external window opening is ample in area. The several departments are self-contained in plan, with entrances and passages of their own. In places for business, elaborate finishings are not deemed appropriate. In the park front, the building is carried up to a considerable height, and a long gallery with columns and arches is provided to afford a view over the park on occasions of national commemoration. It will be obvious that by the architectural design before us, a certain effect both of grouping and mass would be insured, which is hardly attainable by leaving the Board of Trade and the new buildings distinct and separate. On the other hand, the design starts from a lower key-note than the architect of the Board of Trade would have chosen under different circumstances, namely, from that of a design which, admirable as it is, was not conceived, we apprehend, as a part of an intended building, and which was itself in some degree a reconstruction of an original very inferior work.

Before the present notice reaches the majority of our readers, the exhibition at Westminster-hall will have closed,—long before it can have effected any of the great ends which we contemplated from it. We regret the loss of the opportunity much; it is a loss in which the competitors will feel deeply interested; and it should point to the necessity of having, ere long, a place even more available than Westminster-hall, for exhibitions and the like purposes. We hope to find means of completing our record of an event in architectural progress which cannot but be deemed the most important of our time.

#### ARCHITECTURE OF GREAT BRITAIN.\*

In the fulness of its capacity for rich decoration, the Anglo-Palladian has already shown itself quite equal to the most gorgeous Tudor Gothic; while, in its more simple forms (particularly in external effect), it is to our minds far more impressive. We are speaking, be it remembered, of the two styles in their application to non-ecclesiastical structures: for, simple as the church may be in superficial character, it will assert, in its towers, spires and large traceried windows, a majesty peculiarly its own. But take, for instance, Inigo Jones's Banqueting-room in Whitehall; Gothicise it with only the same amount of ornamentation: in other words, convert its columns into buttresses, its window dressings into labels and moulded work, its balustrade into a pierced battlement; and see whether a noble and handsome Palladian façade would not be reduced to a meagre Gothic front. There is not, in this, a word against Gothic design in its right place, but merely an avowment that, supposing the general outline of this building and its included solids and voids are arbitrarily fixed, the Classic mode of decorative finish is far preferable to the Gothic employed in like measure.

We shall, however, leave Whitehall for finer and more recent examples; and, as we have alluded to the New Houses of Parliament as failing to substantiate the supremacy of Gothic design, apart from the church, we will take a less spacious, though scarcely less notable building, in support of our classic plea—St. George's Hall, Liverpool. We advance it, as we did the former, with allowance for its imperfections, stating, however, our impressions that the defects of the Westminster edifice are mainly attributable to the prescribed style, while those of St. George's Hall are referable, in great measure, to the death of its accomplished architect ere

he had those opportunities for self-correction with which Sir C. Barry has been favoured. It is true, the tasteful and erudite Cockerell has well sustained the appointment so sadly vacated; but there will be certain differences between two men of equally distinguished ability, hazardous to the perfection of the one work on which they may successively be engaged. But there stands St. George's Hall, a proud monument to the genius of the late Mr. Elmes, and the leading example of the present day to support the claims of Classic design. This building is, indeed, especially Classic,—i. e. in the *antique* sense,—for, externally, at least, the modifications of the Palladian school have no share. So far, it may be regarded as pure Greek, the cause of which, in a general way, it is by no means our wish to advocate. The building is not our selected specimen of the character for such structures in the mass; but it is, nevertheless, a bright particular example of Classic triumph. What edifice, circumscribed within the limits of that oblong cube, could be made, by any amount of Gothic appliances, capable of standing in rivalry before it? No tower is wanted here. No elaborate decoration of porch, or richest tracery of window and crocketed gable, could out-face that Corinthian portico, nobly elevated on its stylobate, and crowned with its sculptured pediment. What buttress-range could equal, in *simple*, yet sufficiently ornate, perspective, the lateral colonnades, finely divided from, yet seen in conjunction with, the pillars of the front? We stop not to mention the several alterations or additions that might improve this grand exterior: we look with generous admiration upon the general development of a grand idea, the offspring of antique love and native invention; and we lament the architect is not living to hear "his country's praises poured down before him."

We must, however, anticipate the objection that may with reason be taken to the inclosure of a Roman interior within a pure Greek shell. It is as though the nave of St. Peter's were housed in the cell of the Parthenon. Without, all is square; within, all is circular. The arched aisles and the wagon-headed vault of the nave, are too directly opposed to the supercilious character of the exterior; and the mere superficial adornment of the nave ceiling is of too distinct a character from the more substantial realities of the columned piers and solid vaulting of the work on either hand. The interior, then, is not, *per se*, so perfect a composition as that of the building outwardly. But, if the former had been as complete in itself as the exterior, would they have harmonised? Certainly not; and then the question remains, whether the structure should have been pervadingly Greek, or Greco-Roman? We apprehend the purposes of the interior, as affecting acoustic requirements, have been best considered by the form adopted; and, therefore, much as we may regret the loss of that simple grandeur which would have impressed us, had the square form been observed throughout, we are compelled to acknowledge a difficulty in the application of pure Greek design, which leaves us to fall back on the more accommodating and plastic architecture of the Greco-Roman period. The remarks applied to St. George's Hall, equally refer to the church of the Madeleine at Paris; though we admit there are cases (as sufficiently shown in the British Museum) where the Athenian character may be fully carried out in all its integrity. There may indeed be many occasions in which our *box-model* will not only be completed without the necessity for a single arched opening or coiled ceiling, but in which such forms would prove inconvenient; and then the artist will be at least free to choose between the severer post-and-beam architecture of Greece, and the lighter forms of its Roman modification. In the very great majority of instances, however, the union of the square and the circular will be desirable; the only imperative care being, that the exterior shall not be all of the one, while the interior is all of the other. Each may be participative in both; and the exterior of the Army and Navy Club-house, in London, is a worthy illustration of the principle just advanced.

Our Gothic universalists will—not in evil, but in reason—opposed to our candour with this question.—"Would your Box-model, then, suggest all those engaged columns and other superficial appliances which ornament your walls and windows? Are they not merely decorative, and otherwise wholly useless? What right have you, in your utilitarian severity, to admit anything more on your façades than the moulded work on your door and window frames, the cornice which has its type in the eaves of your roof, and such few other decorations as your box developments may honestly permit?" We reply, in the first place,—The same right which you have to the application of buttresses, pinnacles, blind arches, and other *pseudo* features, without which your walls might be blank as those of a barn. Is there any lateral pressure from vault or roof to justify mural prop or vertical pressure? Is not your Tudor building a mere thing of walls and flat floors, Gothicised?

Are not your abutments and superincumbent weights simply ornamental, and, apart from that, utterly useless? Is not your blind arched work (even in your cathedrals and most important old buildings) *more* than useless? Does it not rather tend to weaken your walls by preventing equal settlement in their face and back substance? Are you not now repairing the mischiefs entailed upon your construction? What right have you to more than—? But we need not continue our repellant echo.

But this is mere recrimination; and, in defence of ourselves, we will answer for both parties; first, however, remarking, that the fashion of mural decoration by tiers of little blank arcades, so largely practised on those old cathedrals and castles (more especially on those of the Norman period) was in every sense vicious. Its injuriousness, constructively speaking, might have been in all cases avoided by management; but it was destructive of all breadth in general effect, and was in itself minutely absurd and unimaginative. The Lombard Goths had seen the accented ordonnance of the noble Colosseum at Rome, and they were ever emulating it in little on the walls of their own structures; abhorring, like Nature, a vacuum, but with nothing like art, to help them in their aversion. Pisa Cathedral front, and that of Lincoln, may be adduced as instances in particular of this showy abomination. The gate-tower of Bury St. Edmund's may be referred to as in great measure an exception to its prevalence.

To resume: the surface decoration of a piece of architecture, Gothic or Classic, should have typical reference to some constructive feature indigenous to its practical development, or to some extrinsic appliance which may have been customary. Thus the column and entablature represent the post and beam of the early Greek ruins; and the festoon of flowers sculptured on the frieze typifies festive occasions. The buttress and pinnacle of the modern Gothic edifice relate to the direct and indirect assistance necessary to the sustenance of a ceiling-vault or roof without a tie-beam, the *flying* buttress more especially. Now, though it would be most absurd to apply such an obviously constructive means as the latter to a building no way requiring it, the engaged column and entablature of Classic, and the common buttress and pinnacle of Gothic design, may be retained with a purpose of honest meaning. An ordinary garden-wall, instead of being 1½ brick in thickness continuously, may be the stronger, as well as the less unpicturesque, if it be formed in bays of one brick, with buttresses of two bricks; and thus the engaged columns or buttresses afford service for the sustenance of a wall which should otherwise be of an increased substance throughout. The entablature form of the Greek edifice is preserved as the horizontal bond of the vertical work below; and the pinnacle of the Gothic structure remains as the handsome crowning member of a vertical feature, ennobling gracefully the genius of the Gothic style.

But we now come to a point on which our Gothic opponents must be left to speak for themselves. Take away their buttresses from every building not requiring it, and they will frequently, at least, have a most deprecating loss to lament! On the contrary, deny to the Classic architect the use of his unjustified column and full entablature, and he falls back,—how? Why, as Sir Charles Barry did on his Travellers' and Reform Club-houses, where, with his bold and enriched cornice, warranted fenestral decoration, industrial courses, and rustic quoins, he stands defiant of all Gothic rivalry in respect to the conditions of his challenge. Here is no practice, no engaged columns or pilasters, showing up room basement to entablature; no crowning balustrade; no *pseudo* architectural ostentatious kind; nothing but decorated eaves, enriched fascias and string courses, a range of pedimented windows, requiring the columns that flank them; and other modest graces, as belonging to the parts they decorate, as the brows and lashes to the eyes and the lips to the mouth. Let the Goth do away with his buttresses, and mural pinnacles. Leave him with only his eaves, and windows, and string courses; and see what a pauper hospital his building would become! "But," he answers, "the genius of his style admits and requires all these discarded members, with their decorative opportunities." Just so: while our style admits, yet does not require, an equality of ornamentation. The Army and Navy Club-house, shows how we can robe ourself in rival splendour; but which, with most dignity, can wear the modest garb or even that of denuded beggary? We leave Salisbury Cathedral to attest the supremacy of Gothic design, in all its fulness, for the church; but we still ask, where is the Gothic gable-end, of equal ornate amount, which will impress the eye of a beholder like the Tuscan portal of St. Paul's, Covent-garden—"the handsomest barn in Europe?" Or who shall contrive, with the same contents of unwrought

\* See p. 226, ante.



stone, a Gothic coved, equal in service and effect to what may be produced by a back wall, two low end gables, and a front of three openings, formed by two unheaven granite posts, supporting a continuous listel-course of the same material?

If we still refer to Gothic design, it is because the allusion is necessary to our more immediate subject.

The window is a most influential matter in our theme. In pointed architecture it is the primary telling feature, separately considered; nor shall we compare with the wooden bars of a square or circular-headed sash or casement, the fascinating beauties of the Gothic window, with its moulded stone transoms, and mullions ramifying into richest tracery. In a church, the maximum size is given, governed only by the proportion allowed in the most attainable height, or width, as the case may be; for the remaining light, unobscured by the mullions, transoms, and tracery (and that often subdued by deep colour in the glass), will never be more than enough for those who are not over sentimental on "the dim religious." The glazing, too, is not to open, but to remain fixed with lead and iron in the stonework. The winds and waters may do their worst. But in all other buildings, there will be many of the windows requiring hinged casements or sliding sashes; and then these mullions and transoms become fearful conductors of the tempest. By expensive means of wooden extra frames, masonry, and copper slips, it may be kept at bay; but the means are makeshifts, and insulting to the integrity of the architecture which is especially one of stone. In a Greek or Italian building, as before stated, we may consult our climate, in requiring a maximum of light and air through a minimum of general opening; and if that opening be more than admissible for the ordinary proportions, we employ intermediate columns, and introduce the triple-light Venetian composition,—only to an occasional and plain extent the unuttering difficulties of the mullion,—and having a legitimate right to the use of wood, &c. The engaged columns, also, and their covering entablatures, which may be applied on each side and above the window architraves, are greatly protective, while they form a decorative adjunct more than can be possibly afforded by the stonework of a Gothic window admitting only equal light; and, since the classic window is thus shown to be the best for all ordinary purposes, it follows, that the style of architecture which alone admits it, has one more credential, and a very strong one, in its favour.

The doorway, in Gothic and classic art, is equally susceptible of pictorial treatment; or, we may indeed admit, that, individually, it may assume an impressive character in the great Gothic structure scarcely to be equalled in any other: its cavernous depth of pillars, mouldings, and concentric rings, narrowing as it recedes, affording most available opportunity for ornate display and effective contrast, or variety of light and shade. We have now, however, to speak of that which may be required to stand before it.

To the doorway of every building the close porch is common; and both Roman and Gothic porch may be protected by the open arcaded inclosure; but the portico of columns and entablature is only to be had from Greece. A shed, for the brief temporary convenience of the coming or departing visitors, is often a necessity to which the simple close porch is inadequate. The larger open arcaded appendage, in consequence of its solid spandrils, and the broad square angle piers demanded to resist lateral pressure, presents a mass of masonry greatly obstructive of the windows behind it, darkening the entrance vestibule and the room above to a much greater amount than will be occasioned by slender round columns preserving the entire altitude of the light, which arches would secure only at their crown. Thus we select the shed of post and beam, and artistify it into the portico. The proportion of the Roman orders—Ionic and Doric—are more slight than those of Greece,—the Corinthian the same in both cases,—and we therefore find another reason for selecting the Greco-Italian style.

The classic portico is unquestionably the most beautiful single feature in architectural design; complete in itself; comprehending, in fact, an entirety,—the whole front or flank of the Greek temple. That porticoes are often mere ostentatious appendages, ill connected with, or wrongly applied to buildings not requiring them, is most true; and we quite participate in the aversion of our severer critics to the habit of wantonly sticking up the end of a Greek temple against the side of a modern structure. But the error has resulted from the just estimate of the portico as a thing in itself surpassingly beautiful; and, in our admiration of it when finely exemplified, we care not to know whether Mr. Wilkins was, or was not, justified in the noble and elegant specimen which adorns the London University. It has, however, no less justification than the Victoria Tower of the Westminster Palace.

The mention of the London University, without a

more eloquent prompter, would have suggested our next consideration,—that of the dome,—the imperial crown of Roman majesty,—and for the loss of which, the towers of Gloucester, Canterbury, and Victoria, the spires of Salisbury and Lichfield, and the lantern of Ely, would be inadequate compensation. The elevation of the dome of the Pantheon on the vault of the Temple of Peace, was a conception worthy of Michelangelo; though, by the way, it was no more than a modification of what had been already done by Brunelleschi. The Duomo of Florence was parent of the cupola of St. Peter's. Our determined resolve in favour of the Gothic style for the church may excommunicate St. Paul's from ecclesiastical position; but the dome of that building remains, none the less, the most majestic piece of architecture in the world; and, when we can transfer its bishop to a new cathedral, which may show how Christian Pointed design is compatible with the spirit and character of the Protestant faith, the present cathedral may be converted permanently, as the Church of St. Genevieve was for a time, into a cenotaph, "Aux Grands Hommes la Patrie Reconnaissante." The great men of philosophy, poetry, literature, science, art, and war, may there repose in marble effigy; leaving Westminster Abbey as the mausoleum of monarchs "by the Divine Grace of God," and ecclesiastics of "apostolic descent." The mountain amplitude of the Dome externally, and its internal firmamental expanse, are presentations too nobly impressive to be forfeited; and the frequent necessity for its use, as the natural covering of substructures circular in their plan, and admissible only in the Greco-Roman edifice, is at once a vast additional reason for Greco-Roman design in our non-ecclesiastical buildings.

And here we may refer to a thoughtless objection often taken to the external dome of St. Paul's, as being a falsehood,—a mere show and sham of wood and lead work, over an internal and lower cupola of brick! As well might criticism denounce the wood and lead covering over the vaulted ceilings of nave and aisles. In both cases, the sub-masonry is covered by a fitting wood roof; however, in either, the covering might be of stone lying close upon the work underneath; and, certainly, the upper dome of St. Paul's has as legitimate conception with the brick cupola beneath, as the high-pitched wooden roofs of the Gothic cathedral with the vaulted ceilings below them. The late Pugin's contemptuous reference to the "fictitious dome" of St. Paul's, only occasions a contemptuous retort. He was a most prejudiced and bigoted critic; and by no means the most successful of our Gothic architects.

And this brings us to the final consideration of the roof question. Much has been said about the advantage of the high Gothic pitch, in throwing off the snow and the wet more readily than the low pitch of the Greek or Italian building; and where there is no parapet, the advantage is admitted. But, inasmuch as the parapet is invariable in all first-rate Gothic structures, and is never seen in the Greek temple, nor required by the most perfect Roman buildings, the argument falls to the ground much more readily than the wet, which, on the contrary, fills the Gothic's gutters more quickly than the water-pipes can carry it off, and hurls avalanches of snow down to his parapets faster than spades can relieve them. The practical results of the two forms being thus disposed of, we come to the economic consideration, that the highest Gothic pitch doubles the quantity of timbering, and nearly doubles the amount of lead or slate required by the lowest pitch of the Greek roof. There is no necessity to enlarge on this all-sufficient fact, which is adduced simply in favour of "Classic" art as applied to non-ecclesiastical designs; and not with any view to lower the Gothic gable, which, in its proper place, is no less to be cherished than the Greek pediment.

Enough has been urged in support of our conclusions on the universal admission of Anglo-Classic architecture for everything save the church and its immediate alliances; and much more than we have advanced might be said in explanation of our exceptive reasons for the Gothic as applied to ecclesiastical structures. All, however, that remains for us is to state the conviction that much has yet to be done in the modification of both styles to their respective present uses. During the last thirty years we have been gathering precedents and making experiments, some of the latter being highly successful. Our country has become a very museum of architectural design; and the courts of the Sydenham Palace (substantially illustrating the idea of the author of "The Palace of Architecture," published some seventeen years ago\*), form but an epitome of the court which architecture has held in Great Britain during that period. She has had assembled before her, the old and modern Goth in every guise, from the Norman to the Florid Tudor; the veritable and the imitative "Old English Gentle-

\* Wightwick's "Palace of Architecture." James Fraser, London, 1840.

man;" the Italian, in all his costumes of Rome, ancient and modern, of Venice and Vicenza, palace and villa, Lombardic and basilical; the Greek, in his pure attic dress, or with Romanised addenda; the Egyptian, the Mahomedan, and the mongrel of Byzantium; and one remarkable and fantastic original, the Soanean. In London and its immediate vicinity all these are presented, to the wonder of observance and the perplexity of selection.

It is comforting, however, to see, that the vast numerical preponderance rests with the Goths and the Greco-Romans; and it is only to be hoped these two great parties will soon settle their differences by each taking to itself what to each most fitly belongs. Our religious dissenters are becoming, on each successive occasion, more inclined to emulate, with the Established Church, the use of Gothic detail; and ere long every place of Christian worship will, in common, wear the Gothic garb in friendly alliance. In their churches, chapels, colleges, schools, and the residences of their ministers, there will be abundant opportunity for the full development of Pointed design; the circular Norman or Romanesque being, perhaps, consigned to the prison, in regard to the severe expression, for which it is so admirably calculated. Indeed, in every respect practical as well as pictorial, the Norman architecture is peculiarly suitable to the goal. Its simple semi-circular vaulting, sturdy piers, plain square buttresses, and small windows, so obviously suggest themselves, that we are left to wonder there has yet been no example (so far as we are aware) of its adaptation to such a building.

A few words more on the subject of a certain particular virtue ascribed to Gothic design. We have just seen advanced by an amateur lecturer, that it is advantageous in admitting irregular clustering, and the placing of windows, doors, and chimneys, any how, without regard either to horizontal or vertical regularity! Now, in the first place, this is making a virtue of the evident carelessness or want of ingenuity too often most culpably evinced by the old builders, who, having learned to work out the details of the structures on which they were engaged under architects, presumptuously undertook the plans and elevations of other buildings, without any ability for their proper composition; and it has struck us as peculiarly absurd to see the reverential acuity with which such manifest abortions have been measured and delineated by modern teachers and students. Ground-plans of old houses, without a right-angle in their rooms, and elevations obedient to the most clumsy internal arrangements, have been engraved with all the extreme nicety of the plates in Stuart's "Athens," till a contempt for all order has become the order of Gothic art. But all the irregularity, which is legitimate in it, is equally obtainable in the modern Italian villa: the same clustering of differing parts; the same variations in their forms and altitudes; the same opportunity for large and small windows on the same level; for bays, external projections, and internal recesses; for chimney display, open parapet, and, in short, for every charm of freedom, including the belvedere tower as its crowning appendage. The clumsy builder of the present time has just the same right to avoid placing windows directly over each other in his Italian villa, that his clumsy predecessor had in the old English mansion; but we should decidedly object to any such violation of common constructive propriety, even if we were bent on the determination of building the most ordinary Gothic farm-house.

Lastly, having regarded the Gothic and Classic apart in hostile rivalry, let us briefly consider them in an amicable and conjunctive point of view. A walk through Oxford and Cambridge will show how pleasingly the two styles may associate; and we ask any man, of reasonable Gothic predilection, whether he would not think either University much deteriorated by the conversion of certain of its Roman edifices (we by no means refer to all) into Gothic examples of only equal scale and cost? The Radcliffe Library, estimated internally as well as exteriorly, is, after all that may be said for the churches of Magdalen and St. Mary, the coronal pride of Oxford. Its dome is more effective in the distant view of the city than any equal addition to its towers and spires could have been: its Corinthian peristyle agreeably contrasts with the Pointed and Tudor architecture immediately around it; while the imposing circular arcade and cupola of its interior give a new interest to the observation which has possibly been sated with an abundance of Gothic monotony. Even the famed High-street derives no small amount of its charm from the picturesque mingling of the two styles; and Wren's mongrel architecture in the west front of Christ-church College, wherein they are united, is at least an illustration in favour of such variety as may be justified by the changeful application of appropriately differing materials. Again, at Cambridge, the Corinthian Senate House neither deteriorates, nor is deteriorated by, the noble chapel of King's College. With other buildings of rich Roman design, it asso-





OFFICES OF THE ROYAL INSURANCE COMPANY, LOMBARD-STREET.—Mr. J. BELCHER, ARCHITECT.

ciates (like the theatre, and its brothers in style, at Oxford) in no more than admissible variety with the Gothic structures near it. We have admitted the exclusive application of Pointed design to all edifices allied to the Church; nor would we evade the principle as it affects the colleges and other educational buildings in our Universities. True, "town and gown" are very different things, as sufficiently shown in some particular instances not very creditable to either party;—but the architecture of the one may differ from that of the other, on terms of less hostility. Our object has been merely to show how two styles of art, respectively the most appropriate to two great classes of service, may agree to differ, and so mutually advantage each other. Let the university buildings wear their canonical gowns and caps with undeviating punctiliousness; but let all the remaining edifices in the Towns which contain the universities, maintain also their distinct costumes. They have still their Guildhalls, Assembly-rooms, theatres, market-houses, their museums and galleries of art, their banks, warehouses, shops, mansions, club and private houses, their bridges, arcades, and all the opportunities of square, circus, and terrace, wherein the imposing and elegant suggestions of Palladio, Wren, and Barry, may be fully developed. Gothic art would stand in the distinct reverence it claims, and Greco-Roman design would be left to the honour it merits. Both might be cultivated into the perfectness of truthful expression; and we should once more have a NATIONAL ARCHITECTURE.

GEO. WIGHTWICK.

#### LONDON BUSINESS HOUSES.

THE ROYAL INSURANCE COMPANY.

AMONGST the new business premises recently erected in the City, are the offices of the Royal Insurance Company, just now completed, at the corner of Lombard-street and Clement's-lane, and of which we give a view in our present number. This building has been erected from the designs of Mr. John Belcher, and, with the exception of a granite plinth, is entirely faced with Portland stone. The ground-floor is appropriated as the general business room, and is partly covered by a mezzanine floor. On the first floor is the board-room.

The success of the Royal Insurance Company, and the position it has attained, are remarkable. The *Times*, in a paragraph in their money article of 24th July last, relating to fire insurance companies, commented favourably upon the "Royal," stating their transactions to have been of a perfectly satisfactory character. The analysis of this company's returns for the three years ending 1855, shows the total of 371,957*l.* fire premiums in that period, and an amount of losses and expenses of 296,020*l.* leaving a total surplus of 75,937*l.* on the fire branch alone, in the three years.

The expansion of the company has continued since that time, as the fire premiums only, in the year just ended, have reached the amount of 150,000*l.*—a revenue which, it is stated, only three or four fire offices in

the kingdom can equal. In the life branch the number of policies issued last year exceeded 700, assuring about 850,000*l.* and producing new premiums alone, of more than 10,000*l.* This amount of business is attributed in part to the large life bonus declared by the company in 1854, being at the rate of 2*l.* per cent. per annum on the sums insured, which averaged in reversion 80 per cent. upon the premiums paid. It may be added, that the amount of realized profit requisite for such a bonus could only have accrued from the circumstance that the magnitude of the fire branch of this company left the life department almost unweighed by the general expenses of management. Indeed, from the published returns of this company, it would appear that in the ten years preceding the declaration of their bonus in 1854, the total amount of expenses charged against the life branch slightly exceeded 1,600*l.* per annum, which accounts for the amount available for division at the end of that period.

After the recent painful revelations of extravagant expenditure in connection with several life insurance companies, the economy of management by which the "Royal" appears to be favourably distinguished is noteworthy.

HUME MONUMENT FOR MONTROSE. — Subscriptions being realized and promised to the amount of nearly 500*l.* the subscribers have authorized their secretary to correspond with Mr. Handyside Ritchie and two other artists as to sketches.



## THE "PER-CENTAGE STYLE."

As I expected and intended, the "malignity" of my mode of treating styles has, even without advancing beyond so initial a matter as block-planning, brought down the thunders of professional wrath upon that one neglected but vital point which it was my object to get ventilated, the mode of paying the designers and directors of others' labour.

I should not have begun comments on the Westminster plans at all, but for the good occasion this seemed to afford for concentrating on that point such attention as I find nothing, however important to public interests, can hope to gain, till passions are aroused upon it somewhere; and this being already the case, I am gladly spared the very thankless task of wading through to unmask such a dreary waste of pretentious imbecility as the 300 non-Gothic elevations.

The "Competitor for the Block-plan" (who need not have said whether he was a competitor, but might have signed his strictures as I do, and not treated your office as a Venetian lion's mouth), thinks I "insinuate" that "men have selected their style, on the base, paltry, contemptible principle of its combining," &c. Now, first allow me to assure him, that if stooping to insinuation at all, I should be so far from meaning to insinuate this or any selection, on the part of the non-Gothic competitors, that I do not believe them capable of any. Nothing in their works evinces to me that they could have competed in another style; so that their selection of a style was simply, I conceive, that kind of choice to which one Hobson has left his immortal name. In short, I hold that they have not chosen or appropriated their style, but the style has appropriated them. Without it, no such men—that is, no such designers—would have existed, or been possible. False and corrupt art, like every other fallacy or corruption, breeds tribes of well-meaning mischievous men; just as dirt seems to generate well-meaning vermin. First, a smoke from the pit darkens the air, and then out of the smoke come locusts. Thus without the Renaissance architecture (or some other development of the false and directly antichristian principle of *fashion*), no such race as these modern "architects" could have arisen. These men would never have touched pencil, and, instead of standing between a mystified people and truth, they would now be better employed, perhaps harmlessly, possibly even usefully to mankind.

But next, I cannot see the "malignity" of the supposed insinuation, if made. "The base, paltry, contemptible principle," of combining "the least amount of labour with the largest amount of pay!" Why, mercy on us! this is the very principle on which I always work, always intend to proceed, and thought of it a did. Since it was said, "In the sweat of thy brow," I really thought the seeking a minimum of sweat to a maximum of bread, was a principle never overlooked, either in selecting styles or any other human work. But it seems the display in Westminster-hall is superhuman, that we are indebted for it to a band of 218 beneficent angels.—I beg a thousand pardons of your correspondent and his 217 celestial colleagues, and thank that to him the principle may be base and contemptible. It cannot be so to me, nor those on whom the public must in general, omitting this very exceptional case, depend for their architecture. I can quite echo his disinterested sentiment, that he had rather carry out a work in his "grand" style "for one per cent. remuneration," than some Gothic creations, "for ten times that amount." I will go so much further as to tell him, "from the bottom of my heart," that I would rather be the unrewarded author of No. 35 or No. 106 (not that I fear the former will be unrewarded, but 106 is as likely as not to be so).—I had rather, I say, be the author of one of these, and "fail," than own the superiority of any work the nation has yet obtained by competition, together with its percentage, and get the two first prizes most likely to be awarded on this occasion, and the "5 per cent. on the outlay" to boot. Men who can produce such designs as those two, or even as the second-rate Nos. 24, 26, 100, 129, and 140, can afford to "hide their time." It is the appearance of so much true art as this (even of Nos. 35 and 106 alone among the base sort of Gothic designs; and, on the other hand, the total absence of any sign of this sort in the whole deluge of Renaissance that floods the Hall)—it is this astounding phenomenon that has completed my conversion, after much warring, to the creed that we must now be content, in all public works, to take Gothic or nothing; and I believe this exhibition, whatever may be its immediate physical result,—no matter what may be the decision as to these two buildings,—will have given the effectual *coup-de-grace* to Classicism, one way or another; most speedily perhaps if the choice fall on a Classic design, which in that case will have the honour of being the last of its race in England. And, indeed, it will be far better, both for the "Gothic interest"

and for that of truth (for pray do not think I hold these identical), that our gullible country should thus pay, like Milton's imps, one more pilgrimage to the dust-heap,—have one more ash-chewing on a national scale, than that some modern-spirited, pseudo-Gothic, as the Palace of Westminster, or No. 116, should raise hopes whose certain failure would at once mortify as much as the former, and raise disgust against the Gothic name; as Sir Charles Barry has already done, to the great hindrance and throwing back of true progress in this country perhaps half a century. In the absence, therefore, of any *living* design, or having in the Hall only imitations of dead styles, I quite agree with the *Saturday Review*, not indeed in its very natural delusion by No. 116 (whose selection, I think, would be, on many accounts, the greatest misfortune that could happen), but in its dogma that, "Not to be a failure, the building must be Gothic, and Gothic of the first order of" talent. I alter the last word, the reviewer having written it "genius," because I have always held, since thinking on the matter at all, and still hold, with Mr. Fergusson and your correspondent "Forward" (though, unlike him, an intense "Philogoth"), that if we had a particle of genius, we should not build Gothic at all.

But it is idle disputing of styles, while we are in a radically false position, and have only to open our eyes to see that our "distinguished reputations, living or dead," never carry with the public a particle of respect, but rather the more they are distinguished, the less respected,—that their place in the popular Pantheon is as far as possible from any Poet's or Artist's Corner, being simply among the Hudsons and Burnams,—and that the very name of architect is often enough, as a speaker at a meeting lately reported by you observed, to raise a hardly suppressed sneer. Of course your "Competitor" correspondent does not like the "*animus* displayed," in talking of a "Per-centage style;" but he cannot observe society much without perceiving that it is the *animus* generally held towards him everywhere, and one which he can easily extinguish any day,—one which it lies entirely in the power of architects themselves to terminate, any day they please. If he does not know how, or if any of your readers find "practical" difficulties in it, I will gladly show them, only observing here that I believe in a sort of infallibility attaching to the popular instinct that in such matters, "where there is a will there is a way."

Now, to return to the competition, can any one seriously believe the report that Messrs. Angell and Pownall, or any other respectable men, have accepted the task they are said to have done (and which certainly it is very natural the judges should wish to delegate)? I cannot believe it. Without the least countenance to the wild idea of making competitors their own judges, I must maintain that they are the best fitted of all men, or rather the only fit persons to be each other's assessors; and this is what I imagine must be meant by their voting in those old Greek competitions. If the tribunal be indeed a "dignified" one, let them call on every competitor who will, to make a separate written statement which of the designs he accepts as fair antagonists, and the reasons why each of the others appears to him unfair. Then the judges, by striking out first the design that has the greatest number of challengers on the same ground, and on different grounds, then the design that has the next greatest number and so on, may soon, if I mistake not, reduce them to a very manageable number; perhaps to any small number they may like to stop at. Of course, there is the risk that the design most useful to the public will thus be excluded; but only, observe, from the advertised prize-list. The public need not lose the best building, as Government is nowise bound to create any of the prize designs; and it was easy enough to forget (as you, I believe, did) from Sir Benjamin Hall's well-meant but highly instructive, that this is a case where the prize-giving, and the choice of a building, must be totally distinct and independent.

The *Saturday Review* cares not who gets the prize, but "is nervously anxious about the actual building"—a most short-sighted nervousness: for it is not the actual building, but solely the manner of prize-giving, that will decide what manner of men shall be attracted to future competitions—whether artists, or adventurers, or quacks, shall be our future architects; and this is far more important than what style of Foreign or War-office is built. Some such proceeding as above indicated is certainly now due, as a reparation for the breach of faith already committed in stating falsely that shadowed elevations, super-numerary perspectives, bird's-eye views, &c. would not be "admitted;" which, if it meant anything, meant, not viewed by the judges. True, a selection even by the most competent professors, from *outline elevations*, would be a mere farce, hardly more rational than a choice from written specifications without a drawing; but this is what Sir B. Hall meant: "In line only," meant, in *outline* only, be-

cause no sane man would require the tints to be embroidered with lines rather than washed, without giving a reason. Of course Government might have required all lines to be dotted, or every word to be written eight times, or every stretcher to be dovetailed; but then these conditions would have been unambiguously set forth.

After all, however, it will be found, by failure upon failure, and mortification after mortification, that no drawings afford the means of comparing more than the very simplest every-day designs. Models (as used in the middle ages) must be required; and all drawings, except plans, excluded utterly, before a real benefit will be got from competition. Another grand fallacy is the offering of minor prizes, under the idea of getting two or seven really studied designs, for less than two or seven times the price of one; a thing plainly impossible by any dodge whatsoever. This overspurned cupiditv outwits itself, and the only effect of secondary prizes is to foster a production specially meant to meet the case, a class of designs like Nos. \* or \*, counting on John Bull's worship of what he calls "Industry," to insure a prize of some sort at all events, by sheer capitalist enterprise, of a kind that a contemporary paper calls rather coarsely "over-reaching"—and, indeed, two or three cases of a first prize obtained in this manner would suffice to alter the entire art of the country, and reduce it to over-reaching pure and simple.

But, after all, no carelessness of instructions will avail while the absurd clause of remuneration by Percentage "on the outlay" remains. It is sufficient to neutralize all provisions, no matter how wise, and blast all hopes for an architecture that the public can appreciate.

E. L. GARBETT, Non-Percentage Architect.

P.S.—Perhaps it is necessary to explain that in calling all the designs "imitations of dead styles," or more properly, "dead imitations of styles," I neither forget No. 95 nor No. 134. Both are very instructive studies to warn one of the fallacy of seeking *originality for its own sake*. Both fail, not from weakness that I can see, but from entire misconception of the ends of true and living architecture; and I cannot but think that had their authors studied that capital volume, Mr. Ruskin's "Foundations," and especially the chapter entitled "The Material of Ornament," they might have learnt what they have to do, and possibly have done something. Even their present elevations, or at least No. 95, I am convinced, would, if executed, give more satisfaction than any classic buildings we could erect, though like them utterly false and affected. I have noted Nos. 39, 46, 48, 50, 52, 59, 76, 78, 81, 103 (War-office only), 110, 113 (Lutetian), 114 (Dome), 124, and 146 (the last being a very clever burlesque apparently directed against recent taste), as containing original features or combinations that imply a possibility of their authors producing respectable work, if they should happily be led to abandon all classicism, but not otherwise. Observe, by the by, the perfect analogy of the classic 146, to the Gothic 54, the temple-front inserted between the divided halves of the former, like the church-front in the latter!

E. L. G.

## A SANITARY FACT.

## THE FEVER HOSPITAL.

A FEW years ago, when the Fever Hospital was removed from King's-cross to its present site in Islington, those living in the neighbourhood of the proposed new hospital were in the greatest state of alarm at the idea of a pestilential disease being brought to their doors. Some recent inquiries respecting the feeling of those who surround the hospital at the present time show that the sort of panic which had stricken the people has, after some years of experience, vanished. The houses in all directions are let; and, although a formidable number of fever patients are brought here in the course of the year, the general health of this part of the Islington district is said to be very good.

Since the establishment of the hospital, we believe only one fatal case of what is considered infectious fever has occurred within a wide circle round the hospital; and it is not unlikely, judging from an examination of the place, that the fever here was originated by the ill-condition of the particular locality.

Thinking of many spots,—the hot-beds of fever,—one of our assistants recently examined the institution which kindly-minded persons have established for the purpose of relieving one of the most terrible "ills which flesh is heir to," and it would seem from his account that the medical men who advised in the construction of this building thoroughly appreciated the value



of sufficient space for every patient—good ventilation and cleanliness. The visitor here will admire the wide and spacious staircases and passages, and the ingenious means which have been taken to provide a sufficient quantity of pure air, so much needed for the recovery of patients, and also for the safety of those who are in attendance upon them.

This building principally consists of a frontage, in which are situated the dwellings of the resident medical attendants, nurses, &c. Here are also offices for the transaction of business, and all this seems, by the arrangement of the ventilation, to be kept clear from any dangerous miasm which might arise in the fever wards.

From the front, with a large open space between, stretch the male and female wards. Each of these is divided into two apartments of great length by a wall, which is pierced by circular openings; so that, although a feeling of separation is given, the breathing-room of the patients is not decreased. This does not meet our demand for windows on each side of a ward open to the air, so as to get the most complete natural ventilation, but approaches it. These wards are pleasantly lighted, and in each wing are four rows of beds for the patients.

The cases which come here are from the neighbourhoods whence they might be expected, and would convince the most obstinate of the bad results of unsanitary arrangements. Behind the wards there is a large garden, with steam-washing apparatus, and other accommodations. Viewing the results of this establishment as important evidence, and anxious to aid the work it has in view, we insert a statement from the resident medical officer:—

Fever is pre-eminently one of the preventable diseases. Only compare its prevalence in some and its rarity in other of the metropolitan parishes, and we shall be at once satisfied of this. Without entering into a minute discussion of the causes of fever, let us ask where does these parishes differ from each other? On the slightest examination our attention is at once called to three important conditions—ventilation, drainage, and cleanliness. It is precisely where these are most deficient that we see fever most prevalent.

In the management of fever cases we, therefore, naturally expect that these conditions should be specially attended to; and that the patient should be removed from the hotel where he caught fever to an abode where he shall be under the most favourable conditions to health. This is, perhaps, the most important part of the treatment; for frequently the administration of medicine is of little avail, so long as the patient remains under those conditions to which his fever is due.

This hospital is a recent erection, having been removed from King's-cross to its present site in Liverpool-road, Islington, in 1849. In its construction all points relating to ventilation, drainage, and cleanliness, were attended to. It occupies about three acres. The buildings cover about an acre and a quarter; and there is a large garden of an acre and a half, in which the convalescent patients take exercise. The wards are in two wings, one on each side, and are distinct from the centre building, in which are contained the apartments of the resident medical officer, secretary, matron, and servants. Attacks of fever among the occupants of this centre building are now rare; whereas in the old building, which consisted of one block, the officers and servants were not unfrequently attacked.

Each patient on admission has a bath, and provision is made to convey the patient directly from the bath to bed.

The wards are very spacious and airy: 2,800 cubic feet are allotted to each patient. The hospital has accommodation for 200 beds.

The majority of the patients are paupers. Provision is made, however, by a distinct set of wards for a superior class of patients, who pay according to agreement. These wards would, I doubt not, be more frequently used if their existence were more fully known.

It may be taken as evidence of the efficiency of the arrangements, that I am not aware of a single case of fever having occurred in the neighbourhood referable to contagion from the hospital. While we constantly get cases from Islington, they are seldom or never from the vicinity of the hospital.

The importance of the hospital to the general health of London must at once be evident. What would have been the result of leaving the 1,800 cases, admitted last year, at their own homes, to generate and spread the contagious disease under which they were suffering.

While fever is, on the one hand, preventable—on the other it spreads rapidly, if precautionary measures are not adopted. How can fever be expected to be curd under the same circumstances as those under which it arose?

To provide an institution into which these unfortunate cases of fever can be placed, and the best chance of recovery given to them, is not only a boon to the patients, but also a great contribution towards the health of the inhabitants of this metropolis.

As such an institution, this hospital demands and calls loudly for support to the inhabitants generally—a support greater than that it has hitherto met with, and from want of which the sphere of its operations is limited.

JOHN D. SCURRAH, M.B.

#### THE SCIENCE OF THE BUILDING ARTS.

##### CRUSHING WEIGHTS.

At the late meeting of the Architectural Publications Society, I endeavoured to call the attention of the profession to the unsatisfactory character of the recorded observations upon the subject of "crushing weights," and you were so kind as to notice briefly the remarks I then made. I fear, however, that I did not then sufficiently explain myself; and I therefore venture to trespass again upon your attention, whilst I endeavour to lay before you and your readers the reasons I have for urging all practical and scientific men to examine this particular detail of the science of the building arts.

The various tables which appear in recent works upon construction, are mostly copied from the papers originally communicated by Mr. G. Rennie to the Royal Society, by M. Vicat to the "Annales des Ponts et Chaussées," by M. Belpaire to the "Annals des Travaux Publics de la Belgique," or from the works of Tredgold, Barlow, Navier, Hodgkinson, Fairbairn, Clark, &c. In these various essays there is, no doubt, an extraordinary amount of information; but I confess that I cannot consider the bulk of it to be of a practical nature. For instance, Mr. Rennie's experiments upon the resistance of building stones, were made upon cubes measuring 2 inches or 1½ inches on the side; those he made upon metals were made upon cubes of still smaller dimensions. Vicat's experiments were made upon cubes of one centimetre on a side (0.3937 inches); and Belpaire's upon prisms of 2 inches on the side, and of variable heights. But in actual works, the dimensions of stones or metals are hardly ever so small; and the indications given by such carefully selected samples may differ seriously from those which would be found to represent the resistances of the heterogeneous materials used in building. The crushing weights given in the books must then, I conceive, be simply regarded as approximations.

In practice, also, the indications given by the resistance of a small cube of stone or brick, can be of little use in guiding the builder's proceedings, because the manner of making the joints, or of bedding the stones, &c. must entirely alter the whole of the conditions of their resistance. Rondelet's observations upon the crushing of the pillars of St. Geneviève (copied by Genieys, in his tables), and Mr. E. Clark's experiments, at the Britannia-bridge, are, indeed, in my opinion, the most valuable ones—I had almost said the only valuable ones—we possess on the real, practical conditions of buildings in this respect.

But the particular reason for my bringing the subject forward is this. I have lately observed, even in the best works on construction, some of the most remarkable blunders, errors, and misprints; and as the tables, which are issued with the authority of a great name, are usually received without question, and blindly followed, these errors may, I fear, produce disastrous results.

Thus, for instance, I find in the Report of the British Association for the Advancement of Science, 1840, p. 205 of the "Transactions of Sections," a misprint of some kind in the sentence beginning, "In solid pillars, whose ends are flat, we had, from experiment, as before, strength in tons =  $44 \frac{3}{4} \frac{D^2}{L}$ ," because, evidently, as  $D$  = the external, and  $d$  = the internal diameter of the ring of metal, the formula must apply to hollow, not to solid columns. On the next page there is, however, a more serious error. The resistance of cast iron to a crushing weight being given in p. 205 thus:—Strength in tons =  $44 \frac{3}{4} \frac{D^2}{L}$ ; that

of oak is given in p. 306, =  $69 \frac{D^2}{L}$ ; or, in other words, the strength of oak (to resist a crushing weight) is thus stated to be more than one-third greater than that of cast iron; whereas, by the subsequent paragraph, it is said to be only about one-tenth of the same resistance. I thought at first that the error had arisen from the omission of the decimal point between the 6 and the 9; but it is too great for any such explanation. Mr. Fairbairn, also, in his "Useful Information for Engineers," gives, p. 232, "the resistance per square inch of wrought iron in

lbs. = 70,000;" whilst at p. 228 he gives it = 70,000. Evidently the two last discrepancies arise from misprints.

It is not so easy to explain the error in the "Transactions."

I cannot help suspecting that the alteration Mr. Hodgkinson has made in the paper thus alluded to, upon Euler's formula, is hardly of sufficient practical importance to compensate for its awkward character. Assuming the co-efficient for cast iron to be correctly given as  $44 \frac{3}{4}$ , there is really so little difference between the results of the formulae,—

$$R = 44 \frac{3}{4} \frac{D^2}{L} \text{ and } R = 44 \frac{16}{13} \frac{D^4}{L^3},$$

that, for my own part, I should not hesitate to adhere to the latter. It will, however, be found that both of these formulae are, after all, merely empirical, and that if the value of  $D$  (the dimension of the smallest side of a square column) be taken either as a maximum or as a minimum, the results in both cases will differ in such an extraordinary manner as to prove that no reliance can be placed on the formulae. They are tolerably correct when the value of  $D$  = 6 inches; but when  $D$  = 2, or = 12 inches, they cease to apply. Of course this must be the case when the member of the equation  $D^4$  is to be affected by another member,  $L^3$ , on account of the great difference in their powers.

I trust that the importance of this subject will serve as my excuse for questioning the authority of men for whom I have so profound an esteem as I have for those named, and for occupying your valuable columns.

GEOR. R. BURNELL, C.E.

#### THE NEW READING-ROOM, BRITISH MUSEUM.

##### ITS OPENING TO THE READERS.

During the few days that the new room was thrown open to the public, the number of visitors day after day increased in a surprising manner, and many have expressed disappointment at not being able to avail themselves of the chance of viewing this interesting example of modern construction. It has been suggested that the new room might have remained closed to the readers for a week or two longer, so that the public might have had the opportunity of access to it. This would have interfered with the labours of many who are engaged in providing matter for the periodical literature of the day, and others who are employed upon works which it is important to produce at a stated time. It has been arranged, however, to admit the general public for an hour or so each evening when the readers have left.

The old room, with its peculiar memories, is now a thing of the past; and the new accommodation is becoming familiar to the usual frequenters of this institute. The old entrance in Moorgate-place, through the spiked iron gates, is now closed as an entrance, and the readers reach the new room by the main entrance, to which the glazed doorway of the new room is directly opposite.

At the time of our first visit it was curious to notice the experienced readers moving to and fro, examining the various arrangements, and fixing in the most suitable spot for their future operations; and the bent of each one's pursuit might be guessed by the portion of the circle in which he planted himself.

The tables for readers, which radiate from the centre, are marked A, B, C, and so on; and each separate seat and portion of the tables is numbered from one to the number of persons for which each table affords accommodation. It is requested that on each ticket for books the letter and number of the writer may be marked: this plan enables the attendants easily to bring the volumes to "R 2" or "A 16."

At the end of the various tables and in other parts of the room are plans printed on cardboard, and distinctly coloured, of the arrangement of the books, which enable any one to know in what direction to look for the books on anatomy, botany, or other subjects.

The space devoted to the use of each individual is ingeniously arranged. On the right hand is a moveable easel: the front surface can when not required for use be folded up three times, and then by side joints be made to fit into a recess. This easel is so contrived that it can be raised to any angle, or turned by a circular movement as required. In the centre of the seat is the letter and number of it: below that is the ink-well and rests for pens: on the left-hand is a leather cushion, which shuts up with a spring, on which books may be rested; and on the table there is plenty of room for papers and other matters. A hollow partition divides each row of readers, and is covered by an open brass wirework grating, along which, something in the same manner as the pipes of a church organ, various tubes, which are in connection with a main pipe, rise up, and can be managed by the turning of a screw at the end of each table, so that they can supply either a current of hot or cold air, or be stopped altogether. The ventilation of buildings is still a difficulty, and although we would not like to hazard a positive opinion on slight experience, some fear



that, in spite of the endeavours made, the new room will be hot in summer and too cold in winter.

The arrangement of the various catalogues round in a circle is excellent, and they can now be consulted without the crowding and inconvenience which formerly took place.

In the old room there was a small square window to which all the reading-tickets were taken, and through which all the books had to be delivered to the room and returned; and although the gentleman who had for a long time kept his post there was remarkable for careful hours, some inconvenience might be experienced. In the new room, by a simple arrangement, the possibility of inconvenience has been lessened; for the circular space now devoted for the reception of tickets and the delivery of books is divided into compartments, which are lettered from A to D, E to G, &c.; and to such of these divisions the tickets and books of readers are to be taken as they correspond with their names.

It was often difficult in the old rooms for ladies, strangers to the place, to find suitable accommodation: in the new room, however, certain tables are marked, "for ladies only," in fact, great care has been taken and a strong feeling shown on the part of the managers of this portion of the British Museum to accommodate the public, and at the same time to provide for the increased numbers which as a matter of course will year after year consult the library.

#### THE BERN COMPETITION.

NOTWITHSTANDING the unsatisfactory conditions offered, twenty-three sets of designs for the proposed (R. C.) Church of St. Peter and St. Paul, at Bern, were sent in to the committee, six or seven of which came from foreign countries. They were publicly exhibited a short time. The *Ecclesiologist* says, the jury have given the first prize to the design bearing the motto "Petrus janitor cœli et Paulus doctor gentium"—in the Romanesque, or Transitional, style—by MM. E. Depertthes and H. Marchal, of Rheims. The second prize has been assigned to M. W. F. Tuggerin, of Soleure, for the design "Non est hoc aliud," &c. The third to M. J. U. Lendi, of Freiburg, for the design "Omne tulit punctum," &c. The fourth, a third gold medal, to Mr. Goldie, of Sheffield, for the design "Nisi Dominus." The following designs were classed as equals, and rewarded with silver medals:—"Timor Domini," by J. C. Boissonas, of Geneva; "Preis dem Hochsten," by Kasper Jeuch, of Baden (Argau); "In hoc signo," by T. Zeederleider of Bern; "Palman qui meruit," by J. L. Pedley, of Southampton; "Der glaube," by G. Mossdorf, of Lucerne.

#### THE MANCHESTER EXHIBITION.

THERE has been considerable improvement in the general arrangement of the Art Treasures contained in the Exhibition building during the last few weeks. In the Picture Galleries the numbering has been entirely re-arranged, and a new and more correct edition of the catalogue has been prepared, in which the paintings by Ancient Masters are numbered progressively from 1 to 1079; the Hertford Gallery from 1 to 44; Paintings by Modern Masters from 1 to 689; British Portrait Gallery from 1 to 337 (to be continued); Water Colours from 1 to 969; and pieces of Sculpture and Busts from 1 to 155. This enumeration gives a good idea of the extent of the collection of pictures; and when it is remembered that the *chefs-d'œuvre* of every age of art are included therein, the rich treat that a survey would afford to the lover of art may be imagined. A central group of sculpture has been placed in the transept, and the busts, figures, and groups have been fixed in good positions in the main building and in the picture galleries, affording an agreeable variety to the effect of the general coup d'œil of the interior. Additions are constantly being made in several departments, more especially in ancient furniture, bronzes, statues, and tapestries. The armour, arms, and warlike accoutrements, are particularly well arranged, and excite great interest. It is very interesting to follow some of the hard-handed mechanics, and hear the wondering remarks they make upon the splendid workmanship shown in the enrichments, embossing, and engraving of the ornamental suits of armour, and upon the mechanical provisions for protection, and for allowing free use of the limbs to the cased warrior of the olden time. The chronological note (as it is modestly called, more properly dissertation) on this subject by Mr. J. R. Planché, given in the catalogue, is well worthy of attentive reading. The furniture, bronzes, medallions, specimens of Palissy and Majolica ware, articles in glass

and tapestries known as the Sonlages Collection, are now distributed in good order in various parts of the building.

Some excellent specimens of wood carving by modern artists will be found under the galleries on each side of the organ; a sideboard of good workmanship and design, having figures emblematic of rural sports; a bedstead of elaborate design, adorned with fine carving, fit for a queen to sleep in, the work of Charles, of Warrington; some charming little bits of dead game by Wallis, of Louth; and a delicate and extraordinary piece of carving by Shaw, corn and poppies. A comparison of these, and the ancient carvings with which the Exhibition abounds, is not much to the disadvantage of the works of our own day.

The attendances last Saturday amounted to 9,702; on Whit-Monday to 9,514; and on Whit-Tuesday to 10,398. As the latter part of the week is the great annual holiday in Manchester, it is expected that the numbers will increase.

#### THE MODERN PICTURES IN THE MANCHESTER EXHIBITION.

SIR,—Apart from the rapid adulatory criticism with which our press at this moment teems, in reference to the modern school in the Art-Treasures Exhibition at Manchester, let us take a numerical comparison of its contents, and of their relative disposition.

It appears, then, from the catalogue, commencing with the more recent school in saloon E, that the Royal Academy supplies 243 of these treasures, whilst the great mass of artists—non-members, but supporters of that institution, whose numbers are, if I mistake not, computed at from 5,000 to 6,000—are represented by so small a quota as 142, of which 57 are placed above, or otherwise unfavourably.

"Oh, monstrous! one half-pennyworth of bread to all this sack." So packed and partial an affair is it, that one would suppose himself within the rooms of the Academy, were it not for the superior accommodation of velvet-cushioned seats over school-forms. And I could not but reflect that in this stronghold of free-trade such a close-borough system was an anomaly quite out of harmony with that liberal spirit which marks the generous "Cheerybles" of Manchester. But for this fresh eruption of the old sore, the Art-Treasures Exhibition claims our high admiration for the good taste and excellent judgment prevailing therein. All interested in art should see it. The light is admirable, and enables us, by comparison with the great of old, to study our deficiencies, painfully apparent in chalkiness, weakness, gauntness, and spottiness of the general effect.

It is doubtful, perhaps, how far the importance given to that fascinating branch, water-colour drawing, and its gaudy counterfeit, chromo-lithography, is likely to elevate art in this country.

AN ARTIST.

#### IMPROVEMENTS IN LONDON.

OBSERVING Alderman Cubitt's remarks on providing suitable lodging-houses for the poor, I would suggest, as one remedy, that all manufacturing trades, such as potteries, glass-houses, tallow-melters, bone-boilers, and varnish makers, and, in fact, all objectionable trades not actually required in London, should be removed at least twenty-five miles from the metropolis. This plan would scatter the working classes over a large space of country, and prevent the necessity of retreating to so many small houses for the poor in London, and it would allow of the worst portion of small dwellings to be cleared away altogether, and make room for the contemplated improvements, in forming new streets of a superior grade, on the same plan as in Paris. There is no more necessity for objectionable trades and manufactures to be carried on in this metropolis than there is for bricks being made and burnt in any of our West-end squares. It only requires the good sense of the inhabitants of this great city, and the resolution of Parliament, to eradicate at once all the nuisances from the heart of the town, and, at the same time, confer a lasting boon on the working classes,—by removing them into a more healthy atmosphere, instead of the confined courts and alleys they now occupy. If these said factories were removed from town to country, the workmen must follow and take all their families with them: what a relief this would be to London!

This plan, in my humble opinion, seems to be the most effectual way of hauling the subject, by removing the cause of the overcrowding, and thereby really assisting the working classes, and giving them

the means of enjoying good health. And, again, why should not the banks of the Thames (on both sides) be a pleasant promenade above Westminster-bridge, instead of having the disgusting appearance presented at Lambeth? What an exhibition of poverty, ruin, and wretchedness on one side, and on the other a costly palace,—the New Houses of Parliament. What inconsistency! Such is London; but ought such a state of things to be tolerated any longer?

Millions of money are squandered on war, and much of it wasted: let one quarter of it be spent in the general improvement of the banks of the Thames, and it would become at once one of the greatest ornaments of the metropolis. The authorities should know that there is much need of a row of plane trees at the edge of the footpath next the river, from Millbank-row to Vauxhall-bridge; and if the path was paved with flagstones it would make a very pleasant evening walk; and a few seats might be added.

R. M.

#### ARCHITECTS' CHARGES AS WITNESSES.

You appeal to your legal friends for information on the subject of the statement of your correspondent, Mr. James Edmeston, which appeared in your number of May 30. Your own observations are very correct, and I think Mr. Edmeston must be under a misapprehension as to what his "own solicitor" told him as to his charges.

The taking the account of dilapidations was a preliminary matter to qualify him to become a witness in the cause. The ordinary charge for this falls upon his employer, and cannot be brought against the opposite party. For attending as a witness on the subpoena for three days he is entitled, as against the opposite party, to a guinea a day,—that is, two guineas besides the guinea paid him with the subpoena. If he had attended a trial at a distance from his home, he would have been entitled to from 2*l.* 2*s.* to 3*l.* 3*s.* a day (besides travelling, but no other, expenses), at the discretion of the taxing-master. Although 1*l.* 1*s.* per day in a town cause may only be recoverable by a witness from an opposite party, I think his own employer, if Mr. Edmeston was his witness, should himself pay an extra guinea; at the least, I believe this is the practice. Many of your readers, who are architects, know that their employers do not look to the taxing-master's scale for their remuneration, but judge for themselves whether, though not recoverable from the opposite party, their services as witnesses are worth two, three, or five guineas a day. Where, however, an architect has been paid for preliminary services, it may not be unreasonable to take this into consideration. But I think, under any circumstances, two guineas a day for an architect attending a trial but reasonable, though, perhaps, not recoverable from the opposite party.

I have no doubt the party who subpoenaed Mr. Edmeston, whether the opposite party or his own employer, is liable to pay him two guineas, besides the guinea with the subpoena, for his three days' attendance in the Court of Exchequer, and he can sue him for it in the County Court.

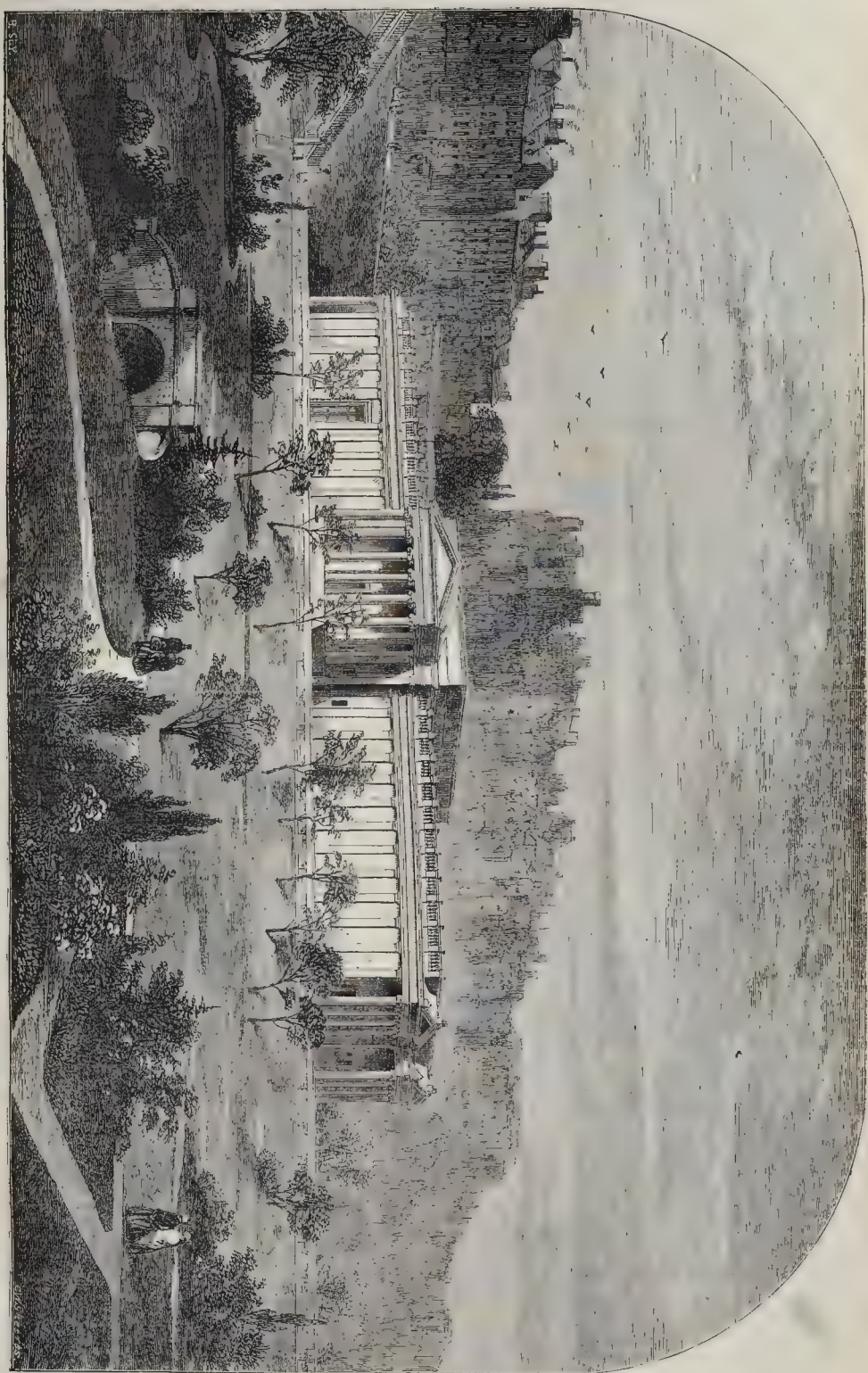
A LEGAL READER OF THE "BUILDER."

#### THE NATIONAL GALLERY, EDINBURGH.

In the valley which separates the old and new parts of Edinburgh, on the earthen mound thrown across it as a means of communication between the two, stand the Royal Institution—a Grecian Doric building of striking aspect—and the new Scottish National Gallery, both erected from the designs of the late Mr. Playfair, to whose skill and taste Edinburgh owes so much. The Royal Institution was completed in 1836. The National Gallery was finished externally in 1854, at which time we sought to obtain from the architect the means of properly illustrating the structure. Mr. Playfair, however, shrank from publicity, and declined to afford the requisite materials. Recently, through the kindness of Mr. J. A. Hamilton, we have been enabled to engrave a small view of the building from a photograph which, though it does not quite worthily set forth the building, shows its character and, to some extent, position. It is Grecian Ionic in style, and has a central mass, with a large hexastyle portico to the east and one to the west. On each side of this portico is a range of ante, carrying entablature and balustrade, and terminating on the face of each end of the building with two tetrastyle porticoes, with a recessed portico between the two.

The Castle and part of the old town form the background of our view.





THE NATIONAL GALLERY, EDINBURGH.—THE LATE MR. W. H. PLAYFAIR, ARCHT.



## OPENING OF THE CRUMLIN VIADUCT.

This extraordinary structure, probably the largest railway bridge in the world, has been formally opened. It has been raised for the purpose of extending the Newport, Abergavenny, and Hereford line to the Taff Vale, thus opening up the means of communication between the rich mineral districts of Monmouthshire and Glamorganshire. Its height is 200 feet. It is almost wholly constructed of iron: the piers, which rise above the valley beneath to the elevation already mentioned, present, in consequence of the material used, a singularly light and symmetrical appearance. The centre piers consist of an arrangement of 140 cast-iron columns, each 17 feet long by 12 inches in diameter, placed in tiers of fourteen columns each. The heads of the columns are retained in their positions by cast-iron girders, and the area of base is 60 feet by 30 feet, forming an irregular design tapering upwards 24 feet by 16, the whole being laterally and vertically strengthened by a complete system of cross tracing. It is difficult to convey an idea of the gigantic scale on which the whole design has been carried out; but it may assist the formation of an opinion relative to the strength of the piers if we state that there are no less than 540 wrought-iron ties in each. The top of each pier is surmounted by a triangular frame of cast iron, upon the apex of which the ends of the main girders are carried. The entire superstructure consists of 10 spaces of 150 feet each, which, with the approaches, make its length one-third of a mile. In each space there are four main girders, on the top of which a platform of 6-inch planking is bolted, for carrying the permanent way.

The entire work has been designed and carried out by Mr. T. W. Kennard, of London.

## PROVINCIAL NEWS.

**Winchester.**—The officers' new barracks are nearly completed. The plan is simple, the four floors which constitute the elevation being traversed through their whole length by corridors, from which open the entrances to the different rooms. The new building is of bright red brick, with stone dressings.

**Clifton.**—The old "Royal Hotel," at Clifton, has now been converted into the Clifton Subscription-rooms, by alterations and additions carried out on plans by Mr. J. H. Hirst, architect, at a cost of between 4,000l. and 5,000l. The ground-floor has been partly converted into dwellings and shops. The fronts are in the Venetian Italian style of architecture, and are about 25 feet in height. Each window is a bay forming three sides of a polygon, fitted up with plate-glass and glass cross bars. The carving of the stonework has been executed by Mr. Divall. A corridor, 10 feet in width, divides the shop premises from that portion of the building which has been appropriated to the purposes of the subscription-rooms. The flooring of the corridor is composed of inlaid tessellated and mosaic pavement, supplied from the works of the Patent Architectural Pottery Company, at Poole, Dorset. The principal staircase springs from the corridor, and leads by an easy flight to the public rooms, which comprise a drawing-room, reading-room, billiard-rooms, refreshment-room, &c. The contractors were, Mr. Thorne, mason; Mr. J. N. Harris, carpenter; Mr. Ashmead, smith; Mr. Allen, gasfitter; Messrs. Lewis and Sons, painters and plasterers; Mr. Williams, glazier.

**Plymouth.**—The corner-stone of a new Wesleyan Sunday-school was laid on Saturday last. The plan comprises on the upper floor a school-room, 75 feet by 38 feet, with sundry class, committee, and other rooms on the ground-floor, and with two dwelling-houses adjoining, for the use of the resident ministers connected with the Ebenezer Chapel, Saltash-street. Ten tenders were received, and the trustees have accepted that of Mr. Thomas Clift. Mr. John Foster is the architect. The elevation will be plain in its character; the walls limestone, hammer-dressed, with white fire-brick dressings, from the Morley Clay-works, Lee Moor, Devon.

**Worcester.**—The new waterworks are progressing at Pope Iron, on the Severn bank. The boiler-house is about to be roofed with iron by Mr. Rutter, of Birmingham. The machinery is from the Haigh Foundry, at Wigan. Two of the three filter-beds are laid, and the subsiding tanks are nearly completed. The bricks used in the works are blue and brown, from Tipton and Oldbury. An arboretum is contemplated in the neighbourhood of Worcester. Nearly 2,000l. have already been subscribed towards the object.

**Birmingham.**—The News-room, in Bennett's-hill, has been purchased, for the erection of a new County Court upon the site. The designs for the new building, which is expected to be commenced in about two months, have been supplied by Mr. Reeves, of London, architect.

**Liverpool.**—All Souls' Schools, Eaton-street, Vauxhall-road, were opened on 28th ult. They are attached

to All Souls' Church, in the new parish of Vauxhall, and have been built by public subscription. They will accommodate 550 children. The girls' school is above that for the boys. It is more than 24 yards long, and about one-third as broad, with drapery for the separation of classes, and facilities for the formation of a class-room. The infants' school is a separate building, about two-thirds the size of either of the others. It is lighted with plate-glass along the roof, and also by two windows, the children being accommodated in side galleries. The cost of the land, schools, and two residences for the master and mistress, was 3,700l. of which the Education Committee of the Privy Council contributed 1,453l. and the National Society 100l.

**Carlisle.**—The Laversdale new schools were opened on 25th ult. The school has been erected at a cost of about 580l. towards which Government contributes 284l.; Mr. Robert James, Mireside, land valued at 71l.; two-thirds of the cartage done gratuitously, viz. 650 cart-loads, valued at 56l.; sum raised already by contributions, 156l.—leaving a deficiency of about 13l. The contract for the building was taken by Mr. Robert Irving, of Newtown, Irthington. The building was designed by Mr. John Baly, architect, Brompton. It consists of a principal school-room, about 38 feet by 18 feet, estimated for sixty-three children; a class-room, about 18 feet square, for thirty-six children; and a master's residence, with six rooms, out-offices, &c.

## CHURCH-BUILDING NEWS.

**Pershore.**—The Chapel-of-Ease at Drake's Broughion, near Pershore, has just been completed, and consecrated. The design was by Mr. W. J. Hopkins, of Worcester. The chapel stands at the junction of two lanes, near the Worcester and Pershore turnpike-road. It consists of a simple oblong, with a small turret at the south-west angle, sustaining a belfry chamber and a wooden spire. The porch is also at the south-west. The chancel is divided from the body of the church by an ornamental tower, forming a flattened arch, supported by carved stone corbels. A geometric three-light window appears at the east end, and in the west two lancets and a rose window. The side windows are of two and three lights. The open timber roof is covered with blue and red Broseley tiles, with cross tiles on the ridge above the chancel, and ornamented with a foliated cross on the eastern gable. The porch is of timber, fitted in at the bottom with stone work. Limestone from the Wolverton quarries in the neighbourhood, with free-stone dressings, and lined with red and white bricks, form the materials of the walls. Neither plaster nor paint is used on the walls of the building, and the plainness of the masonry is relieved by an arrangement of various coloured bricks, forming ornamental designs, especially at the east end. Minton's encaustic tiles cover the chancel floor. The seats are merely benches, with 1½ inching backs. The church is warmed by an underground apparatus supplied by Messrs. Rimington and Co. of Skipton. Mr. Lacy, of Droitwich, was the contractor for the building, and also supplied the carpenter's work. Mr. Snow, of Droitwich, was the mason. The carvings were executed by Mr. Moyson, of Birmingham; painting and varnishing by Mr. Wells, of Worcester; and the ornamental iron-work by Mr. Watkins, of Lowesmoor. The cost of the building will be about 1,000l.

**Newcastle-under-Lyme.**—The foundation stone of a new Methodist Chapel, at Newcastle, was laid on Tuesday in week before last. It is to be erected on a site not far distant from the old chapel, and is intended to be capable of seating 900 or 1,000 persons. The total cost will be upwards of 3,000l. The architect is Mr. Simpson, of Leeds; the contractor, Mr. R. Chapman, of Newcastle.

**Westbury (Wills).**—The cemetery here was opened on the 12th May. There are two chapels and a lodge erected on the ground, the designs of which are of the character of the fourteenth century. The cemetery has been laid out by Mr. Smith, of Westbury Leigh. The architect was Mr. Edward G. Bruton, of Ox'ford; and the builder, Mr. Davis, of Frome.

**Cheltenham.**—The opening of St. Gregory's (Roman Catholic) Church, at Cheltenham, took place on the 26th ult. The church, which is situated in St. James's-square, near the Great-Western Railway Station, has been built under the superintendence of Mr. George Hensom, of Clifton, architect. It is in the Geometrical style, ascribed to the latter half of the thirteenth century. Its plan is cruciform, and it consists of a nave and aisles, with a porch into the western aisle, transept, chancel, lady chapel, sacristies, and organ chamber. The orientation of the church is at variance with ancient examples, the chancel being at the south end. A tower and spire, it is said, are hereafter to be erected on the site of the old chapel, which this adjoins, in order to complete the design.

**Bromsgrove.**—An effort for the restoration of the parish church of Bromsgrove has been commenced. At a meeting of the inhabitants recently held, a unanimous resolution was adopted to make an immediate and earnest effort to effect its complete restoration; and Mr. Scott has supplied a plan, and a general outline of the work required to be done, which will involve an outlay of 4,200l. Besides the complete restoration of the building, both within and without, as nearly as possible to its original design, especially as regards the mutilated windows on the north side, the work includes the opening out of the roofs of the nave and the chancel, the improvement of those of the aisles, the re-laying of the floors, and the entire re-pewing of the church in oak, by which a large addition of free sittings will be obtained for the use of the adult poor, and suitable accommodation be provided for the children of the Sunday schools. At a subsequent meeting Mr. Scott's plans were approved, and the committee empowered to carry the same into effect as speedily as possible. The subscriptions promised have exceeded expectations, although there still exists a deficiency of nearly 800l.

**Manchester.**—The Higher Broughton Congregational Church, Manchester, was opened on the 28th ult. It is in the Decorated style, cruciform on plan, with nave, aisles, transepts, and chancel. The nave is divided by iron columns, which are carried up to and support the roof. The chancel and communion-place are raised 18 inches, and laid with encaustic tiles. The pulpit and communion-rail are of the Ancaster stone, and the whole of the windows have margins of stained glass and ornamental pattern quarries. Mr. Thomas Oliver, jun. of Sunderland, was the architect.—Tenders have been received for sundry additions and alterations to, and for the entire completion of, the Catholic Apostolic Church, Streteford New-road, Manchester, from designs by Mr. E. Trevor Owen, architect. The principal or entrance front to Streteford-road will consist of new porches, with organ-chamber over; also, a new baptistery. The whole of the west end will be entirely re-erected and surmounted by a lofty and decorated bell-gable. The greater part of the interior will be re-arranged and re-fitted, which will include an organ-gallery; also, new stalls and other furniture to the chancel. The east and baptistery windows will be stained glass, and the floors paved with Minton's tiles.

The new altar-screen and bishop's throne in Manchester Cathedral, some particulars of which were lately given, are now completed. The stone screen is pierced with seven arches, filled with plate glass. It is in the Perpendicular style, of Caen stone. Its length across the choir is 25 feet; its height nearly 14 feet; measuring about 3 feet 8 inches to the sills of the glazed arches; so that persons passing behind it will not be seen by those within the choir, which is considerably higher in level than the neighbouring aisles, &c. The screen is supported by a moulded base course of Yorkshire stone. The carving has been executed by Mr. Williams, of Manchester. The bishop's throne stands on the site of the former temporary throne, at the end of the stalls on the south side of the choir. It is of carved oak. The throne is octagonal in shape, and consists of a base about 5 feet high, reading-desk, and a canopy, also octagonal, at a considerable altitude, carved, with pinnacles, &c. The base stands upon a plain double plinth. The style of the throne throughout is Late Pointed. The carving has been executed by Messrs. Banks and Co. of Manchester, and the joiner-work by Messrs. Halme and Heron, of Cneetham-hill.

**Ashton.**—The first stone of a new chapel for the Wesleyan New Connexion was laid on 23rd ult. at Holey-hill, a village about a mile and a half from Ashton, near Guide-bridge, with a population of about 1,200. The present chapel, built by Mr. John Whitaker, will be used as a school. The new one is to be built near it. It will be of Grecian architecture, 20½ yards long by 12½ yards wide, with a gallery two pews deep, and a class-room. The architect is Mr. Joseph Lindley, and the cost will be 1,400l.

**Doncaster.**—It has been decided to build a church at Doncaster for the spiritual instruction of the servants of the Great Northern Railway Company employed there. The edifice will cost about 4,000l. the funds for which, and for the endowment, have been provided by private subscription.

**Heslington (York).**—The laying of the foundation-stone for a new church at Heslington, near York, took place on the 28th ult. The Decorated style, according to the *York Herald*, has been adopted for this edifice, and it will possess a tower, with spire, and chancel. The size of the church inside will be 65 feet by 25 feet, the chancel being 21 feet by 16 feet. The seats will all be open, and accommodation will be provided for about 270 persons. The roof will be an open timber one, the inside fittings of oak, and the pulpit ornamental. The east and west windows will be composed of painted glass. The tower and spire will be 110 feet high, and the height of the church



outside to the apex of the roof will be about 46 feet, and inside 44 feet 6 inches. The tower is to be 17 feet square at the outside, and the walls 3 feet thick. The side walls of the church will be 2 feet 6 inches thick. The masonry is to be composed of Bradford wall stones, and the window tracery of Ancaster stone. The cost of the new church, which is named St. Paul's, will be about 3,000/. The architects who have been engaged on the work are Messrs. Atkinson, of York. Mr. Weatherley, of Bootham, is the builder, Mr. Bellerby the joiner, Mr. Hodgson the plumber and glazier, and Mr. Perfect the painter—all of York.

**Malton.**—The foundation-stone of the Norton Wesleyan Chapel was laid on 27th ult. The "architect and builder" is Mr. William Lovell. The new chapel is intended to be a Gothic building, 28 feet by 49 feet, to accommodate 380 persons.

**Dundee.**—Euclid-street Chapel has just been completed for the use of the Old Scotch Independent congregation, lately assembling in Barrack-street. The building is two stories in height, having public offices on the ground-floor, the chapel and retiring-room being on the upper floor. The main entrance is on the west side, by a wide corridor and staircase, the latter finished with a groined plaster ceiling. The style adopted throughout is the Early English Gothic. The chapel is seated for 150 persons. Mr. James Scott was the architect. The contractors were Messrs. Annan, Kidd and Son, M'Conachie, and Stewart.

#### THE CONSTRUCTION OF FLUES.

In a recent number the danger arising from the bad contrivance of flues is adverted to, in consequence of a fire having been caused by the ignition of soot at the bottom of a flue adjoining to and in connection with another fireplace then in use. To those who are acquainted with the origin of fires, it will be no fresh information to read that this cause is of constant occurrence. It often originates by the wittles being broken through by the machine at some bend, thus allowing the soot to fall into the neighbouring flue, which, if not used, has generally a wooden chimney-board placed in the opening in the room, particularly if the grate be not a register, and this board is often ignited. I have sometimes seen in a back room a cabinet or bookcase placed against the front of the chimney-breast, thus covering the opening. Of course, as long as there is no connection with an adjoining flue, and there be no pipe from a German or other stove carried into this flue, there is no particular danger. Your readers will, therefore, perceive that the Adelphi is not so peculiar in this point of bad construction as the paragraph would infer. The large openings of former days are now often lessened by the insertion of a register grate, and the spaces at the side or sides so badly bricked up as to form "pockets," which also accumulate soot at each time the chimney is swept. One day this is set on fire by a spark, and it may smoulder for two or three days before it is discovered, either from the smell, or by setting the skirting on fire.

In illustration of this subject, I am tempted to send a very interesting account, given in the volume, for 1815, of the "Transactions of the Society of Arts," &c. p. 181, wherein is stated that "the thanks of the society were voted to the Rev. Thomas Ridge, of Kincoie, near Lutterworth, for his method of preventing the necessity of sweeping chimneys." He observes,—"1st. That every recess in a chimney, whether parallel to the shaft of the chimney (as is often the case in large chimneys made smaller) if totally closed up at the bottom, or even at right angles to the chimney, is in a great measure filled with soot long before the chimney becomes foul.

2nd. In a house I formerly occupied, there was a flue from a study, which was connected with an elbow of perhaps eight feet into an old chimney, stopped up at the bottom; and whenever it was swept, the chimney-sweeper universally said, 'they need not get up the other chimney, for there was no soot in it,' or words to that effect. The reason had not occurred to me at that time, nor for a long time afterwards. Just before I left the house, the bottom of the chimney was accidentally opened, when many bushels of soot were found deposited in the bottom of the upright chimney, below the part where the elbow entered it.

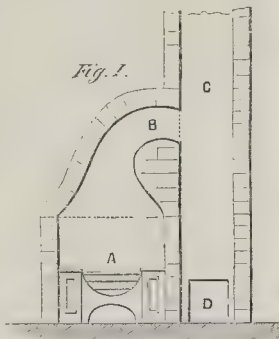
3rd. In visiting different manufactories, and other places where there are long flues, I have always learnt that they were continually bursting from the accumulation of soot. Considering the causes of which, together with other circumstances relative thereto, I was induced to make an experiment, by hanging n two coppers according to fig. 2, one of which was used perhaps four times every week, the other about twenty times in the year. The result in four or five months was, that in the first the whole body of soot was found in the receiver, and not half a pint of soot and dust together in the chimney. It

there remained for seven or eight months, when again the soot was found deposited in the receiver, and an equally small quantity of dust and soot in the chimney above. On opening the other at the end of nearly two years, when I left the house, the soot was found in the receiver, and none in the chimney.

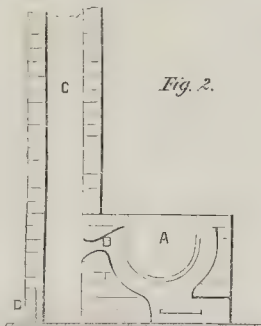
4th. In my present residence, the same experiment has been made for two years, with the same result as above."

He also relates that another person had confirmed the plan from experience, though the reason had not occurred to him before. After seven years' use a chimney was pulled down, when it was found that above the flue no soot adhered to it, and the greater part was scarcely coloured with it,—the whole of the soot having fallen to the bottom, and been taken out occasionally from a hole left for that purpose.

The cuts will explain the arrangement at once. Fig. 1, a fireplace; B, bend or elbow of the chimney;



C, the main flue, extending from the floor to the top of the house. The part below the bend is the receptacle for the soot, from whence it is taken out at a small door at D. This door should fit close, so as to totally exclude the air, for the utter exclusion of any draught of air through the bottom or sides of the receiver is the great principle. Fig. 2, A, a boiler



or copper: the other letters as above explained. It is recommended that the soot receptacle should be made in all cases rather wider than the part above the elbow, where the smoke enters, in order that the damp or cool air of the receptacle may have a greater effect upon the smoke as it passes. The elbow, or part between the fire and the main chimney, should occasionally be swept with a common house-broom.

WYATT PATWORTH.

#### DRAIN PIPES.

SURELY, Sir, your correspondent, E. O. S. must have been grievously haunted during a post-prandial nap, by the numerous ingenious devices which adorn your advertising pages. He appears to have entirely banished from his memory the sound old practical maxim, that prevention is better than cure. The first principles which regulate the employment of pipe drains—the essential condition of their existence is, that they should have sufficient fall, a good supply of water, and be properly trapped. If these conditions are fulfilled, there will be no need for any of the proposed suggestions; and if they are not, or cannot be, the case is not one for the employment of pipe drains.

With regard to the proposed modification, it would be very undesirable that it should be extensively used. The object of every experienced pipe-layer is

to construct a tube with the fewest possible joints in proportion to its length—every joint is an outlet for the liquid contents of the drain, and an inlet for the surrounding soil—while it is of the utmost importance wholly to retain the one, and wholly to exclude the other. Your correspondent E. O. S.'s suggestion would greatly increase the quantity of joint, and considerably tend to produce the very evil he seeks to remove. His form of pipe would, moreover, be very difficult to burn truly, and all but impossible to fit accurately.

#### A PIPE-LAYER OF 15 YEARS' STANDING.

\* \* We have received letters from Mr. W. Austin, Mr. Jennings, and other makers, setting forth the advantages of their system in respect of the point urged by E. O. S. but are forced to decline inserting them. Mr. Jennings denies the assertion of E. O. S. that by his plan sufficient space is not given to clean the drain properly.

#### THE CARVING AT ST. MICHAEL'S, CORNHILL.

MR. EDITOR.—A new doorway is in the course of completion to this church, by Mr. Gilbert Scott, the architect, as I am informed. Whether the style of the architecture and decoration, elegant as it is, be suitable to the character of the building, I do not wish to express an opinion; but I leave it to the ghost of Sir Christopher Wren to write to you, if his rest is disturbed by it. What I beg to call your attention to, is the semi-figure in a circular frame introduced over the doorway. It is intended to represent the Almighty, or our Saviour, I know not which. It is the usual Roman Catholic representation of a figure, with a nimbus, or glory, round the head, holding up the right hand,—the two forefingers raised, and the rest closed,—the act of blessing of the Roman Church.

Is this proper for a Protestant church? Although the citizens of London, not long since, in a spirit of toleration, effaced the inscription from the Monument, charging the Papists with the Great Fire, will they sanction this superstitious emblem at the entrance doorway of one of their parish churches, in the leading thoroughfare of their great city. JOHN KNOX.

#### THE DEVONSHIRE GEMS.

A CORRESPONDENT, with reference to the remarkable collection of gems from the collection of the Duke of Devonshire, which has been arranged and mounted as a *parure* of jewels by Mr. Hancock, of Bruton-street, asks us for some information concerning a fine amethyst intaglio, "which looks so like Assyrian." It represents the head of a king, with a curled beard and ringlets of hair, and has, indeed, a very Assyrian aspect. It appears, however, to be a specimen of Sassanian art, and to represent the Persian king Shapur I. There are two lines of inscription at the side of the head. Similar gems have been found in Bagdad. The Sassanian dynasty was founded A.D. 223, and lasted till the middle of the seventh century, when the Arabs became masters. The remains of the palaces at Diarbekr, and at Al Hadhr, are of Sassanian architecture. Mr. Ferguson, who gives a short chapter to Sassanian architecture in his "Handbook," says, "There can be very little doubt but that these halls are copies, or intended to be so, of the halls of the old Assyrian palaces."

Some of the other gems are of rare beauty and suffer, as it seems to us, by their present appropriation. They make an unparalleled *parure*, but could be better examined if kept singly in a cabinet.

#### CONCRETE.

ON reading Mr. George Rennie's paper on concrete, in the *Builder* of the 28th ult. it brought to my recollection several experiments made twenty years ago on the best material for forming that useful article. We are in the habit of taking the gravel just as we find it, by no means a good plan, but to make concrete a filling a trench is done very well; but to make concrete what it ought to be, all the water-worn stones should be broken into two or three pieces, so that they should not be too large, and have as many angles as possible. Now, at very little expense, when considering every builder has a portable engine, concrete might be properly done, and, at the same time, while the gravel is being put into a proper shape, the sand that comes off is of the sharpest and best kind. Indeed, gravel, properly prepared, would make by far the best sand; it would be free from salt, and much sharper than what is raised in the Thames; sand must only be the angles of the larger stones, and subject to being round themselves. To get fine cinery sharp is very easy, and the same process would make sand sharp also as well as dry. I have often wondered that gentlemen in the country, on making their new roads, do not adopt a better plan: instead of putting



the round stones on just as they find them, if they were to give them a crush into an angular form, with the fine stuff amongst them, they would have a road fit to walk upon in half the time. J. W.

#### ABERDEEN GRAMMAR SCHOOL COMPETITION.

At a meeting of the town council of Aberdeen on Monday, the 4th of May, the Lord Provost stated that the plans had been estimated by four respectable builders, and that it was found that one and all of the designs would considerably exceed the stipulated sum proposed to be laid out on the school buildings; but the council in committee having decided not to allow excess in price to determine the council to reject the plans, a remit was made to a sub-committee to report in which of the plans the accommodation and internal arrangements are best suited for the purpose in view, and they were empowered to consult three gentlemen of great experience on the question remitted. These gentlemen reported, and ultimately two designs were chosen, No. 1 being by Mr. George Smith, Edinburgh, premium 100*l.*; and No. 2, by Mr. Matthews, Aberdeen, premium 50*l.*

#### A SUGGESTION FOR STEREOGRAPHERS.

COULD not a stereoscope be easily so invented, and stereographs so arranged in it, as to display in succession different phases or aspects of one and the same edifice, or of one and the same statue, or (by help of stereographs prepared with several binocular cameras at once) even of one and the same living person? Let us suppose, for example, that the stereoscope is so made that it will receive four distinct stereographs, representing the four sides of a church, and united at right angles, the two crossed and mortised cards being stereographed on each side, and mounted on an axis at the crossing of the two cards. So long as one of the cards stands crossing the other at right angles to the line passing from eye to eye, it will not be visible at all while looking through the two lenses of the stereoscope; the other, which is displayed in a line parallel with the eyes, being alone visible, or rather the view depicted on it. By some slight ratchet movement and guide, the visible stereograph could then be rapidly turned round into the place of the invisible one, and that be made to display the next phase or aspect of the edifice or statue stereographed, and so on till the four sides of it were all made to appear in succession, in one and the same central position, as various aspects of one and the same solid reality. The effect would be very much like that of *walking round* the actual building or the statue in the solid, and in the same way all the peculiarities of form and attitude in persons stereographed might be seen in succession, one and the same attitude being realized from different points of view, so as to constitute a perfect likeness, in profile right and left, and in front face and back view, seen in succession, embodied as it were in one and the same central form and posture, as they simultaneously existed. The study of statues in this way would be particularly interesting, and so would that of buildings,—instructive indeed as well as interesting.

Since I suggested the possibility of applying the stereoscope to stereographs attached to or printed on the ordinary page of the *Builder* or other illustrated journals, I find that a very simple and cheap stereoscope now exists, whereby this can at once be done. The article in question consists of two magnifying lenses, simply set in a piece of flat wood, and used like a double eye-glass: it may be had at Fleming's, in Oxford-street, and other photographers,—cost, 9d. to 1*s.* It is even regarded as some respects superior to the boxed stereoscope. I am still hopeful of the possibility of dispensing with any stereoscope, however, by the almost instinctive arrangement of the eyes in the way indicated; and this my own experience still leads me to prefer to stereoscopic assistance. J. E. D.

#### RECENT AMERICAN PATENTS.\*

*For an Improvement in Elevators.* WM. PROVINES, Columbia, Missouri.—Claim: In combination with the scoops that cast their contents from them, the trigger and spring, for the purpose of regulating the point at which the scoops shall direct themselves of their load, so as to raise it higher, or cast it farther from the trench that is being cut.

*For an Improvement in Instruments for Measuring Boards.* JAMES JONES, Rochester, New York.—Claim: My means of so adapting the instrument, that it may be applied to the actual surface—whether of a board or other article—such means consisting of the outer and inner disks, combined with the two indices, one of said indices being intended to regu-

late the position of the friction roller on the inner disk, and the other for indicating the quantity measured.

*For an Improved Machine for Pressing Hollow Brick, or Building Blocks.* M. and J. H. BUCK, and F. A. CUSHMAN, Lebanon, New Hampshire.—Claim: Operating the plunger, by means of the peculiarly-constructed cam, in combination with toggle and cross-pin—when the same are constructed and arranged to operate in relation to each other.

*For an Improvement in Boxes for Pise-work Walls.* OTIS NEEDHAM, and WALES NEEDHAM, New Haven, Connecticut.—Claim: 1st. The construction of the box with the movable end-plates fitting to grooves in the side-plates, and with a roller at one end near the top, and another at the other end near the bottom, the one to run on the finished part of a course of work which is in progress, and the other on a finished course or on the foundation of the wall, to guide the box in a horizontal line, while the plates keep it from deviating laterally from a straight line. 2nd. The plate applied and operating in combination with the other parts of the box, to produce window-caps, mouldings, or projections.

*For Roofing Cement.* R. H. SMITH, Cincinnati, Ohio.—Claim: A cement formed by materials, whereby a cement may be made and applied to roofing and other purposes, without the aid of fire to render it fluid, as heretofore, and by which the offensive smell arising from the use of coal-tar, &c. is neutralized.

*For an Improved Mode of Incorporating Bituminous Liquids with Wet Earths for Cement.* WILLIS H. JOHNSON, Springfield, Illinois.—Claim: The combination of bituminous liquid and aqueous cements or mortars.

*For an Improved Mode of Lathing and Plastering.* JOHN G. VAUGHAN, Middleborough, Massachusetts, Assignor (by mediate transfer), to ISAAC M. SINGER, City of New York.—Claim: Plastering ceilings, or other surfaces, on lathing formed and secured, so as to leave interstices between them, with parallel sides oblique to the surface of the plastering when put on.

*For an Improvement in Staircases.* AUGUSTUS ELIABERS, Boston, Massachusetts.—Claim: Forming separate and independent "string pieces," between which the treads are held and gripped; the whole being secured by a screw bolt, that forms a part of, or is attached to, the baluster.

*For an Improvement in Bridges.* D. C. McCULLUM, Oswego, New York.—Claim: So combining the arch brace with the arch cord or beam, the top horizontal surface of the abutment or pier, and the lower cord or tie, by means of the iron shoe and tension rods, as that the thrust of the arch cord shall be thrown down upon the abutment, and any deflection in the lower cord be counteracted by an upward force at each end of the tension rods. Also, the method of lengthening or shortening the braces of a bridge truss or girder by which the truss may be elevated or depressed as required, by means of the yoke, the plate on the end of the brace, and the straining pieces with their nuts.

*For an Improved Machine for Cutting Veneers from the Log.* JOSEPH H. GOODSELL, Bridgeport, Connecticut.—Claim: The combination and arrangement of the reciprocating log-carrying slide, unsupported by trunnions or axles for its curvilinear ply, with the fixed guiding strips and stationary knife, when said guiding strips serve as the sole guide to give to the log carrier its curvilinear movement and simultaneous side action; whereby a steadier and more reliable united double bearing is given to the log in its movements, the log may be secured with facility to the carrier, and the driving power is communicated to the log in a more positive and direct manner for cutting with increased ease and precision thin veneers. Also, hinging the knife-holding frame to the main knife-feeding slide or frame, for the easy and double adjustability of the knife.

*For an Improved Method of Adjusting the Bits of Carpenters' Planes.* THOMAS D. WOBRAILL, Lowell, Massachusetts.—Claim: The arrangement of the rack and pinion, and the clamp, so that, while the pinion is placed within the clamp, the rear or dove-tailed sides of the rack bar shall serve as bearings for the clamp to work against.

*For an Improved Method of Adjusting the Size of the Mouth in Planes.* THOMAS J. TOLMAN, South Scituate, Massachusetts.—Claim: The application to the common plane, of the screw attachment and key through the same, thereby regulating the mouth, and greatly increasing its value.

*For an Improved Tubular Auger.* J. A. REYNOLDS, Elmira, New York.—Claim: The employment of an auger, whose shaft or stem shall form a screw when combined with a guiding tube surrounding the screw shaft of the auger, but not covering the head thereof. Also, the use of the guide tube, when combined with the sliding carriage—said carriage constructed with the slide.

#### A BUILDER'S CONTRACT OF THE FIFTEENTH CENTURY.

JESSE ALTAR IN ST. CUTHBERT'S CHURCH, WELLS.

THE church of St. Cuthbert, in Wells, is a large building chiefly of the Third Pointed period, and consists of a nave, aisles, chancel, and north and south transepts. A writer in *Notes and Queries* has given the following particulars in connection with an ancient contract for masonry—

"The western tower is known as one of the finest examples of tower architecture in Somersetshire. On each side of the chancel, and in each transept, are chantry chapels with separate dedications. In the year 1848, Mr. H. Powell, the then churchwarden, commenced some extensive restorations, and, in the course of his labours, made some most interesting discoveries. Against the eastern wall of each of the transeptal chapels were found reredos, brought to light on removing the plaster from the walls. Each reredos consisted of tiers of niches with canopies, &c. the sculptured ornaments of which were of the richest and most elegant designs. That in the south transept was apparently of a later date than the other, and not so elaborate in its details. It was intended to illustrate the genealogy of our Lord. At the base was the recumbent figure of Jesse, from whose body the stem could be traced, and no doubt ran through the whole series of statues which formerly stood in the niches above. The figure of Jesse was boldly and beautifully carved; but portions of this, as well as the ornamental canopies, &c. where they projected from the wall, had been chopped off, the figures broken into fragments, thrown into the niches, and then plastered over, so as to present an even surface,—an example of the mischiefs effected by the iconoclastic Vandals of the Reformation. Nothing was known of the history of these beautiful remains until a short time since, when the following curious document was found among the city records:—

*'The Model of ye Blessed Virgin's Alter Piece.'*

An Indenture made betwixt M<sup>r</sup> William Vowell, Master of y<sup>e</sup> Towne of Wells, William Stokelypath and Thomas Coorset of the one parte (Chosen Wardens for Our Lady's Alter), and John Stowell freemason of the other parte; For the makinge of the fronte of the Jesse at our Ladyes Alter at St. Cuthbert's Church in Welles aforesaid.

This Indenture made at Welles in the Shire of Somerset y<sup>e</sup> 25<sup>th</sup> daye of Feb<sup>r</sup> in y<sup>e</sup> year of our Lord 1470 and y<sup>e</sup> year of Kinge Heurye y<sup>e</sup> VI from y<sup>e</sup> beginninge 49 betwene M<sup>r</sup> William Vowell Master of y<sup>e</sup> City of Welles, William Stokelypath and Thomas Coorset, Wardens of our Ladyes Alter in the Church of St. Cuthbert in Welles foresaid on that one parte, and John Stowell of Welles foresaid freemason on that other parte. Witnesseth that the said John Stowell hath take to make and shall make or do to be made well sufficientlye and workmanly and pleymerly performe and within 16 Moneths next suing the date of this Indenture. All the Workmanship and Masonry Crafte of a Fronte Inyngye to y<sup>e</sup> Alter of our Ladye within y<sup>e</sup> Churche of St. Cuthbert in Welles foresaid in y<sup>e</sup> South Ile of the same; The which Fronte shall extend in breadth from the Keyes of the Arch beynge the North parte of the said Alter unto the Augill beynge in y<sup>e</sup> south side of the Alter foresaid. Also y<sup>e</sup> said Fronte shall arise in heighte from the groundinge of y<sup>e</sup> said Alter unto the Wall plate of y<sup>e</sup> yle foresaid or side littellake so as it maye mooste convenientlye be proportioned and mooste establish'd. In which Fronte shall stand three stagis of luncerye accordinge to y<sup>e</sup> genealogy of our Ladye wyth their bysnyngs, hovyds and tabernacles, well and workmanlye made and wroughte. There shall also arise from the bysnyngs of y<sup>e</sup> said Fronte bytwene Image and Image, Coorsets well and workmanlye wroughte trayles runnyng in the said Coorsets accordinge to the workes foresaid with two wyngis comyng oute from the said fronte after the bredth of the Alter, freight with luncerye such as can be thought by the Master and his brothers mooste accordinge to the story of y<sup>e</sup> said fronte. In y<sup>e</sup> lowest p<sup>te</sup> of y<sup>e</sup> whiche stagis shall be a Jesse; the which Jesse shall finallye runne from lunge to Image through all the foresaid fronte and coorsets as workmanlye as it can be wroughte. To all the whiche workes and bysnesses the foresaid John Stowell shall fynde or do finde all maner of stuffe, as well freeston flint and profitable as rough stone, lyme, sand, yron, lead and scaffold Tymer and all other stuffe necessary to the said workis to be had. For the which work-

\* Selected from the lists published in the *Journal of the Franklin Institute*, of Pen. sylvania.



manship and stuffe as it is above writ the foresaid John Stowell shall have and receive of the said Maister or Wardens or their deputies Forty poundes pay in good and lawful money of England; in suchwise and at such tymes as it sayth hereafter: First at the sealage of this Indenture, forty shillings and after that weekly as it may be understood that the worke goeth forth. All the residue to be paid at the end of the foresaid weekes, save always before that the said Maister and Wardens have remaynyngs in their hands till the foresaid worke be perfectly ended five poundes. For all the which the Covenants well and truly to be performed the said John Stowell bindeth himselfe his exors and his executors by obligation in Twenty poundes to be paid to y<sup>e</sup> said Mr. William Vowell or to his assignees so that the said John breake any of the Covenants foresaid. In witness whereof the said partyes foresaid have putt their seales &c."

#### AN AMERICAN INSTITUTE OF ARCHITECTS.

AN architect, writing from New York, says,—“We have just been founding an American Institute of Architects here: after failures in years gone by, the hour has arrived. All the leading architects have coincided: we have had meetings for organization. Trustees have been elected, funds subscribed, an opening address has been made by Mr. Upjohn, the Nestor of New York, and another by Mr. Walters, the architect of the Capitol.” At the next meeting—the first regular one for the transaction of business—Mr. Calvert Vaux was to read the paper of the evening.

#### TASTE OF THE WORKING MAN.

FOR some time past—and perhaps from time immemorial,—there seems to have prevailed an opinion with reference to the taste of the working classes in this country,—calling in question their capacity to appreciate the beautiful in works of art. Very much also is insisted upon the necessity of means being afforded them for the cultivation of this taste, and of extending among them a knowledge of art,—a remark, by the way, which may appropriately apply to the critics themselves. We are inclined to think that the working classes, taking them generally, are not destitute of a taste for the fine arts, or for any object whatever that has a power of charming the eye. That this sensibility to feel and perceive beauty when presented to them requires constant culture, and is susceptible of continual improvement, we readily admit. The minds of this, as of every other, class receive differently, and are differently acted upon by, impressions from external objects, and vary in this respect like the nature of various soils; and, as different soils must be prepared to receive seed sown into them, so it is with minds,—whatever is received there, whatever emotion of pleasure, whatever refining influence objects of art infuse into that receptacle, is according to the power of the recipient.

This cant about the deficiency of taste in the working classes is an injustice to them and to their peculiar character, which is favourable to the insight of the cause of beautiful effects rather than otherwise, they being practically acquainted with the principles and working of those very arts or handicrafts connected with art about which their deriders are so clamorous. No one who has mixed much with them but, with ordinary discernment, will soon discover that the elements of this taste, of which critics think they are the sole possessors, are possessed by them in a greater or less degree. Apart from considering the dexterity, genius, and ready contrivance they show in their work (take any department), they give evidence of it in their attempts at decorating, as far as their means will allow, their little household or garden (if happily they have one), taking great pleasure in the cultivation of flowers, and scattering around them ornaments, it may be of a cheap kind, yet all that they can afford, for the purpose of breathing something of an air of poetry, under difficulties, and having a recollection of fair Nature, whom they would fain see more frequently. This element, it is true, often smoulders from hard circumstances, till perhaps it dies away, and is thought by some never to have existed: it is often sacrificed to the demands of necessity. But, though this occurs, there is a field of exertion open; and we wish there was a stronger meeting and race of competitors. And the best vindication of the working man on this point, with some writers about his taste, is the desire manifested by them to visit the art-treasures exhibited with such suitable *éclat*. This stimulus they long wanted, and it is now added. Some examples of workmanship, in joinery, carving, for instance, pronounced by the best judges as no less monuments of industry than of talent for design and skill in execution, have been the work of some unknown, perhaps half-educated, working joiner, but he had taste, and determined to excel some production which

he saw, and so achieved fame. How many an obscure, hard-working man's talents have been brought forth by the spirit of rivalry which such an exhibition nurses, and the issue of his skilled hands and fine brain combined has been presented to the admiration of royalty, and the workman has been brought before the great of the land! All of us loving and interested in the arts, and those who pursue them with success, must hope that these exhibitions, the instruments of public and artistic education, will remain a permanent resource and encouragement. When we witness the multitudes of working men pressing eagerly to contemplate the treasures opened to them, and find them so much interested in and making such apt remarks on the contributions of gems, pictures, carving, and furniture, straining a point of business to behold another palace of art, or a newly completed magnificent dome in the metropolis; we think such men, the pioneers, may probably become the directors, of public taste.

FREDERICK LUSH.

#### Books Received.

*Biographies of Distinguished Scientific Men.* By FRANÇOIS ARAGO, Member of the Institute. Translated by Admiral W. H. Smyth; the Rev. BADEN POWELL; and ROBERT GRANT, Esq. London: Longman and Co. 1857.

THIS volume of the series of English translations of M. Arago's works consists of his own autobiography, and a selection of some of his memoirs of eminent scientific men, both Continental and British. The latter comprise the lives of Bailey, Herschel the elder, Laplace, Fourier, Carnot, Malus, Fiesnel, Thomas Young, and James Watt. The volume, therefore, is one of very general and miscellaneous interest. Supported, however, as we here find, by the translators themselves, we no longer refrain from expressing a regret, which we formerly felt, and which there is here no occasion to feel, that a man of Arago's celebrity should have betrayed occasional symptoms of a narrow-spirited jealousy, and an unfairness of judgment, where, by some slight twist of facts and circumstances, he could diminish the glory of a foreigner by exaggerating that of a fellow Frenchman. Such is the case in respect to Watt. In the midst of very magnanimous-looking eulogy, M. Arago actually so starts his countryman, Papin, of the “digestor,” as a coadjutor of Watt, or co-sharer with him in the merit of inventing the steam-engine, as to give to Papin a degree of prominence which is quite ridiculous. Papin laboured in the same field as Savery, in experiments on the effects of steam as a motive power, but, as Mr. Fairbairn remarks, in a note on this very subject, appended to the volume under notice, we have yet to learn that that power was ever applied by him to the organic parts of an engine, calculated to overcome the resistance of a load, such as the propulsion of machinery or the raising of water from mines. It is, indeed, “unbecoming in a great man and a great nation,” as Mr. Fairbairn adds, “to attempt to drag forward competitors where no competition exists,—where, in fact, the inventor stands alone as the benefactor of the human race.” We remember the pain with which we noted, in a previous volume of Arago's works, the laboured, if not very judicious, mixture of magnanimity and detraction with which Sir John Herschel was handled. The translators, in their very brief preface to the present volume, cannot refrain from alluding pointedly to the “doubt” which “could not but be felt” as to the “perfect fairness of Arago's judgment” in “pronouncing on the claims of distinguished individuals.” It is long since considerations such as these led the writer of the present notes to suspect that Arago was himself somewhat overrated as a man of first-rate ability; for no such man ever displays anything like a paltry jealousy of the greatness of others. As regards his own autobiography, too, there is a defect somewhat parallel, though of quite another description, but just as one might expect from a mere second-rate mind, such as his translators themselves almost admit, “an air of romance” in it, here and there, which “invests some of the adventures” with a “suspicion of occasional embellishment.” In relation to the history of science, this memoir gives some interesting particulars, which disclose to us much of the interior spirit of the Academy of Sciences, not always of a kind the most creditable to some of Arago's former contemporaries; but a far higher interest belongs to those eloquent memoirs or *diages* of eminent departed men of science who had attained the distinction of being members of the Academy.

#### VARIORUM.

A SECOND edition of Mr. Ruskin's “Notes on some of the principal Pictures exhibited in the rooms of the Royal Academy and the Society of Painters in Water-Colours,” has been issued by Smith and Elder

(Cornhill), but does not contain any additional matter. The Notes this year are pleasant and suggestive reading, chiefly remarkable for the praise of some heretofore found fault with, and the condemnation of the work of one hitherto his idol. “The pre-Raphaelite cause,” he says, “has been doubly betrayed, by the mistimed deliberation of one of its leaders, and the inefficient haste of another.”—A “Report to the Hon. the Commissioners of Sewers of the City of London, of the results of the Gaugings of the Sewers discharging within the limits of the City of London during the year 1855,” by Mr. Wm. Haywood, the engineer to the commission, has been made and printed. This is an elaborate piece of work, containing the result of some millions of figures in calculation and in registration of observations, proving, as we freely grant Mr. Haywood, that he has not had on his nightcap, even at times when it ought to have been comfortably drawn down over his no longer wakeful eyelids. We believe we did insinuate, in a scarcely serious way, that Mr. Haywood seemed to meditate putting some such report on the question of sewer ventilation in the City; but Jove himself occasionally “nods,” and our readers know very well that we have willingly, and oft, done justice to the exertions of the active engineer to the City Sewers Commission. It appears from his report, now under notice, that the total average discharge from the City sewers in dry weather, per diem (Sundays excepted), is 3,255,840 cubic feet, or 20,316,442 gallons, the maximum discharge being between 11 A.M. and 12 A.M. when its average is 349,750 cubic feet per minute; and the minimum between 2 A.M. and 3 A.M. when it is 1,033 cubic feet per minute. The most laborious portion of the report is in a tabular form.—We lately gave some account of a hopeful project for the formation of a college at Groll Castle, in the vale of Neath, South Wales. The scheme is now completely developed in a small volume published by Stanford, 6, Charing-cross, and Westerton, Knightsbridge, under the title of “The Principles of Collegiate Education discussed and elucidated, in a description of Groll College, a national institution adapted to the wants of the age.” The volume contains a map showing the central position of the college and some of the facilities afforded by such a position; and a lithographed view of Groll Castle and Neath. The programme has now the names of the Resident Executive Council appended to it, namely, William Bullock Webster, Lewis C. Herstlet, and Treclawny Saunders, and in an appendix is a list of local supporters, containing many highly influential names.—Mr. Liddell, of Hall, a gentleman who takes an active interest in ragged and industrial schools, has prepared “A Brief Account of the Hull Ragged and Industrial Schools,” which has been published by Messrs. Longman and Co. the profits, if any, for behoof of the school. This tract may be regarded as a treatise on such schools in general, and the best mode of conducting them. A very creditable new building has been erected at Hull for the Ragged and Industrial Schools there, from plans by Mr. Botterill, architect, Messrs. Hall and Sons, contractors. At this school there were ninety boys and seventy-six girls during the past year. The new building has dormitories, baths, clothing stores, industrial schools, master's residence, and various other appendages.—“A Slice of Bread and Butter cut by G. Cruikshank” (Tweedie, Strand, publisher) is a tract bearing on Ragged Schools and Reformatories, in which the author, in his own peculiar way, urges the necessity of going to the root of the evil which calls for such institutions, which root he regards as, above all else,—drink and dissipation amongst the parents of those for whom Ragged Schools and Reformatories are founded; and there is too much truth in what Mr. Cruikshank urges. Intoxicating liquors are the cause of nine-tenths of all the crime and all the starvation which darken the lot of this prosperous nation. They convert industry into idleness, sanity into madness, and goodnature into murderous malice, masking and transforming all who partake of them unduly into devils incarnate. The practical instigation to crimes excited by the contrast between the honest beggar-boy in rags at the Ragged School, and the convicted thief in smart costume at the Reformatory, is pointedly and graphically described by Mr. Cruikshank in the little tract before us: this is just a miniature copy of the sad picture presented by the contrasts between the workhouse and the prison for the adult: when will such national iniquities be abolished?—Amongst the more generally useful of the “books received” since our last, we may note “The English Bread-book for Domestic use; adapted to Families of every grade” (Longmans, publishers), by Eliza Acton, author of “Modern Cookery.” This little volume, besides practical receipts for many varieties of bread, contains notices of the present system of adulteration, and its consequences, and of improved baking processes and institutions established abroad, the best forms of oven for bread-baking, &c.



## Miscellaneous.

**"VENTILATION OF SEWERS."**—Your article, "Where there's a Will there's a Way," is confirmed, by admission, every day; but circumlocution and procrastination have become the leading features of mismanagement and neglect in every department. We become so inured to abuses and evils, that the talking over them is considered sufficient; the remedies submitted by thoughtful, inventive men, for curatives, are admitted to be good, but the habit is such, unfortunately, that "the lock is never put on the stable door until the horse is stolen." So it is and will be with our "sewage nuisance," daily getting worse and worse, as every man with a sense of smelling can have proof by getting near or passing over the gully grates or vents in mid streets of London and Westminster, the latter district being worse, by the flatness of the district sewer invert. Cholera and typhus are there engendered and bred, and when the burst out of disease arrives, all is then panic and confusion, and the chances are that the worst, most ineffective, and useless remedies are then badly applied. "Trapping by proper water-supply and attention to the gully grates," "introducing chemical (approved) fluid or other disinfectants into the sewers," "annihilating all cesspools," "destroying the accumulative gas of sewers by chemical agency, and burning off residue in furnaces and conducting shafts by exhaustion;" these are the remedies, but then they are the things desirable—and another "but" comes in the way: "they are protected by patent, and the howl is raised as against a mad dog, by those who had no brain to invent, but who would avail themselves of it surreptitiously, evade it, or, as they generally do, neglect to apply it until forced by clamour and the powerful voice of the Press." Pray follow on with loud and determined calls to action.—W. AUSTIN, C.E.

**PREPARATION OF LARCH FOR BUILDING.**—The wood manager in Scotland for Lord Seafield, Mr. Brown, of Grantown, states that trees of from seventy to eighty years old, in every respect sound, may be used for beams, lintels, joists, and cupples, with every certainty that a century will elapse ere they decay; but in order to ensure this, the trees must be felled between November and March, and immediately afterwards cut up and properly laid past to dry for at least twelve months. To the using of young larch, and to want of seasoning, are chiefly to be attributed the early decay of larch when employed for building purposes. The utility of generally employing pine timber, of home growth, for the purpose under notice, he adds, is very questionable; unless in the north, where there is pine timber to be had of quality equal, if not superior, to any imported. The utility of steeping in corrosive sublimate, &c. to prevent decay, he thinks, is very questionable. For the finer boarded parts of a building, as larch is much disposed to warp, and is somewhat difficult to work, foreign deal should be used.

**DEVELOPMENT OF THE MINERAL WEALTH OF IRELAND.**—It is well known that Ireland is particularly rich in valuable minerals, such as lead, iron, copper, and other metallic ores; and marble, slate, and other building materials. So unfortunate, however, has the state of the country possessed of such sources of wealth been till lately, that almost nothing has ever been done to realize these valuable products. But a very different future appears to be opening on Ireland. One of the signs of these happier times seems to be the starting of a new scheme for the working of the minerals in Mayo, and especially of lead, marble, and slate, by a company called "The West of Ireland Mining Company," who are issuing a prospectus on the subject. A lease has been granted by the Marquis of Sligo to Sir James Dombrain, on favourable terms, of a tract of land 200 square miles in area, and embracing all the mines and minerals in the western and south-western districts of Mayo, which is very favourably situated both as regards water power and sea frontage; and it is anticipated that a monopoly of the American trade in slates, marbles, &c. may soon be secured by the company, to whom this lease is to be made over. Among the directors we observe Mr. Dargan's name.

**THE LIVERPOOL TIMBER TRADE.**—In his monthly *Wood Circular*, of 29th ult. Mr. Edward Chaloner states that the arrivals from British America during the month, consist of three vessels, 2,209 tons, against one vessel, 534 tons, in the like month last year. Owing to the continued high rate of interest, and the near approach of the import season, there has been a marked falling off in the consumption of all wood from the Baltic and British America; and as the stocks held over are more than have been expected, a general decline in prices for the forthcoming imports may be reckoned on. At auction, two-thirds of the cargo just arrived per *Elizabeth Ann Bright*, from St. John, were sold at equal to an average of 87. 8s. for the cargo. Deal ends, 67. 2s. 6d.; fourth-quality, 77. 6s. Scantlings, 77. 10s. to 77. 12s. 6d.

**ARTIFICIAL PETRIFICATION OF WOOD.**—Count Dembinski's method of dissolving quartz by the aid of carbonate of soda, to facilitate the extraction of gold from the quartz, was found to be objectionable on account of the costliness of the process. This objection, it is said, has been removed by a subsequent discovery. A product of this process is silicic acid, an effective anti-rot application. Timber impregnated with it by means of hydraulic pressure is, in fact, artificially petrified, and is not only protected from dry-rot, but from the attacks of worms and ants, and is rendered susceptible of a polish equal to that of marble.

**Gas.**—A trial of Mr. Knapton's invention for lighting railway carriages with gas has been made between York and Milford Junction, when a first-class carriage of the Great Northern was lighted with gas: each of the three compartments had an argand burner, allowing newspapers to be read with ease. The apparatus is exceedingly simple. Underneath the flooring of the carriage is fixed the "dry gasometer," composed mostly of galvanised rubber. When inflated, it contains 75 cubic feet of gas, which lighted three argand burners for rather more than eight hours, thus affording ample time to proceed from York to the metropolis, without any want of gas. A carriage with three gas lights, travelling from York to London, cost, it is said, a fraction under 21d. whilst oil would be consumed, amounting to 1s. 7½d. Some railway companies have given Mr. Knapton orders for his apparatus. Mr. J. T. Thompson, of Newry, has also patented a method of lighting railway carriages with gas, which is said to have proved successful on several trials. During the winter of 1856, the Galena and Chicago Railway (U.S.) had some carriages fitted with India-rubber gasholders under each carriage, invented by Messrs. Hill and Demarest, Rochester, New York, which led Mr. Thompson to endeavour to introduce a system he considered would be practicable on English railways. The gasometer is made of thin wrought-iron plates, merely requiring sufficient water to form an hydraulic packing, 1 inch in breadth, round the gasometer. Mr. Thompson's endeavour is to have but one gasometer to each train.—The *Forbes Gazette* states that, in consequence of a waste of gas arising from the smallness of their works, the Forbes Gas Company have resolved to raise the price of their gas from 9s. to 12s., although the works must be enlarged. The immediate extension of the works, adds the journal named, would have enabled the directors, while manufacturing nearly double the present quantity of gas, with about the same outlay for management, and with the saving from waste, to have reduced the price instead of raising it, whereas the raising of the price will diminish the consumption, and lower the income. Perhaps the desire of the avaricious directors is to reduce the consumption till the present works be no longer too small, so that they may save the outlay necessary to enlarge the works! This is but too likely to be the result, whatever be the desire of the directors.

**NITROGEN IN STEEL.**—At the meeting of the Society of Arts on 27th ult. Mr. Fairbairn, F.R.S. in the chair, the paper read was "On some Combinations and Phenomena that occur among the Elements engaged in the Manufacture of Iron, and in the conversion of Iron into Steel," by Mr. Christopher Binks. The author began by remarking that the generally received theory of the formation and composition of steel was not satisfactory. The very old practice of using ferrocyanide of potassium as an agent of conversion was worth consideration. This compound contained nitrogen and potassium as well as carbon. He then proceeded to give the details of a series of experiments made by exposing commercial malleable iron to the action of various substances at a high temperature, and remarked that as far as those trials extended, there had always been a co-operation of both carbon and nitrogen whenever steel was produced, though it still remained to be determined whether this was absolutely necessary to its formation. It was also remarkable that various nitrogenous matters, such as horn and leather shavings, animal charcoal, and other substances, were commonly used, either in the manufacture or in the tempering of steel. Analyses made by himself proved that the best kinds of steel contained about one-fifth per cent. of nitrogen. In course of his remarks allusion was made to the fact that in the formation of the celebrated East-Indian steel, called Wootz, highly azotized or nitrogenized vegetable substances were used. At the close Mr. Binks acknowledged the deep obligations the iron world owed to Mr. Bessemer, who it merely for the practical development of the vivid re-action of atmospheric air and molten iron, at same time expressing his contempt for the hypercriticisms directed against Mr. Bessemer's exertions. A discussion ensued, in which Messrs. D. Mushet, F. A. Abel, T. M. Gladstone, F. Braithwaite, C. D. Archbold, R. Fletcher, the chairman, and others took part.

**THE SEWERS.**—In your obliging notice of my recent publication, "Facts and Fallacies of the Sewerage System of London," you conclude your observations by saying, "Mr. Rogers's panacea is peat charcoal." Pardon me, if I say this is a misconception. My proposition is, "that a metal pipe be laid through the sewers, into which all the water-closets shall discharge." If this were done, "peat charcoal" would not be an actual essential,—although now admitted to be the best deodorant: there are others which would answer the purpose, because the matter in the pipes would be but slightly decomposed, being protected from atmospheric action, and when discharged into the filtering chamber at the sewer mouth, other means than "peat charcoal" might be used to effect deodorization to a sufficient extent,—if there be any well-founded objection shown to its use. My proposed system is, in fact, the separation of excretory matter from the surface and culinary water, thereby preventing the accumulation in the sewers of that which no quantity of water can wash out of them, at the same time permitting the unchecked discharge of such matter at all times of tide, inasmuch as that the influx of water into the sewers would not affect the closed pipes, and stoppage in them would be immediately remedied by the action of "vacuum." You will, I am sure, do me the justice to insert this, as your observation alluded to might be read in a sense which I cannot believe was intended.—JASPER W. ROGERS.

**THE FIRST CRYSTAL PALACE FLOWER SHOW.**—The flower show at Sydenham was held on Saturday, 30th ult. and the result was more than ordinarily satisfactory, the number of competitors being large, and the display of flowers more magnificent than on former occasions. Azaleas, roses, geraniums, heaths, calceolarias, cactuses, and fuchsias, all in their most delicate and most gorgeous hues,—the varied and graceful ferns, and a collection of orchids,—not forgetting that extraordinary product of nature, *ulgo*, the pitcher plant,—contributed much to the beauty of the exhibition. The whole system of water-works was brought into use for the first time this season, but unfortunately the two great essentials to their perfectness, still air and sunshine, were wanting.

**COMMON LODGING-HOUSES.**—From a report addressed to the Home-office by Captain Harris, the Assistant-Commissioner of the Metropolitan Police, it appears that the Act for the well ordering of common lodging-houses has now been in operation since the year 1851, and has been attended by most beneficial results. The houses are much improved and daily improving: the keepers are of a better class; and the accommodation provided for the poor, without being dearer, is, in all respects, of a higher standard. Cases are adduced to illustrate the nature and extent of the evils arising in houses not controlled by law, and at the close of the report there are a number of letters from medical officers of health and others, urging the advantage of applying such an Act to single apartments let separately, and occupied by the poor. Under the present Act, 14,570 keepers have been served with "notices to register," and 6,892 of these houses have been surveyed and measured to accommodate 91,106 persons; 2,355 houses have been "permanently" registered, and are used as common lodging-houses, wholly or in part; 6,275 houses, unfit for registration, have been given up; 8,897 casual houses are under strict supervision. "The number of model lodging-houses is 104, accommodating 959 families, and 582 single persons. We may return shortly to the subject of this very interesting report.

**MUSIC.**—"Operatic Proverbs."—Mr. Val. Morris, favourably known both as a composer and executant, has written and composed for Mr. and Mrs. Henri Drayton a drawing-room opera, or, as he calls it, "A Proverb" for two performers only, which is exceedingly clever, and should increase his reputation greatly. Two or three of the airs ought to be very popular: for example, the first romance in the second part, "There is a charm," sung by Mr. Drayton. Mrs. Drayton acts with much spirit and intelligence.

**FINCH ESCAPES.**—Drive a strong staple into the upper part of every window-frame, either in one or every floor of the house: provide two blocks, with two or three pulleys in each. Now put a rope through each pulley, of a length sufficient to reach the ground from the top of the window. Provide also a strong bag, or sack, of about 4 feet deep and 18 inches wide, with a wooden bottom, and a few hoops to keep the sack open. When an unhappy occasion requires the use of these, let the hoop of the upper block be hung in the staple; then, the person or persons must stand in the wooden bottom, draw the sack up about them, and hang the string of the sack on the hook of the under block, when any one person may, with the greatest ease and safety, let another down into the street; and drawing up the sack again, may, in like manner, let down a whole family,—women, children, sick, old, and infirm; and, at last, lower himself down by holding the same open in his hands.

J. BRUCE NEIL.



"COZENS TESTIMONIAL."—The "Cozens testimonial," consisting of a service of plate, will be presented to that gentleman, as founder of the Builders' Benevolent Institution, at the London Tavern, on Tuesday, the 9th inst.; on which occasion Mr. Alderman Wm. Lawrence will preside, supported by Mr. Alderman Wm. Cubitt, M.P. and other gentlemen; and the subscribers will afterwards dine together.

SOCIETY OF FEMALE ARTISTS.—A number of ladies have formed themselves into a society for the exhibition of their productions, and have sent 858 works of art to 315, Oxford-street, where they are now on view. What has led to this step we have not heard, or how the movement originated. The start might have been better managed.

ALUMINIUM.—In the columns of a scientific journal, wherein unmitigated ridicule was recently cast upon those who have been hopeful as to the future uses of this somewhat anomalous metal, we now find the tables turned, and a new and hopeful spirit manifesting itself, which vies with anything we have ever said on the subject, as will appear from the following extract:—"We learn that the preparation of this metal, according to the system proposed by Dr. H. Rose, a celebrated German chemist, in 1855, has now become an important manufacture, and our informant remarks that this novel branch of industry, which owes its development entirely to France, is worthy of a position among the most interesting discoveries of modern times. This metal, which has hitherto been so extremely scarce, is said to have been made up into articles the lightness of which astonishes those most difficult to be astonished."

The works have been pursued almost without interruption at Amfreville, and it is said that difficulties no longer exist. Notwithstanding the high price of sodium, aluminium is delivered from Amfreville at a price which will admit of its being applied in a great number of instances. The price of aluminium would, of course, be reduced in proportion as improvements are made which will reduce the cost of sodium, the manufacture of one being subservient to the other. Then the manufacture of sodium is no longer dependant upon circumstances requiring the study of chemists, but is an industry which time will more fully develop, and at Amfreville slow, but sure, progress is being made in perfecting the manufacture."

FALL OF ARCH, SHORDON-COURT.—Some incorrect statements of this accident having appeared, the architect, Mr. Alexander Milne writes,—"It was a segment arch: the span was between 18 feet and 19 feet, and the rise from the springing to the soffit from 4 feet 6 inches to 5 feet. One of the abutments, above 3 feet thick, consisted of the main wall of the house, which rose about 35 feet above the springer. The other was a new wall, 3 feet thick, the back side of which rested against the natural soil. Neither of these, it should be added, gave way, resting, as they did, not on any weak, imperfect, or "old" foundation, but on solid rock. The facts of the case were these:—The arch was keyed in on the 23rd, and on the 25th the centre was slackened for three hours before striking, the process of which was nearly completed, when, without giving any kind of warning, the arch fell. There is no question as to either materials or workmanship: both were of the best quality. The accident was caused by the removal of the centre in too short a time after the keying-in of the arch, sufficient allowance not having been made for the moist nature of the ground poured on a few hours previously, and for the rain which had just before fallen in torrents, so as to cause the green mortar to become almost liquid."

ARCHITECTURAL CONGRESS AT LINCOLN.—As notified by us on the 23rd ult. the congress of various provincial architectural societies was held at Lincoln on the 25th and subsequent days. The meetings were held in the city Assembly-rooms, the walls of which were covered with drawings, photographs, &c. The Rev. G. A. Poole read his paper on "The Fabric of Lincoln Cathedral." On the second day of the congress nearly fifty of the congressionists made an excursion, as arranged, to Cleeby, Somerton Castle, Navenby, Wellingore, Welbourne, Temple Bruer, &c. and in the evening there was a banquet in the Corn Exchange, Lincoln, the Bishop in the chair; and a meeting in the Assembly-rooms, when several papers were read. The Mayor of Lincoln closed the congress with a banquet on the following day.

ENLARGEMENT OF GEORGE WATSON'S HOSPITAL, EDINBURGH.—Mr. Lessels, the architect of John Knox's Church and other buildings at Edinburgh, has prepared plans for the improvement, alteration, and enlargement of George Watson's Hospital, an extensive educational establishment in the suburbs of the city. Large additions are to be made, and an extended and more liberal system of education adopted. The works, which comprise two new wings, extending southward to the meadows, are to be at once proceeded with.

EARL DE GREY'S CONVERSAZIONE.—On Friday, the 29th ult. Earl de Grey received the members of the Royal Institute of British Architects at his house in St. James's-square, and invited a large number of persons eminent in art, science, and literature, including many ladies to meet them. Pictures, drawings, and books, afforded matter for conversation, and the whole evening was a theme for praise.

THE DISCOVERER OF THE COLLODION PHOTOGRAPHIC PROCESS.—Her Majesty the Queen, having been informed that Mr. Scott Archer, the discoverer of the application of collodion to photography (a process which has superseded all others), had died, leaving a young family unprovided for, has been pleased to head a subscription by a gift of twenty guineas. The Photographic Society of London have followed with a grant of fifty pounds, and from the general estimation in which Mr. Archer's discovery is held, a very handsome testimonial is expected to be raised. The committee-room is at 236, Regent-street, and Sir William Newton, R.A. has kindly undertaken the office of treasurer.

JOINERS' MOVEMENT AT HALIFAX.—A large meeting of house and ship joiners was held at Halifax on 25th March last, when it was resolved to solicit from their employers a rise of wages, from 7s. 6d. to 8s. 6d. a day currency, and a promise on their part not to employ any one incapable of earning 6s. 6d. a day as the lowest rate of wages, to run from 1st May next to 1st November, and at the same rate per hour during the ensuing winter. A committee of thirteen of those present was then appointed to carry out the resolutions so come to.

## [ADVERTISEMENT.]

TO THE EDITOR OF THE "BUILDER."

June 2nd, 1857.

Sir,—In the last number of the "Builder," your correspondent E. O. S. has the following paragraph:—"Jennings' plan is a great improvement, as you can remove the upper part of the connexion to examine the drain, but there is not space to clean it out properly."

As the latter part of this statement is incorrect, I trust you will allow me to remove the impression entertained by E. O. S., and that which it may have given rise to in the minds of your readers.

Before determining the length of the chair and saddle-pieces ("not being restricted by my patent"), every contingency was imagined, opinions were taken, and experiments tried, as to the introduction of such an apparatus as would be likely to be used in cases of stoppage.

With every respect for the opinion of your correspondent, I think "single junctions and half-pipes" might be forgotten, and a "mark on the pavement or wall" might disappear; but a line of my pipes, without record of any kind, will admit of examination every two feet, if necessary, when the present readers of the *Builder* shall have passed away.

I claim other, and greater advantages than that of "Examination," but as these more properly belong to your advertising columns, I respectfully refer your readers to them.

And sm, Sir, your obedient Servant,

GEORGE JENNINGS.

## [ADVERTISEMENT.]

TO THE EDITOR OF THE "BUILDER."

86, Regent-street, June 2, 1857.

MESSRS. CLARK AND SON,

GENTLEMEN,—In reply to your inquiry as to my opinion of your shutters and work, I beg to say, that the brass front, &c. you put in for me, I think, is equal in finish, and, indeed, altogether such as is not to be excelled by any other in London; it wears well, and I think the colour of the brass is excellent. As to the shutters, it is now upwards of seven years since they commenced work: I believe, for repairs, a few shillings will cover all charge, except a small annual one for oiling. They do and have worked well during all that time, and no accident has occurred to them; and I believe them to be in perfectly sound condition now.

I beg to remain, yours obediently,

JAMES MLDWIN.

## TENDERS

For the erection of a rectory-house at Chilton-Cantelo, near Yeovil, Somerset. Mr. Thomas Hellany, architect. Quantities supplied by Mr. W. W. Gwyther:—

Gravel	£3,808 0 0
Loam, Brothers	3,570 0 0
Mansfield and Son	3,469 0 0

For repairs and additions to six houses, Rushey-green, Lewisham, for Mr. J. F. Martin. Mr. J. Liddard, architect. Quantities supplied:—

Putnam	£1,387 0 0
Todd	1,549 0 0
Piper	1,343 0 0
Coleman	1,138 0 0
Matthews	1,137 0 0

For finishing five houses at St. George's-place, Knightsbridge. Mr. F. E. Beaton, architect. Quantities supplied by W. R. Gritten:—

Brass	£13,090 0 0
Piper	12,670 0 0
Casson	11,733 0 0
Loam, Brothers	11,380 0 0
Gregg	11,277 0 0
Lawrence	10,840 0 0
Wilson (accepted)	10,745 0 0
Downs	10,653 0 0

For a new warehouse in Aldermanbury, for Mr. J. Duncan. Mr. Charles Laws, architect. Quantities supplied:—

Jay	£4,143 0 0
Butlers	3,095 10 0
Brown	3,957 0 0
Asby and Son	3,940 0 0
Smith	3,760 0 0
Perry	3,687 0 0
Glenn	3,680 0 0

For the erection of offices, No. 70, Great Tower-street, City, for Messrs. T. and D. Henry. Messrs. John Young and Son, architects. Quantities supplied by Mr. Charles J. Shoppee:—

Nicholson	£3,520 0 0
Asby and Horner	3,416 0 0
Asby and Son	3,343 0 0
Browne and Robinson	3,300 0 0
Little and Son	3,279 0 0
Scott	3,276 0 0
Piper and Son	3,232 0 0
Hobbs	2,745 0 0

For the erection of a new Congregational Chapel, Morpeth-street, Mile-end. Mr. Jas. H. Fox, architect:—

Stevens	£2,076 0 0
Munday and Son	2,060 0 0
Rivett	2,063 0 0
Single	1,980 0 0
Wood and Sons	1,970 0 0
Hall and Son	1,960 0 0
Wilson	1,939 0 0
Putman and Fotheringham	1,890 0 0
Tarrant	1,889 0 0
Hocken	1,868 0 0
Rowe	1,803 0 0
Ennor	1,795 0 0
Trotter and Sons	1,787 0 0
Hill	1,776 0 0
Mortier	1,760 0 0
Bird	1,698 0 0
Smith	1,690 0 0
Ring and Stanger	1,662 0 0
Turner and Sons	1,650 18 0
Cleaver	1,605 0 0
White (accepted)	1,200 0 0

## TO CORRESPONDENTS.

C.V. (make your own selection. Send five or six of the views and plans. Good wishes)—An Old Subscriber—Competitor—F. D. G. J. E. F. B.—G. W. C. J. R.—A Benedict (the cause of the smoking is evident enough. The admission of air to the apartment by a ventilator or pipe, would probably cure it).—An Old Subscriber (wood hangings, window hangings, &c. should be measured by the net width, not by girth)—W. A. (second letter is an advertisement.—O. H. J. J. O. (there are good appointments to be had, but much interest is needed.) J. P. view of schools is in engineer's hands. No. 131.—T. F. T. (declined with thanks).—S. F. T. (ditto).—J. F. O. J. R. B. G. O. B. N. No. 128.—A Competitor (too wrong do not make one right).—R. (Rome was not built).—L. S. O. J. No. 88.—X. H. H. (in the Hall, or Hall 7).—Y. W. A.—E. F. P.—Palmyra (the author of No. 37, denies the correctness of the description of his plan given by R. L. O. and says it is "the result of a life of study").—H. M.—O. B. (tower is now carried to its full height; height has already been given in our paper).—X.

"Books and Addresses."—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and not to the Publisher.

## ADVERTISEMENTS.

THE FREEMASONS' MAGAZINE and MASONIC MIRROR for JUNE, 1857, is now ready. Price 1s.

I. MASONIC REPORTING.—WHO'S WHO?  
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THE MASONIC MIRROR.  
Grand Lodge—Royal Freemasons' Girls' School.—Royal Masonic Institution for Boys.—Royal Brompton Institution.—The London Lod of Provincial Lodges.—Southern Ireland.—The G. Union.—Royal Arch.—London and Provincial Chapters.—Mark Masonry.—Anglican Templar.—Summary of News for May.—Notices and Answers to Correspondents, &c.

LONDON: HENRY GEO. WARREN, 2, Red Lion-court, Fleet-street; and GEO. ROUTLEDGE and CO. Farringdon-street.

THE ENGINEER of Friday, 5th June,

contains Fairbairn and Newton's Waste Silk Dressing Machinery, Biehoffer's Lamp Shades, Ermen's Machinery for Finishing Linn, Struther's Mode of Transmitting Power, Macdonald and Whitehead's Mode of Damming Paper, Fenton's Railway Signals, Allan's Permanent Way, Todd's Hot-air Loom, Berrys's Pump, American Machine for Making Wrought Iron Railway Chairs, all illustrated. Original Articles on the "Lip and Line" "Jury," the English Rifle Factory, Kingston Museum, Steam Locomotion on Common Roads, Penal Servitude, &c. Parliamentary and Law Intelligence, Report of trials of Royalty's Transition Engine, Machine Made Locomotives, and Kept, Conclusion of Mr. Birk's Paper on Iron and Steel, with Discussion; the President's Address to the Institution of Civil Engineers of Ireland; Professor Kanny's Paper on Certain Peculiarities of Climate during part of the Permian Epoch, and Numerous Miscellaneous Articles. Index Journal; Timber and Metal Markets; Trades Birmingham, Wolverhampton, and other Districts; Notes from the Eastern Counties; and all the Engineering News of the Week. 24 pages, Price 6d.; Stamped, 7d. Vol. I. price 18s.; Vol. II. price 18s. may now be had ready bound.—BLACK & WHITE, Publishers, 301, Strand.



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# The Builder.

VOL. XV.—No. 749.

**A**FTER seven sittings, the jury empaneled to inquire as to the deaths of the six persons who unfortunately lost their lives through the falling of the houses Nos. 146, 147, and 148, Tottenham-court-road, brought in the following verdict:—

"That the deaths of Frederick Bing, Ann Driscoll, John Garnett, Richard Turner, James Kevill, and Joseph Taylor, were caused by the falling of the houses Nos. 146, 147, and 148, Tottenham-court-road."

"That cutting the holes in the wall of 147 and 148 was the immediate cause of the accident, the party-wall of 146 and 147 being very indifferent, requiring more than ordinary caution, which in this case was not observed."

"That the cutting away the party-wall between 147 and 148 was done in an unskilful and improper manner."

"That the jury cannot separate without expressing their strong condemnation of the present conflicting state of the law as to the district and police surveyors, whose duties appear to be quite independent, and even antagonistic; and the jury sincerely hope that an immediate alteration will be made in the Building Act as at present constituted."

The last witness examined was Mr. Marsh Nelson, who had surveyed the premises, by direction of the coroner, and who read a lengthened report on the cause of the disaster, with observations suggested by it. First describing the circumstances under which the alterations were being made, he said the front wall of Mr. Maples's house was in a most unsafe condition, cracked and split in the middle by the front casing having parted from the backing, and that the materials (for the most part) of which it was built were of the worst description. The north party wall was fractured and bulged, and the chimney-shafts overhanging. The party-wall on the south side was not fractured in the basement story, but the materials of which it was composed were equally bad; further, that the new brickwork in the parts he saw where the work had been made good was also of a most inferior kind. Old bricks had been used without being properly bonded, and the cements did not possess the adhesive qualities of common mortar.

"The builders," he remarked, "in explanation, mentioned the names of well-known manufacturers and merchants by whom the cements were supplied, and it is much to be regretted that respectable houses will countenance the sale of such rubbish under the name of cement."

The work that was being done he considered very ill advised, and he came to the conclusion that the immediate cause of the accident was the cutting of the front hole in the party-wall between Mr. Hunter's and Mr. Maples's houses. The remainder of the report we give in the witness's own words, as printed in the daily papers:—

"The jury case," he continued, "is to be ascertained, I think, from the evidence of the district surveyor. He states that no detailed survey was made before the alterations; the walls were not examined either in the basement story or in the roof. Now, had the district surveyor considered it part of his duty to make a proper survey in the first instance, the result would have been that both the party and front walls would have been condemned. The party-wall of Mr. Maples's house was absolutely fractured (not an ordinary settlement) and broke in the basement story about 6 feet from the front under the opening, that was increased in height, and it had bulged at the back under the part where the chimney breasts were cut away."

On the roof the front wall of the adjoining house had already been described as in a most rotten state.

Nothing, there ore, could be more unwise than attempting any alterations to houses in this state, and nothing short of rebuilding should have been permitted."

It is only justice to the district surveyor to state that, if the Building Act requires him to make a detailed survey and examination of a house before he sanctions any alter-

ations (?), the Legislature has devised the best possible means of preventing him attending to his duties; his district extends from Tottenham-court-road to Highgate-hill, a distance of about three miles, and it contains upwards of 30,000 houses. Now, if he were to devote the whole of his time in surveying the houses undergoing alterations or in course of erection, assuming that the number of houses building—viz. 600 when the last census was taken—is the usual average, and adding the houses undergoing alterations, it would take him six weeks, allowing only half an hour to each house, to visit the works going on in his district; and if he surveyed in rotation after receipt of every notice, a builder would have to give a notice three months beforehand instead of two days, as required by the Act, to insure an early visit from the district surveyor. This is one of the many absurdities of the Building Act. In 1774, the date of the old Act, one district surveyor was allotted to the parish of St. Pancras, which probably then contained about 600 houses. The first official return is in 1801, the number being at that time 4,500, but at the present time it is estimated that the parish contains 20,700 houses, but still it has only one surveyor. It is quite impossible, therefore, for the duties to be properly performed."

This is the third accident attended with loss of life, and upon which I have been called upon to report, that has occurred in this division of the metropolis within the last two years and a quarter, and in my opinion all might have been prevented if the Building Act had contained proper regulations."

At the last accident seven lives were sacrificed, and after what passed at this inquest it was confidently hoped that the Act would be satisfactorily remodelled."

In the latter end of the same year an alteration was made in the Act, and the Court of Official Referees (which caused, it was stated, great delays in dealing with ruinous structures) was abolished, and three other public departments were empowered to control and assist the district surveyors—viz. the Police Commissioners, the Metropolitan Board of Works, and the Commissioners of Sewers for the City of London."

The effect has been to create a difference of practice and division of authority, and the Act in this respect is more complicated and confused than before. The Metropolitan Board of Works, who appoint the district surveyors, have no power to interfere with dangerous structures; and the Police Commissioners adopt one course of proceedings in one part of London, and the Commissioners of Sewers another within the City. The two latter bodies dislike the duties imposed upon them by the Act, not being in any way connected with the ordinary duties of their departments. The Commissioners of Sewers have not appointed surveyors to administer to the Act, but return the notices to the district surveyors, directing them to be carried out however and at whatever cost or expense they may be. The Police Commissioners employ surveyors, and the result is great jealousy on the part of the district surveyors, who are called upon to superintend works ordered by the Police Commissioners, and which, in this case, they may consider improper; but still they are carried by the act to supervise those works and see them carried out."

It is true that the Metropolitan Board of Works, under the Building Act, appoint an architect called 'the Superintending Architect of Metropolitan Buildings,' but, although his title is so comprehensive, he has nothing to do with the great mass of Metropolitan buildings to which the regulations of the Act apply. He can, in fact, only interfere in buildings where parties wish to construct them of iron, and is a peculiar manner; and even the principal public buildings of the metropolis are exempted from his supervision. Dangerous structures are wholly exempted from his as well as the Board of Works' control."

The houses where this sad accident has occurred is an instance of the practical operation of the Metropolitan Building Act; for, although some of its provisions were modified in 1845 and 1855, its spirit and administration are the same. A witness stated that he believed nearly the whole of the houses on the east side of Tottenham-court-road were in as bad and rotten a condition as Messrs. Maples and Hunter's houses, and these edifices, it should be recollected, are comparatively modern houses, having been erected under the Building Act about fifty years ago."

My belief is (from a knowledge of the buildings in various parts of the metropolis) that not only are the houses on the eastern side of Tottenham-court-road in the state described, but that a very large proportion of the houses erected between 1774 and 1845 are and will be in a few years in the same condition, more particularly those formerly denominated fourth rates, such as are seen in the suburbs of London from several of the railways entering the metropolis."

I think that the Government incur a great responsibility in continuing in force such an Act of Parliament in the face of the frequently-expressed opinions of all parties, from the humblest builder to the judges of the land."

It is an Act which legalises bad building; it has made London as inferior to many continental cities as it formerly was superior, and by its conflicting, and, in many cases, absurd and contradictory regulations, defeats the only object that a proper Building Act should have in view, viz. the substantial construction of all houses and buildings without any exceptions whatever, for the prevention of the spread of fire, and for the protection of the inhabitants of the metropolis from such accidents as the painful one now under investigation."

We must be permitted to question the correctness of the impression sought to be conveyed by this report that the accident would not have happened if the district surveyor had done his duty. Disguised it may be, but this is unquestionably the inference deducible from the commencement of that portion of the report which we have printed. In the first place, as a general rule, it is not the duty of the district surveyor to see if proposed alterations can be made with safety, but that they do not contravene any of the provisions of the Act, and are carried out in accordance with its requirements. In one special case, that of requiring to cut away a chimney breast or shaft, the Act forbids it, unless the district surveyor certifies that it can be done without injuriously affecting the

stability of the building. In Tottenham-court-road, by the way, this was done without the permission or knowledge of the district surveyor, and materially conduced to the ultimate disaster. In general, however, as we have said, this is not the duty of the district surveyor. Say, as an example, that a builder gives a district surveyor notice of his intention to put in a shop-front, the arrangement of the story-ports, bressummer, and projections being in accordance with the Act, we are not aware that the surveyor could, under the Act, prevent the alteration proposed because he found the wall above apparently so bad that the operation might be attended with danger. If the wall seemed really ruinous, he might send notice to the Commissioners of Police, calling upon them to appoint a surveyor to report upon it. This was precisely what Mr. Baker did in Tottenham-court-road, although, by accident probably, no mention of this, nor of the fact that he also gave the builder notice to take down the wall which afterwards fell, is made in Mr. Nelson's report. In the district surveyor's notice to the police of the ruinous state of the party-wall, he also, as we understand, directed their attention to the condition of the premises generally, and, having done this, had done all that the Act empowered him to do in that respect."

The excuse which Mr. Nelson offers for the district surveyor, supposing an excuse needed, is, that his district is much too large, and that "assuming that the number of houses building (viz., 500 when the last census was taken) is the usual average, and adding the houses undergoing alterations, it would take him six weeks, allowing only half an hour to each house, to visit the works going on in his district."

We shall not inquire if the district of St. Pancras be or be not too large, but the figures here given are certainly incorrect. Instead of 500 new buildings (as printed in the *Times*), Mr. Marrable's published "Report on the Examination of the Monthly Returns of District Surveyors," shows, that the number of new buildings in this district in the year 1856 was 162, spread over twelve months, and including stables, workshops, and other small erections. Further, many of these being in rows of eight or ten together, nothing like such a time as half an hour for each house each visit is necessary to enable the district surveyor to see that the requirements of the Act have been attended to."

When an old house tumbles down, the newspapers immediately throw the blame on the district surveyor; although, as they ought to know very well, he is in no degree responsible, and has no power to interfere to prevent such a disaster, beyond sending notice of the state of the house, if it reach him, to the Police Commissioners."

Mr. Nelson very properly points to the division of authority, in respect of ruinous buildings caused by the present Building Act. He says, speaking of the authority given to the Commissioners of Sewers (in the city), and the Police Commissioners,—"The Commissioners of Sewers have not appointed surveyors to administer the Act," &c.; but, "The Police Commissioners employ surveyors, and the result is great jealousy on the part of the district surveyors, who are called upon to superintend works ordered by the Police Commissioners." We have never seen evidence of this jealousy, and doubt its existence, but it is not to that we would refer. There is an obscurity in the observation as to the employment of surveyors, which leads to a wrong impression. Thus, the *Times*, commenting on the report, says,—

"The Metropolitan Board of Works appoint the district surveyors; but, if we rightly apprehend the matter, they have no further right to interfere with their operations. The Police Commissioners, however, exercise control over them without, and the Commissioners of Sewers should do so within, the City boundaries. These two bodies should appoint surveyors to check the proceedings of the district surveyors. The Police Commissioners



have done so, but the Commissioners of Sewers have neglected so to do, and have left the district surveyors to take their own way."

The fact is, the two bodies in question are *not* called upon to "appoint surveyors to check the proceedings of the district surveyors;" the police commissioners have *not* done so, and have no power to do so. As we have again and again pointed out, the district surveyor is bound by Part II. of the Building Act, to make known to the commissioners of police (if the structure be not in the City of London), or to the commissioners of sewers (if it be), any information he may receive with respect to any structure being in a dangerous state, and the commissioners are then to require a survey to be made "by the district surveyor, or some other competent surveyor." The police commissioners determined, on the passing of the Act, to employ a surveyor of their own, not "to check the proceedings of the district surveyors, but to make these surveys; and a district surveyor, having sent off to Scotland-yard the notice he may have received, has nothing more to do with the matter, has no power to interfere in it, and knows nothing whatever of the steps taken until he receive from the builder notice of an intention to do such works as may be necessary.

The district surveyor ought, at any rate, to receive from the police commissioners a copy of the notice given by their surveyor; but this is never sent to him, probably because of the large amount of work there has been to do. The same excuse would probably be pleaded for occasional great delays, for the loose wording of many of the notices from the police authorities, and for non-attendance afterwards to see that the notice has been carried out. From statements which have been forwarded to us by more than one correspondent, it would seem that, in consequence of the illness of the surveyor to the police, the duties have been discharged for some time by a deputy, at a small salary, who has found twelve or thirteen hours a day insufficient for the work, and who has had at times twenty or thirty notices in his pocket waiting to be attended to. We are told that since the Act came into operation, January 1st, 1856, 2,600 such surveys have been made, representing fees to the amount of at least 2,600*l.* so that there can be no reason for the non-employment by the police commissioners, of a sufficient number of competent surveyors to discharge the duties imposed by the Act efficiently and without delay.

#### ROME.\*

ALTHOUGH of small elevation, the hills of Rome appear originally to have been abrupt or precipitous in their sides, which characteristic may still in many parts be observed; their summits forming level surfaces detached from the other parts of the city, except in the case of the Quirinal, Viminal, and Esquiline, which are rather offshoots from the more extensive plateau towards the east than isolated hills. Swamps occupied the lower portions of the intervening valleys, and a portion of the Forum itself was traditionally a mere marsh, of which the Lacus Curtius was one of the last remnants.

"*Ubi nunc fora sunt, nunc tenore paludes:  
Anne redant sua fossa madida, bat aquas.  
Curtius ille lacus, silescit qui sustinet arva  
Nunc a lacu est tellus, nunc lacus ante fuit.*"

These marshes were particularly prevalent in the valleys separating the Capitoline, Palatine, and Aventine hills, the broader portion of which was known as the Velabrum, and for the drainage of which the Cloaca of Tarquin were doubtless originally designed. Of these Cloacae, that called Maxima still presents a remnant for our instruction. The vault is formed of three concentric arches, making an aggregate thickness of about 6 feet, and the sewer altogether is about 13 feet in width and height in the clear.

\* See p. 309, ante.

The stone of which it is built is of itself a proof of its extreme antiquity, being the *tufa lithoide* of Brocchi, one of the volcanic formations found in many parts of Rome, and which was afterwards supplanted in public buildings by the finer quality of the peperino. The portion of the Cloaca Maxima, built by Tarquin, commenced near the arch of Severus, then passed under the Via Sacra to the Temple of Julius, thence, following the course of the Via Nova at the base of the Palatine, it crossed the Forum Boarium, and ran straight to the Tiber, which it entered near the Ponte Rotto. Subsequent additions were made to this sewer as far as the Subura, vestiges of which were discovered in 1742. The expense of cleansing these sewers was defrayed partly by the treasury, partly by the assessment called *Cloacarum*; and under the republic the censors, and under the empire officers called *cloacarum curatores*, had the administration of these works.

After the occupation of the valley between the Palatine and Aventine by the Circus Maximus, the name Velabrum became gradually restricted to the street through which the processions passed from the Forum to the Circus, in which sense it was known in the Middle Ages, and still survives in the title of the old church of S. Giorgio in Velabro. The contiguity of the Forum Boarium to the Velabrum is proved by the passage of Livy, "*Inde vici Tusco Velobroque per Boarium Forum*," &c.; and also by the inscription on the arch of the Goldsmiths, still standing near S. Giorgio. To a late period the Vici Tusci was the great line of communication between the Forum and the Circus Maximus and Forum Boarium, and through it, upon the occasion of the Circensian Games, passed the magnificent procession called the *Pompa Circensis*.

Another point of interest in the neighbourhood of the Forum is the position of the once busy and crowded quarter called Subura. It is to the north-east of the Forum, in the broad valley between the terminating points of the Quirinal, Viminal, and Esquiline, whence two long and narrow valleys separate those hills from each other, whilst a third valley pierces the Esquiline itself in an easterly direction, towards the Arch of Gallienus, that we must look for this celebrated locality. Marliano and the earlier Italian topographers took a far more correct view of this and of many other disputed points than Nardini and the later ones; the difficulties of the latter being mainly owing to their reliance upon the spurious catalogues of Victor and Rufus, which remove it from the fourth region in which it is found in the "*Notitia*," and place it, for no possible reason, the one in the second and the other in the third. The position thus assigned to the Subura at the back of the range of imperial fora, and through which the Transitorium would form a direct communication with the Forum Romanum, is supported by many local proofs, such as the small piazza at the foot of the Via di Sta. Lucia, which still bears the name Subura, and in the appellation of the ancient church of Sta. Agatha in Subura, on the brow of the Quirinal, in its immediate neighbourhood, &c. The doubts that have been raised as to whether the term was applied to a quarter or only a single street is but of small moment, as it probably was first one and then the other; but at all events, so early as the sixth century it had reassumed its more extensive signification, as St. Gregory speaks of the church of St. Agatha as "*in regione urbis illa, quae Subura dicitur*."

To the valley which separates the Quirinal from the Viminal we can assign no ancient appellation; but in the valley between the latter and the Esquiline was the Vicius Patricius, for which we have the testimony of Anastasius and of the Anonymous of Einsiedlen, both of whom clearly state that the ancient church of Sta. Pudenziana, which still exists, was built *in vico Patricii*, which must thus have occupied the line of the present Via Urbina.

The position of the Vicius Patricius established, those of the Cispinus and Oppius—both offshoots of the Esquiline, but included in the original seven hills—by an important passage of Varro, given us by Festus, become equally established. By the same passage of Varro, the Carinae is placed upon the westernmost point of the

Oppius, originally a small fortified village, but in the later ages of the republic one of the most aristocratic quarters of the city. In addition to the above evidence of Varro, that writer states that it was comprised, together with the Caelian hill, in the Regio Subura of Servius; and the fact of this quarter bearing the name of *Le Carra* throughout the Middle Ages, and as late as the sixteenth century, is another confirmation of its locality.

The *Regiones* into which Servius divided the city were but four in number, and did not embrace its whole extent. They were denominated the *Suburana*, the *Esquilina*, the *Collina*, and the *Palatina*, and, amongst other omissions, did not include the Capitoline hill or the valley of the Forum, or of that of the Velabrum or the Aventine. Various conjectures have been advanced to account for these omissions, and different readings of passages in Varro and Livy, relative to certain chapels instituted by Numa, which influenced the limits of the *Regiones*, have added this to the list of unsettled questions.

Augustus made a fresh division of the city into fourteen *Regiones*, each consisting of a certain number of *vici*. Each *vicius* consisted of a certain collection or plot of houses surrounded by streets (whence the term became applied to the streets themselves), each *vicius* being composed of two classes of houses, called respectively *insulae* and *domus*. The law for building each house detached, which had been disregarded during the republic, was again enforced by Nero after the fire, a passage, called *ambitus* or *circuitus*, being left round each for the purpose of disconnection. The *insulae* were the habitations of the middle and lower classes, and were generally let out in floors; the *domus* were the habitations of the rich, and were consequently comparatively few. Each region was composed of a certain number of *vici*, and were distinguished for a long period by numbers only,—the period when names were first applied to them being impossible now to determine; but as late as Hadrian the numbers only were still in use, as shown in the Basis Capitolina. Though the exact boundary of these regions cannot be traced with certainty, a general view of the situation of each, and the principal objects of antiquity within it, may be given in a few lines.

*Regio 1, Porta Capena*, included the suburb beyond that gate, east of the Baths of Antoninus, and contained the Temple of Mars, Tomb of the Scipios, and the Arch of Drusus.

*Regio 2, Caelimontana* included the Caelian hill, and contained the Arch of Dolabella, and the arches of the Aqueduct of Nero.

*Regio 3, Isis and Serapis*, comprised the Valley of the Colosseum and the offshoot of the Esquiline, originally called Oppius, and contained the Flavian Amphitheatre, and the Baths of Titus and Trajan.

*Regio 4, Templum Pacis, or Sacra Via*, comprised the greater part of the valley between the Palatine, Esquiline, Viminal, and Quirinal, and contained the Colossus of Nero, the Temples of Venus and Rome, Antoninus and Faustina, Peace, the Sun and Moon, the Basilicas of Constantine and Paulus, the Forum Transitorium, &c. and included also the Subura and the greater part of the Sacred Way.

*Regio 5, Esquilina*, included the Cispinus and the Viminal, and a large tract of suburbs lying to the east of the Servian walls and Agger, embracing the Amphitheatre of Castrense, and the building called Minerva Medica, and amongst its principal contents, were the Gardens of Maecenas, the Arch of Gallienus, the Nymphaeum of Alexander Severus, Baths of Olympia, Helena, and Agrippina, Circus Varianus, &c.

*Regio 6, Alta Semita*, embraced the Quirinal, and extended to the east, so as to include the Pretorian Camp, and contained the house and gardens of Salust, baths of Diocletian, Constantine, and Paulus, the ancient capital, and Temples of Flora, Quirinus, and many others.

*Regio 7, Via Lata*, bounded on the east by the Quirinal, on the north by the Pincian, on the south by the Servian wall, and on the west by the Via Lata, included in its chief objects the Temple of the Sun, Arches of Gordianus, Claudius, and Verus, Tombs of Bibulus, of the Claudian family, &c.

*Regio 8, Forum Romanum*.—This important



region included in its extent the ancient Forum and its contents, embracing those important buildings in its circuit which we have already described, from the Temple of Caesar, along its south side to the Capitoline Hill, which was also included in it, together with the valley between it and the Palatine, as far as the Velabrum, and thence extending on the north side of the Forum as far as the Transitorium, including the Fora of Cæsar, of Augustus, and of Trajan, with the Basilica Ulpia, and numerous temples and monuments that we need not enumerate.

*Regio 9, Circus Flaminius*, comprehending the district lying between the Via Lata on the east, the Tiber on the west, the Capitoline on the south, and the Piazza Navona and Colonna on the north, included the theatres of Balbus, Pompey, and Marcellus; the Pantheon, the Baths of Agrippa and Nero, porticos of Octavia and Philip, and many other monuments.

*Regio 10, Palatium*, containing the whole of the Palatine-hill. This hill, at once the cradle of Rome, and the chosen residence of its emperors, is a scene of peculiar interest, from the extensive ruins that occupy so large a portion of it; but the arrangement of which, into anything like pristine form, must remain a problem not easily to be solved. Although long subsequent to the reign of Nero, the Notitia and other authors still speak of the *Domus Augustiana* and *Tiberiana*, as applied to portions of the new palace, it by no means proves that those portions retained their original character, as the expressions of Tacitus would argue almost a total destruction by fire of the original buildings. Many subsequent alterations were made to the palace of Nero itself; and Domitian, Severus, and Elagabalus are all recorded as having added to its extent and splendour; but of their individual labours the only portion whose founder is matter of certainty, was the Septizonium of Septimius Severus, at the south-east angle of the palace, near the Porta Capena, where a large portion was standing till near the end of the sixteenth century, when it was demolished by Pope Sixtus V. A spot of greater interest for the general scholar, as connected with the earliest legends of Rome, was the Germalus, the part of the hill hallowed by the presence of the Lupercal, or grotto, in which the twin-founders of the city were nursed by the she-wolf. The Germalus was one of the ancient seven *montes* of the Septimontium, which we must remember was very different from the "Septem domini montes" of the Imperial City; and in the same relation to the Palatine was the Velia, another member of the Septimontium, but whose situation is not so clear, as Niebuhr and Bunsen place it north-east of the Palatine, and the later Italian antiquarians, north-west.

*Regio 11, Circus Maximus*, was principally composed of the valley between the Palatine and Aventine, and included the Velabrum on the north. It comprised the Circus Maximus and temples to Ceres and Proserpine, Mercury, Portunus, Vesta, Juno Matuta, &c.

*Regio 12, Piscina Publica*, was bounded on the north by the Celian, on the east by the Region of the Porta Capena, on the west by the Aventine, and on the south by the Aurelian walls, and the chief object in its circuit was the Baths of Caracalla.

*Regio 13, Aventinus*, comprised that hill and adjacent parts, and included in its extent the sepulchre of Caius Cestus.

*Regio 14, Transtiberina*, was the largest of the regions, including the Vatican, Janiculum, with the district between them and the river, and the Insula Tiberina. Such were the famous regions of Augustus, as instituted by him for the better administration of the municipal regulations of the city.

We have found it impossible to allude to more than a very few of the disputed topographical points in this favourite field of antiquarian polemics, where every inch of ground has been disputed, where an argument has been found for every theory, and every fresh theory has found a train of zealous adherents. Nor can we, by the same rule, venture to touch upon more than one or two of those architectural divisions into which the monuments of the city may be divided, and which Canina has classified

into walls, temples, fora, and buildings belonging to them, porticos, theatres, amphitheatres, circi, baths, aqueducts, bridges, triumphal arches, honorary and sepulchral monuments, and private buildings.

Of the works of ancient Rome there is none of equal antiquity so well preserved as the Pantheon, which may partly be ascribed to its having been converted into a Christian church so early as the reign of Phocas, and it is not one of the least of the proofs of the noble scale upon which the Romans constructed their regal edifices, that this magnificent rotunda, with its noble portico, which Forsyth pronounced to be "positively the most sublime result that was ever produced by so little architecture," should be considered by many, and amongst them Canina, to have been a mere vestibule to the Baths of its founder.

"Glorious dome!  
Shalt thou not last? Time's scythes and tyrants' rods  
Shiver upon thee—sanctuary and home  
Of art and piety—Pantheon! pride of Rome!"

As in the latter styles of architecture that have prevailed, a taste for redundancy of ornament and unnatural combination has enfeebled and effeminized until the masculine dignity and real symmetry of the original type has disappeared beneath the weight of riches that has helped to crush it, so was it with that of Rome. The arts of Greece, transplanted into this new soil, found a style already established with which it was forced to combine. The Greek column and entablature became united with the Roman arch and vault; and though a style of much beauty was evoked from the combination, yet the antagonistic principles that stamped its parentage produced at last a taste for incompatible ornament, the vigour of the originals was lost in the ill-assorted union, and beauty was sacrificed to the fault of over-enrichment.

"Another enemy," says Forsyth, "to the beautiful, and even to the sublime, was that colossal taste which arose in the empire, and gave an unnatural expansion to all the works of art. In architecture it produced Nero's golden house and Adrian's villa; in hydraulics it projected the Claudian emissary and Caligula's Baian bridge; in sculpture it has left at the Capitol such hands and feet as betray the emperor's contempt for the dimensions of man; in poetry it swelled out into the hyperboles of Lucan and Statius. This exaggerated spirit spread even to the games. Nero drove ten horses yoked abreast to his car, and double that number appear on an ancient stone."

The same colossal taste is evinced in the various thermæ of Agrippa, Nero, Titus, Trajan, Caracalla, Diocletian, and Constantine; in the imperial palace, which, taking root in the modest mansion of Hortensius, covered the whole palatine, and branched over to the Esquiline, also in the mausolea of Augustus and of Hadrian, in the theatres of Pompey and Marcellus, and in the Colosseum.

The erection of an amphitheatre in the midst of Rome was one of the designs of Augustus, but it was by Vespasian and Titus that the Flavian Amphitheatre was begun and finished. From its vast size, the subsequent erection of any other such building in Rome was rendered unnecessary. It stood on the site previously occupied by the Lake of Nero, between the Velian and the Esquiline, and was capable of containing 87,000 persons. In the reign of Macrinus it was so much damaged by a fire occasioned by lightning, that it was necessary to exhibit the *gladiatores* and *venationes* for several years in the Stadium. Its restoration was completed by Alexander Severus, and the *venationes*, or combats with wild beasts, were continued in it as late as the sixth century. In the Middle Ages it was used as a fortress, and a portion was at a later period destroyed by the Romans themselves for materials for the Cancallaria and Palazzo Farnese. Here sat the conquerors of the world, coolly to enjoy the tortures and death of men who had never offended them. "Two aqueducts were scarcely sufficient to wash off the human blood which a few hours' sport shed in these imperial shambles. Twice in one day came the senators and matrons of Rome to the butchery. A virgin always gave the signal for slaughter; and when glutted with blood-hed, those ladies sat down in the wet and streaming arena to a luxurious supper."

From the silence of Vitruvius upon triumphal arches, we may suppose that those that existed in his time, if any, were few and insignificant. Of twenty triumphal arches recorded by different writers as erected in Rome, but four now exist, namely,—that of Drusus, erected to Nero Claudius Drusus, on the Appian Way; that of Titus, at the foot of the Palatine, erected to his honour after his conquest of Judæa; that of Septimius Severus, at the end of the Via Sacra, erected to that emperor and his sons Caracalla and Geta, on account of his victories over the Parthians; and that of Constantine, erected to him by the Senate after his victory over Maxentius. Of the Arch of Tiberius, at the foot of the Clivus, no remains exist. The same may be said of the Arcus Novus, or of Claudius, on the Via Flaminia; that of Verus, that of M. Aurelius, and that of Gordian on the Via Flaminia. The term *arcus* seems to have been applied to arches of triumph only, and that of *foris* to those of entrance; and as the use of the former was to receive the conqueror returning from the scene of his achievements, so was it the custom to place these arches on the Via Triumphalis only, on the route to the Capitol, where he deposited the spoils of his victories, and where the triumph terminated in sacrifices. A Roman conqueror found his greatest reward in this public ceremony; and if the triumph was decreed by the Senate, by so much was the honour enhanced; but if the triumph into Rome was denied, he contented himself with the minor honour of a procession to the temple of Jupiter Latiaris, on the Alban Mount, to which we before alluded (page 182), and where, upon the basaltic pavement may still be read the letters N. V.—*Neminis Via*.

Of the triumphal processions of the emperors, who, upon the concentration of the supreme power into their own persons, chose to exhibit themselves in this manner—the description of that of Aurelian, as given by Vopiscus, and paraphrased by Gibbon, with all its barbaric splendour and cruelty, and which may be taken as an average specimen. As these arches are so well known to architects, we shall offer no description of them, nor, indeed, will it be possible to touch upon the architecture of Rome in the present limited series of papers.

Of the aqueducts, there were nine principal ones in the time of Frontinus—the Appia, Anio Vetus, Marcia, Tepula, Julia, Virgo, Alsietina, Claudia, Anio Novus, and the subsidiary ones, called Augusta and Rivus Herculaneus.

Between the time of Frontinus and that of Procopius, they had considerably increased in number, since the latter historian relates that the Goths destroyed fourteen aqueducts that were within the walls. The "Notitia" enumerates nineteen, but to give a history of these would far exceed our limits, and we must content ourselves with one or two general observations upon them.

It is to S. Julius Frontinus, *curator aquarum*, under Nerva, and Trajan, who wrote a treatise upon the subject, that we derive our chief knowledge about these aqueducts. The facts of the Greeks not having had aqueducts, and of the Romans having had them instead of pipes, which facts used to be accounted for by the summary reasons that the Greeks, not knowing the principle of the arch, could not construct them, and that the Romans, not knowing the laws of hydrostatics, could not do without them, has of late years received fresh solutions in the more probable reasons, that the Greeks, having an abundant supply of water, had no need of them; and that the Romans, though well aware of the grand leading principle of hydrostatics, still preferred them. As regards the Romans, Vitruvius not only expressly speaks of the law, but describes its application in a particular instance; and Pliny, in describing the passage of water through pipes, states the law clearly in the terms, "Subit altitudinem exortus sui." Of these aqueducts, four belong to the time of the Republic, whilst five were built in the reigns of Augustus and Claudius.

The Aqua Appia (so called from its founder, Appius Claudius Cæcus) was the first of these public works, and commenced near the Via Prenestina, between the seventh and eighth milestone. The Anio Novus was the longest and most lofty of them, being nearly 59 miles



long, and its arches occasionally 109 feet high. To complete the fourteen described by Procopius, five more must be added; but two only of these are certain,—the Trajana and Alexandrina.

Of equal interest is the subject of *Vieæ* or Roads. They were divided into *privata* or *publica*, the former being those the use of which was free, while the soil itself remained private property; the latter, those of which the use, management, and soil were alike vested in the State. The *vie publica* of the highest class were distinguished by the terms *militares*, *consulares*, and *pretoria*. Vitruvius gives no details for road-making, but gives minute directions for pavements; and the fragments of ancient pavements still existing correspond so exactly with the remains of military roads, that we cannot doubt that the processes in each case were identical. The most elaborate treatise upon the Roman roads is that of Berghier, published in 1622, which must be consulted for the details, extensions, and changes of the various roads that issued from Rome, and to which the researches of numerous local antiquaries have added much. The following were the principal roads starting from Rome itself,—the Appia, Latina, Labicana, Praenestina, Collatina, Nomentana, Salaria, Flaminia, Aurelia, Portuensis, Ostiensis, and Ardeatina.

The excavations and discoveries upon the Via Appia, under the superintendence of the late Canina, are too well known to require more than a passing allusion. His volumes descriptive of all that he had done upon that extraordinary line of road, with his views of the monuments that adorned it in their ruin and in their perfection, were the last result of his indefatigable industry and versatile invention.

A slight sketch of the authors to whose labours, from the revival of art, we owe our knowledge of all that appertains to Roman architecture must be of interest to the architect. Our first insight into the bygone splendours of Rome, after the long night of darkness that had veiled them from the world, were principally derived from various drawings of Roman monuments by Alberti, Bramante, Perruzzi, San Gallo, and their contemporaries, though these were mostly unpublished. Labacco was one of the first who published with some accuracy, at the beginning of the sixteenth century, some of the ancient buildings—such as the Mausoleum of Adrian, temples of Mars Ultor, Antoninus and Faustina, Venus in the Forum of Cæsar, &c. Serlio, of Bologna, architect to Francis I. furnished several plans and drawings of ancient Roman buildings, in the 3rd book of his work on "Architecture." Bufalini's great plan of Rome, as it was in 1551, was most important for Roman topography; but all that now remains of it is an imperfect copy in the Barberini palace. Pirro Ligorio, about the middle of the sixteenth century, treats of circi, theatres, and amphitheatres, but from his works, says Canina, one cannot derive much precise knowledge. Bernardo Gamucci also published several views about same time. In 1570 appeared the great work of Palladio; as Canina observes, showing greater diligence and knowledge of ancient art than had yet been evinced. Afterwards were published all the drawings of Palladio, from the ruins of the thermæ of Rome, with his restorations corrected and improved by Cameron, and reproduced in Italy by Scamozzi, whose "Discorsi sopra le Antichità di Roma" contains some good views, but insignificant letterpress. In 1574, Ursinus assisted the French architect, Du Perce, in drawing up a plan of the restored city, which was published by Giacomo Lauro; it is, however, erroneous and of little service. Of more value are the views of ancient monuments of Du Perce, published in 1573. Of Vignola we have only a few interpretations of certain parts drawn from ancient monuments. Other authors have contributed in various degrees to our knowledge, as Sulpicio, Giscondo, Leto, Cesarino, Durantino, Melchiorri, Filandro, Barbaro, Caporale, Fontana, &c. Fabretti illustrates the writings of Frontinus on the aqueduct, Bosio in his *Roma Sotterranea*, Aringhi, in his *Roma Subterranea Novissima*, Cassio, Barbault, Bianchini, Overbeck, and many others, well the list of contributors to the illustrated literature of Rome.

Desgodetz was the first who, whilst seeking to

purge the art of building from the bad practices introduced in the sixteenth and seventeenth centuries, showed with exactness and consummate ability the remains of the ancient fabrics of Rome. He contented himself with leaving the ruins as he found them, only showing the portions that appeared above earth, measuring and restoring them with great exactness, and exposing the inaccuracies of Palladio, Serlio, Labacco, and De Chambray. His work, published in 1682, commenced a new era in architectural restorations, and in many respects has hardly been surpassed.

Piranesi gives drawings of several monuments not previously published, reproducing also with some previously published. According to Canina, he represents generally with much truth all that he saw existing in the ruins, but where he had to supply deficiencies from imagination, he produced results, *tanto lontane dal vero e così capricciose che difficilmente si sarebbero potute eseguire in qualunque genere di architettura.*

Alirri, Bianconi, Uggeri, Durand, Cipriani, and Il Piroli, have followed in various degrees, and a host of others down to the present time have given the produce of their labours in this fruitful field for the benefit of the world in general.

One more only can we cite. Though temples have changed their names, fora their limits, and excavations disclosed the fallacies of mere scholarship since Messrs. Taylor and Cressy published their volumes upon "The Architectural Antiquities of Rome," still their excellent drawings and accurate measurements are not deteriorated in value in the slightest by such changes, and it is, and must ever be one of the most valuable of our works upon this subject.

And here, for a time, we must leave the engraving subject of the topography of the Eternal City, the foregoing sketch of some of the leading points of its controversies being prepared solely for the benefit of those who have been accustomed to regard the subject of Rome in an architectural light only.

Study it, however, as one may, whether as architect, topographer, or simple traveller, one cannot fail to become moralist; and beautiful but sad is the reflection of the historian, that "the art of man is able to construct monuments far more permanent than the narrow span of his own existence; yet these monuments, like himself, are perishable and frail; and in the boundless annals of time, his life and his labours must equally be measured as a fleeting moment."

ALEX. FRED. ASHTON.

#### THE GOVERNMENT COMPETITION DESIGNS.\*

In the design for the Foreign-office, numbered 100, and having the motto, "Vivat Regina," the Gothic style is adopted. The drawings show a very lofty inner hall, with a groined ceiling, and crowned externally by a spirelet and pinnacles, the ceilings generally being groined, or wagon-headed, whilst the exterior displays a profusion of pinnacles, canopies, and traceried oriel. No. 101 having also the motto "Vivat Regina," but with a red cross on a black ground, has been attributed to Mr. Knowles, jun., and has some points of resemblance in plan and decorative character to No. 69 already noticed. The drawings include general plans, two alternative suggestions, a block plan of the Offices, according with the proposition in one of the general plans, and designs for the War-office and the Foreign-office, in two similar buildings, with arches and a carriage-way between. One of the general plans offers an arrangement not based on the instructions, and proposing a place 700 feet in width, extending from the Abbey to the Nelson Column, and with semicircular ends. The Offices are proposed to be arranged on each side. In the other general plan, the author proposes to move Westminster-bridge opposite to Charles-street, placing another bridge at Charing-cross, to form a "New Westminster-square," opposite a wide approach to the bridge, and to prolong a "New Mall" through the park to the present Buckingham Palace, which he would give to the National Gallery, and build a new palace at Kensington. In the block plan, the Offices are arranged symmetrically, the present Board of Trade building being preserved. In the plan of the War-office, an outer hall, 47 feet by 36 feet, gives access, from Parliament-street, to a hall of 132 feet by 62 feet, ranged transversely, which has a staircase at each end, 28 feet by 25 feet.

Arcades, and galleries with columns, surround this portion of the plan. Across the inner hall, another of similar character is entered at the end; and this hall contains two long flights of stairs to the first floor. With the halls and galleries, corridors communicate—generally well lighted from two open courts. The exterior shows a rusticated *soubassement*, an arcuated ground story, with niches in the piers, and enriched spandrels (except in the towers or masses of the angles, where the arches are rusticated); a first floor with Corinthian columns, rich window dressings, and festoons; and in the floor over, enriched arch-headed windows. The angle masses, carried up a story higher, are like many other parts of the design, much enriched with sculpture. Escutcheons are suspended at the angles by festoons. The different cornices are crowned by balustrades, and the towers also by low domes. In the Foreign-office plan the arrangement is similar, as to the first portion of the building entered; but beyond the transverse hall is a wide staircase, with lateral galleries, by which last a connection is formed between the landing of the staircase of the residence and the corridors of the Office. The residence has two entrances, one in each angle tower, next the park; and the entrance halls are joined by a corridor, with columns, and 240 feet long by 21 feet in width; and off this, is the chief staircase to the reception-rooms above, near which is a grand reception gallery 277 feet long, and the same width as the corridor below. The chief staircase of the Office has Persian figures, supporting a wagon-headed vault, with ribs and coffers, and is lighted by lunettes.

No. 102, "Detur digniori," comprises a general plan, block plan, and drawings of the War-office and the Foreign-office, as portions of a general design. Westminster-bridge moved to be in line with the new Charles-street; and bridges at Charing-cross and the Horseferry; a new street crossing Dean's-yard to the Victoria-tower (with gates at the yard); the Westminster School removed to a site in a place formed south of the Victoria-tower; and St. Margaret's Church to a site due north of the Abbey transept, are contemplated improvements. In the block plan, the principal existing buildings are retained; archways crossing the routes are shown as prominent features; and from the centre of the western portion of the ground, a terrace, elliptical on plan, projects, with an archway and a building for the State Paper-office in the centre. As to the decorative design of the exterior, the Italian style is adopted; but an alternative design shows in certain parts, columns which are gigantic in proportion to the adjacent features, and discordant. We see many indications of the fevered excitement in which the preparatory work for this competition has gone on; and it is plainly to be inferred, that creditable as the majority of the drawings are, they do not represent the best designs that could be got from the authors, English or foreign.

The drawings under No. 103—"E lasciate Speranza"—which in many respects display considerable beauty of design, include a general plan, a block plan, and drawings of the War-office and the Foreign-office in separate buildings. Westminster-bridge, is proposed to be moved in line with Downing-street, which is, as in most cases, carried through to the park, and no bridge is provided northward. For the approach to the bridge, as shown, a portion of the offices of Montague House would have to be destroyed. It is certainly to be regretted that parties apparently interested in the questions of site for the Offices and communications should have been chosen as judges. At the present site of Westminster-bridge, steamboat landing-stairs would be constructed; and Inigo Jones's water-gate is proposed to be there placed. The plan provides for the removal of St. Margaret's Church, to the west of the Abbey; and the Chapter-house is thrown open. The parade of the Horse-guards is disposed on a regular plan, new buildings are added to the Admiralty, and the Mall is opened to Charing-cross, and enclosed by gates. A mistake of the arrangement proposed by the author of this design as to the Offices generally, is the recommendation of two different styles—Italian and the style of the Houses of Parliament—for different portions of the ground. The War-office and Foreign-office designs are in the former style. The plan of the War-office has four courts, divided from each other by corridors, and an octagonal hall in the centre, surrounded on each floor by ambulatories and arches on columns. The centre is carried up to a considerable height, and is domed over and crowned with a lantern. The chief front towards Parliament-street is remarkable for the treatment of its masses at the angles with truncated roofs rising higher than the general line, and curved inward on the face; for its two tower-like and spire-capped projections in the centre of the front; and for what is its best feature, its piazza between the wings, with projecting carriage-porch of columns and side-arches. The windows are peculiar, having several "orders" in the arches, and having labels, and

\* See p. 313, ante.



imposts, and shafts in the jambs. The frames of the windows are treated architecturally, as they apprehend they always should be, in preference to glazing with one or two sheets of glass. The Gothic style has especial advantage over the nineteenth century Anglo-Italian in this point; and it is thought by many, that the French easement in various forms, imparts by the effect in the windows, a general effect to the buildings of France, which we cannot hope to equal whilst we use the sash. It is curious as bearing on this point, that at Chatsworth, in the old building by Talman, the substitution of plate glass for very small panes with gilt sash-bars, did certainly not add to the effect. Entablature strings, and a Venetian cornice; panels between the windows and shields in the spandrels; to the angle masses, central features breaking forward and formed of clustered pilasters, columns, and niches, and terminated by a dormer; with ornamental chimneys; are amongst the ingredients of a design, which we have thought deserving of notice, as—without reference to any of its merits—in evincing the possibility, eventually, of that habit of combination of materials from several styles, with fruits of new ideas, along with that general concurrence on the subject of style, which would serve both the production and the public appreciation of art, and which, all of them, as we believe, are required to set our architectural practice on the direct road of progress. The design for the Foreign-office has not quite the same kind of merit.

No. 104, marked "Pax," includes a general plan, a block plan, and a design for the Foreign-office. The site of Westminster-bridge is preserved, but with the additional width placed on the down-stream, or north side; there is a bridge approached from Charing-cross,\* and one at the Horseferry. The coincidence as to the provision of three carriage routes in a space where there is now one, and where, we believe, not more than two had been suggested previous to our taking up the subject, is certainly remarkable. The author of the present design proposes to clear away the whole of the buildings between Whitehall and the park, except the Horse-guards and the Board of Trade. The design for the Foreign-office is not a bad one,—subject to this exception, that some of its forms and details are too obviously studied from Sir Charles Barry's Italian buildings,—as, for instance, Bridgewater House.

The author of No. 107 contributes a general plan, a block-plan, and a design for the two principal offices in a connected building. The site of Westminster-bridge is retained; Hungerford-bridge is widened, and a bridge is provided at the Horseferry; the Mall and Strand are connected; St. Margaret's church is moved; and the Law-courts are placed to the south of Henry the Seventh's chapel. In the block-plan there is a recessed quadrangle on the east side of Parliament-street; and otherwise, the usual arrangement is observed. In the War-office and the Foreign-office, the corridors, though they are described as well lighted, do not appear to be as described; for, there is a length of 85 to 90 feet with no appearance of lighting arrangements. The style is Venetian Cinque-Cento.—No. 108, with the motto,—

\*\*\* res antique laudat et artis  
Ingredior,

is a design for the War-office and Foreign-office, with a central quadrangle and archways. It errs greatly by the employment of uniform rustication over pilasters and wall surface, throughout each front.

A motto from "As you like it"—the words spoken by Orlando—"I come but in as others do, to try with him the strength of my youth," is attached to a design for the whole of the offices, in the style of the Banqueting-house. The number, 109, includes a general street-plan, a block-plan of the Offices, with general views and elevations, and designs for the War-office and Foreign-office, in symmetrical blocks. The author has gone into the subject with great care. The site of the new Westminster-bridge is proposed to be at "100 feet from the face of the present clock-tower—to the centre of the roadway; and the width of the bridge to be 85 feet," which is nearly the same as preserving the present site with an addition on the down-stream side,—as to the advantage of which arrangement, as well as to the economy, we have so often expressed doubts. There is a bridge at the Horseferry; and that intended to serve the traffic from Charing-cross, is a skew bridge—placed starting from a point nearly opposite to the Banqueting-house, with curved approaches to it, around a place enclosed by gates—one approach commencing in Whitehall at a point opposite the south end of the Board of Trade, and the other from a place formed at the junction of Whitehall and Charing-

cross. The Mall is joined to the south end of the place mentioned—instead of to Charing-cross en route for the Strand. Wings are added to the Horse-guards, ways to the park being left at the ends, and Dover House being removed. St. Margaret's Church it is proposed should be removed, and built to the north of the present site. The great additional width given to new streets by the authors of the best designs in the collection, shows a proper appreciation of the growing wants of London. The present author divides the traffic in his new Parliament and Bridge streets by dwarf-walling and groups of sculpture at convenient points. In the block plan, the general principle of arrangement is one seeking the effect produced by one comprehensive building—on the west side of Parliament-street at least. The author, however, as will have been inferred from the nature of the style, does not include the present Board of Trade in the arrangement here referred to, though he preserves that building. The ordinary division into blocks, which follows from the instructions as to the two principal offices, and from the position of Charles-street, is observed, as well as symmetry on the west side of Parliament-street; but the ends of the present streets, as Charles-street, are appropriated as *cortiles*, or archways, and built over so as to gain the central feature of the elevation; whilst, in the centre, is placed a tower, decorated with orders in two recessed stages, and crowned by a pyramidal capping. This tower could be seen from the chief points of view. Two other towers are placed on other portions of the ground. Amongst the drawings are good views of the quadrangle next Great George-street, of one which opens from Downing-street, and of Parliament-street, looking north, besides a view of the Foreign-office from the parade. These certainly place the capabilities of the style in a clear light; and the decoration of the internal courts—a point not to be disregarded as it has been by many of the competitors—has been studied both in the architecture, and by the introduction of groups of sculpture. In the War-office plan, it is right to say that corridors may be found, running for 80 feet without apparent lighting; but in many parts the decorative effect has been well studied, as in the staircases. In the Foreign-office there are two open courts (as there are also in the other Office), and the north-west angle is rounded off. The entrance to both Office and residence is at the south. The Office has a staircase to the park, in a tower between the new building and the State Paper-office, which last is preserved. The chief rooms in the residence look to the north.

We have succeeded in preserving a few other memoranda of the designs, and of the impressions which they made upon us; and shall in a future number proceed with our record. It happens that several meritorious works are placed in the order of the hanging, so as to come later into our notice than they otherwise might have done. The interest taken in the exhibition has, however, not subsided; and no doubt for many years—more than in the case of the Houses of Parliament—the designs which have attracted any attention will be frequently referred to.

#### CORRESPONDENCE ON THE WESTMINSTER DESIGNS.

In my letter to you on the subject of Mr. E. L. Garbett's remarks on the Westminster Improvement Plans, I disclaimed any wish to enter upon a controversy, and his communication in your last number fully confirms my opinions on this point. I agree with the poet,—

"Vociferated logic kills me quite,—  
A noisy man is always in the right;  
I twist my thumbs, fall back upon my chair,  
Fix on the waincoat a distressed stare,  
And when I hope his blunders 'ere all out,  
Reply discreetly,—to be sure—no doubt."

Far more congenial to my taste would have been the passive acquiescence above described,—but as E. L. G. has withdrawn what appeared to me his original charge, and substituted another in its place, I must crave the opportunity of making a brief reply to that.

He disclaims having charged us with choosing our style on the base, palty, contemptible principle of its combining the least amount of work with the largest amount of pay,—nay, he gaily assumes that principle as his own, assuring us that it is the very one on which he always did work, and always intends to proceed. Be it so.—The principle is still, to my mind, an ignoble one as applied to art, and I cheerfully resign it to him.

His present charge (divested of certain repulsive accessories, of which more hereafter) is, that he never thought us capable of selecting any style,—that the style has appropriated us,—and that without some such corrupt style, no such men could have existed, or would have touched a pencil. My own reply to this is,—my pencil was (what I trust it always will be) my joy and solace, long before I knew anything of

architecture; and when I entered on my pupillage in that art (pure Grecian architecture being then the fashion, and the Medieval revival not dreamt of), I instinctively turned to Gothic, copied all delineations of it with avidity, and examined its remains with delight; and a fortnight spent under the shadow of Tintern, exploring, sketching, and gazing with rapture on its majestic ruins, still stands out as the brightest spot in my artistic life. Nor will I yield to Mr. Garbett, or any one else, in earnest, hearty, reverent admiration and love of the exquisite relics of Gothic art. Hence, however, I part company with him. I never felt the fervour for Chinese-like reproductions of it, or the still more mischievous mania for its (so called) restoration. To me, even its adoption for ecclesiastical purposes, without prodigious modification, is inconsistent with the pure Christianity of the Gospel, and its application to civil purposes is at variance with the dictates of my common sense and notion of the fitness of things.

I believe the age of Gothic architecture to have passed away, almost as entirely as that of chivalry, and in my eyes, he who salutes forth on his Medieval hobby-horse, intent upon restoring it, whether he blazon on his banner the bold motto, "A vaillants cœurs rien impossible," or "Thou hast covered my head in the days of battle," is a veritable Don Quixote in the domain of architecture; with much, doubtless, of the true heart and gallant spirit of that redoubtable knight, but with the same unmistakable flaw at the root of the whole performance. And to such true knight, I wren, Mr. Garbett is a right trusty and doughty squire (I crave pardon for being ignorant whether he has yet won his spurs on this bloodless battle-field), with much of the spirit of the immortal Sancho,—witness that unctuous adage, "A minimum of bread to a minimum of sweat," which has the genuine Sancho flavour.

This is not the place to enter upon a statement of why I believe Italian architecture to be adapted to the purposes of our times; and your able correspondent Mr. Wightwick has rendered the attempt superfluous, by doing it ten times better than I could, in a paper which I earnestly commend to the study of "E. L. G."

Such is my plain reply to the twofold charge of Mr. Garbett. I do not say that I am right. Solomon tells us, "The way of a fool only is right in his own eyes," but I see nothing in the process by which I have arrived at my convictions, necessarily connected with "per centage," or at all analogous to "the choice of the immortal Hobson." It seems to me as clear and deliberate an exercise of the understanding as Mr. Garbett is capable of, and with just as hearty an appreciation of the beauties of Gothic architecture as he can lay claim to. As to the coarse illustrations which accompany his charges, the "dirt," "vermin," &c. &c. I presume these are meant to offend those whom his logic fails to convince. I can assure him they do not—cannot—offend me. My favourite poet supplies me with an ever ready shield against such assaults:—

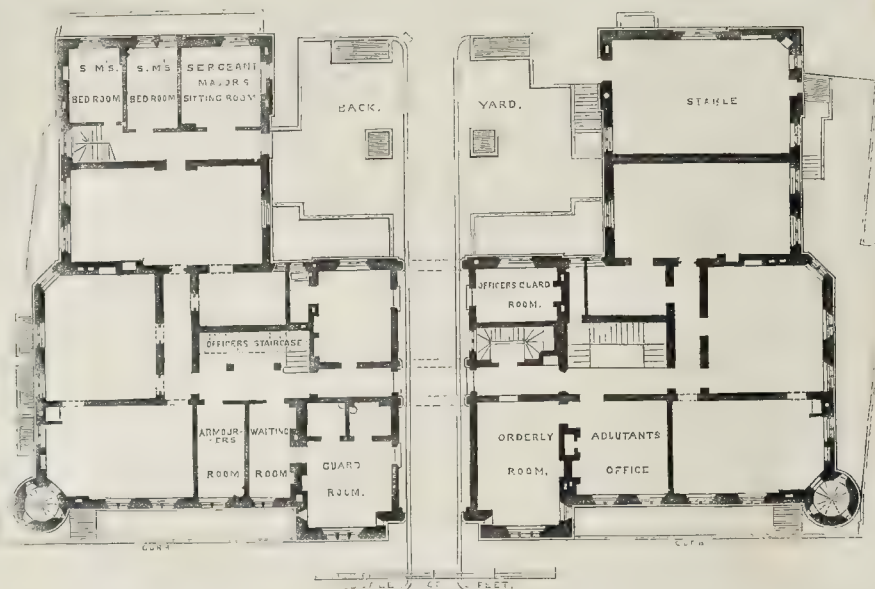
"An honest, sensible, and well-bred man, will not  
offend me,  
And so other can."

One word only as to Mr. Garbett's views on the present position of the architectural profession. He says, that I cannot have observed society much without perceiving that the "anims" displayed in his communications is that held towards me everywhere. I can assure him I never met with such an animus on any subject; nor do I expect to, within the pale of polite society.

By way of illustrating his views, he makes allusion, somewhat in the style of Mrs. Nickleby, to a certain speaker at some meeting, who observed that the very name of architect often "raised a hardly suppressed sneer,"—though what is the precise signification of that expression I cannot say. In my own experience of many years, and among almost all classes, I have ever met with respect, cordiality, and confidence,—a large measure of which I attributed to the profession of which I am a humble member rather than to myself. And when I look to the highest walks of that profession, I see such men as Sir C. Barry, Mr. S. Smirke, and the accomplished (reputed) author of No. 116, enjoying an amount of distinction and emolument more than sufficient, I dare say, to atone for the missiles occasionally hurled at them from less fortunate, but, as it would seem, more deserving rivals. But I have sufficiently "observed society" to know that in all professions there are men occupying positions far below their own estimate of their merits,—and such men look with a jaundiced eye upon the whole thing, and freely indulge in sneers (not of the suppressed kind). To such I would echo Mr. Garbett's words, "let them bide their time," but let it be in patience and silence. The wisest of men tells us, "He that hath knowledge spareth his words, and a man of understanding is of an excellent

\* It may be well to state, that we have in all cases applied the designation of a site approached "from Charing-cross" to such bridges as had their approach suitable to the traffic from Charing-cross. A bridge with approach anywhere on the east side of Northumberland House, should hardly be called a Charing-cross-bridge; though the present Hungerford-bridge has had that title.





PLAN OF THE DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.

spirit." With which sentiment I take my leave of Mr. Garbett, recommending it to his serious consideration. A COMPETITOR FOR THE BLOCK PLAN.

A correspondent says, with reference to some of our remarks last week:—"Not only must the careful impartiality and moderation of a criticism such as yours give it great weight with every unbiased reader, but at the same time any one who is interested in the matter is placed, more at liberty to offer explanation, than with those who, if they are more euphatic and brilliant in their decisions, are less painstaking and reliable. Now you seem to have been measuring our plans with a foot-rule: but this is surely more specious than conclusive; and when you tell us, for instance, that we go beyond the limits of the site, let it be suggested, first, that we had in a great measure to guess at the dimensions of that site from a printed map; secondly, that what is commonly called a sixteenth scale may not by any means bear the test of checking 600 feet by the foot-rule; thirdly, that some people's paper-straining would itself add 20 to 30 feet on this length; and fourthly, that the site itself is obviously capable of extension, practically, both in length and breadth. Moreover, when you speak generally of our 'departures from the instructions,' let it not be forgotten, that so little is this a fault, that in almost every prominent case of architectural competition it will be found that some happy improvement upon the necessarily crude idea of the instructions is the actual test of merit of a high class. If we go into the region of the impracticable, this is another thing; but when, for example, one transforms the site *in toto* for his 'royal way,' when another trespasses upon the Park, as you seem to think, and still another obliterates Downing-street, and so on, all this is honestly and practically done for the best; and if it is to be described as 'clearly in defiance of the instructions,' then we must consider ourselves no longer as men of a noble art in '*grande certamen*,' but as school-boys in petty contest for a pedagogue's prize. Where a man *cheats*, mark him by all means; but where a man is honest, give him the advantage of this principle to the full; that designs must not be criticized like working plans—that they are but the jotting down of general ideas, and must be looked at accordingly—there is a large volume of reconsideration intervenes between the mere project and the perfect work. And while I have pen in hand, let me be bold enough to speak for our good craft at large, and protest against that poor style of criticism which has already been too much listened to, whereby we are made to look like mean tricksters, tripping each other up because we are all so much in want of a hundred pounds or so. Nay, rather I will say, that I speak for almost every one, when I proclaim that we have gone into this contest, not for the sake of

struggling for money or money's worth, but in the happy hope of standing, perhaps at a heavy cost, the last in the list, if it be no more, among those thirty or forty most honourable names which are to form the order of merit in this lordly game—rivals for a day, and peers for ever. Let us take high ground; for there are half-a-hundred of those works of ours, any one of which, twenty years ago, would have made a modest man's fortune; and it is a proud thing for an Englishman to walk up and down our great Old Hall, and think how triumphantly, in all that concerns the mighty craft of the Builder, old England stands upright among the nations."

I beg to thank you for the evidently careful and impartial remarks (though they were not altogether laudatory) which you made upon my designs. It is very gratifying to a competitor to know that the ideas which deprived him of many a night's sleep are understood, and in some measure appreciated, by a competent authority. What I know to be true in my own case, I believe to be true with respect to the others, and, therefore, read with great interest the criticisms as they appear. You said, however, in last week's number, that, if the judges kept by the "instructions," the best designs would not be promoted; this is very much to be regretted, but it is their author's own fault. The "instructions" for designs 2 and 3 are perfectly clear and definite: the sites are distinctly defined, so that those who simply look as much additional space as they wished, *justly excluded their designs from competing*. Again, with reference to shadowing the elevations, the "instructions" say that they are to be "*in line only*," and no honest man, after reading the context, could understand it otherwise than that it meant "*in outline only*;" to say that shadowing *with lines* is permitted is a mere quibble, for it is evidently the same as China ink shadowing. I need only add that the advantages in favour of plans not restricted as to space and elevations, carefully shadowed, are very considerable over those of the competitor who honestly kept by the "instructions." A COMPETITOR.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the ordinary general meeting, held on Monday, the 1st June, 1857, Mr. J. B. Bunning, V.P. in the chair, various donations were announced, and Mr. G. G. Scott, V.P. gave a brief explanation of a set of drawings of Edington Church, Wilts, prepared and exhibited by Mr. Vernon W. Arnold, architect, of which he spoke with much commendation.

The following paper was read:—"Some Remarks on Domes," by Mr. T. H. Lewis, Fellow. Mr. William Wigginton was elected as Fellow.

The closing general meeting will be held on Monday evening, the 15th instant, when the following papers will be read:—"Some Description of the Mechanical Scaffolding used at the new Palace at Westminster, particularly in reference to the three main Towers of the Building," by Mr. Charles Barry, jun. Fellow; and a short notice on Stamped or Incised Stucco, by Mr. B. Ferrey, Fellow.

#### DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.

THE building erected in the City Road for the London Militia, became necessary in consequence of the old head-quarters, at the corner of the artillery-ground in Bunhill-row, having been occupied by the church and parsonage-house; and as the militia had a right to the use of a portion of the artillery-ground for exercise, it was determined to secure the remainder, with a site adjoining, for the depot.

The building is not in any respect a barrack, but consists of eight rooms on the top story for infirmary, &c.; thirty-nine rooms on the second floor for non-commissioned officers and their families; on the first floor, twelve rooms and mess-room for non-commissioned officers, adjutant's quarters, commanding officer's quarters, officers' mess-room, reading-room, washing-rooms, and others.

The ground story contains the guard-rooms, armouries, adjutant's office, waiting-rooms, room for examining recruits, serjeant-major's quarters, and officers' stables.

The basement contains the kitchens, wash-houses, and various conveniences required when the militia is called out for training. The building has three fronts faced with rag and Portland stone—the fourth is of brick.

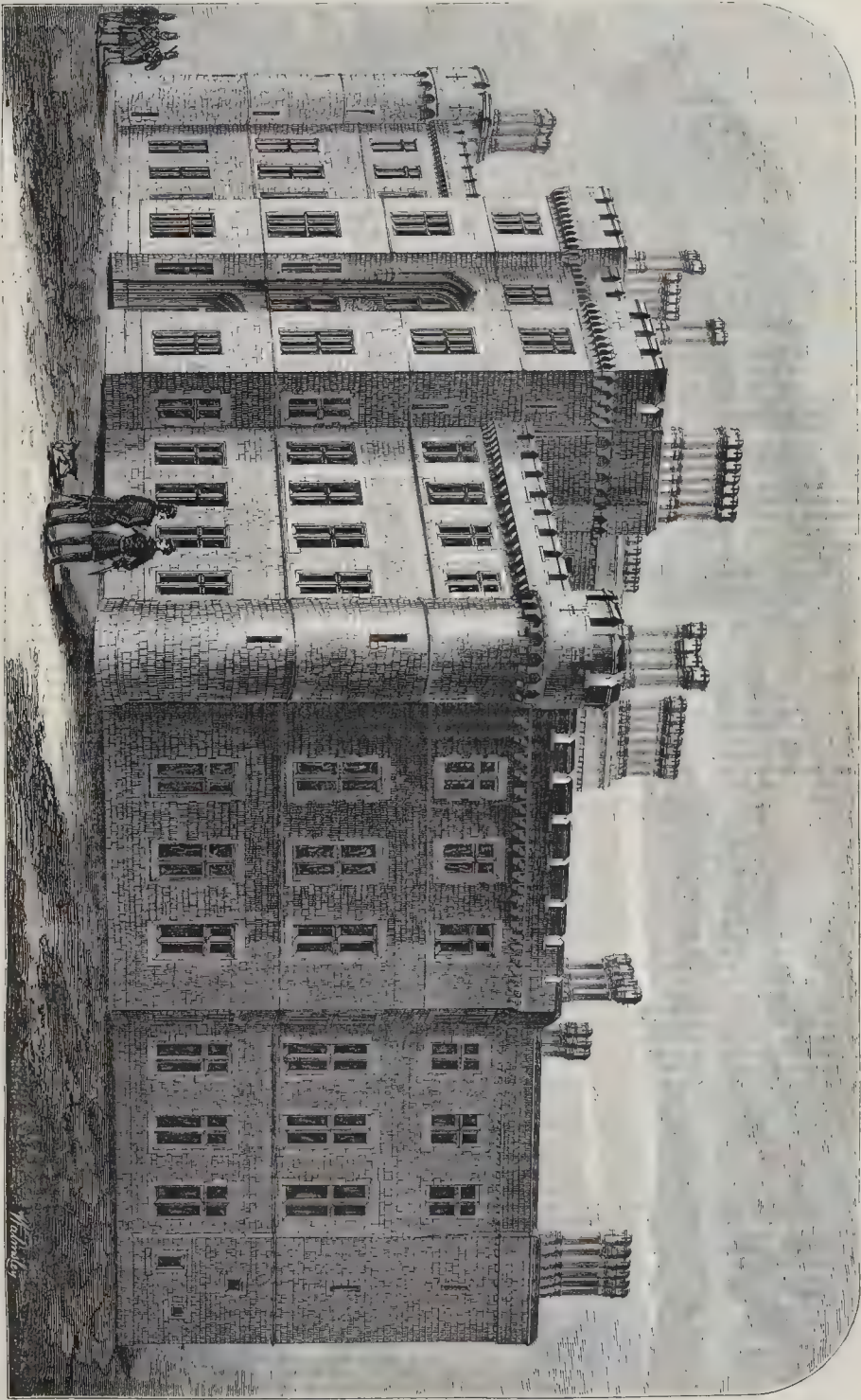
The corporation of the City, as such, have nothing to do with the militia, which is entirely under the management of the commissioners of lieutenantancy, who are appointed by the Crown. The aldermen and deputies are *ex-officio* members of the commission; and the directors of the Bank of England, East-India Company, and South-Sea Company, have always been put on the commission, with such other merchants connected with the city as may be thought desirable.

The depot is paid for by a rate called a trophy-rate, levied by warrant from the Crown, but the men, we are told, are paid by the Crown, and all the arms and ammunition on the premises are the property of the Crown.

The whole of the floors are fire-proof, with iron joists of Fox and Barrett's patent. A contract was entered into with Mr. Jay at the end of November, and as soon as the weather permitted, the work was commenced, and has been carried on with the utmost practicable rapidity. Mr. Jennings is the architect.



DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.—Mr. JENNINGS, ARCHITECT.





## PROVINCIAL NEWS.

**Norwich.**—At a recent committee meeting, the tenders for the new workhouse, according to the plans approved, were opened. They varied in amount from 20,000*l.* to 25,000*l.*, and some were sent in by several Norwich builders and a Lynn firm. The tender of Messrs. Curdiss and Ball being the lowest, the committee agreed to recommend it to be accepted by the general court. The site selected is near the new cemetery.

**Dudley.**—The following tenders for the new schools in King-street, Dudley, Mr. Nichols, architect, have been sent in:—

Beddoe .....	£789	0	0
Harley .....	700	0	0
Cox and Son .....	682	4	0
Holland and Son (accepted) .....	653	13	0

**Shrewsbury.**—The East-India Company have resolved to appropriate the sum of 500*l.* towards the erection of a suitable monument of the great Lord Clive in the town of Shrewsbury.

**Malvern.**—The foundation-stone of the new schools at Malvern was laid on 3rd inst. by Lady Emily Foley, instructed, as a pupil, by the Grand Master Mason of the province, assisted by grand officers of the craft, and in presence of the assembled lodge. The land for the schools, residence, and playground, is three furlongs in extent. Something less than half of the area will be occupied by the buildings and yards; the rest will form an open space in front. The building will be 160 feet from end to end. The plan contains a mixed school in the centre, 83 feet in length by 40 feet in width, the parallelogram broken in upon by two class-rooms, each 18 feet by 14 feet. The west end of the building is occupied by the infant school, which has an area of 55 feet by 28 feet, and a class-room of 18 feet by 14 feet. The school-rooms and class-rooms have open roofs. At the west end are residences for a married couple, as teachers of the mixed school, and for a single person who is to teach the infant school. The mixed school will accommodate 300 scholars, and the infant 200, allowing a square yard of floor to each in the large school, and 7 feet 6 inches to each in the smaller one. The style of the building will be Gothic, with numerous gables, and many breaks in the outline of the walls and roofs. The walls will be of brick, with Bath stone dressings, and the roof of Broseley tiles. Each of the principal windows has a gable above it, and there are ventilating turrets, with octagonal roofs, above the schools, in keeping with the style of the building. The height of the large school is about 26 feet from the floor to the apex of the roof. That of the infant school is about 30 feet. The residences, being two stories high, have a still higher roof than the rest of the edifice. Mr. Davis, of Malvern Wells, is contractor for the building at 2,435*l.* exclusive of boundary-wall. The architect is Mr. E. W. Elmslie, of Malvern.

**Bristol.**—The gentlemen promoting the erection of the new schools at Bristolington, have chosen the designs of Messrs. Pope and Bindon, of Bristol.

**Alcester.**—The Board of Directors of the Alcester new corn-exchange met on 4th inst. to decide upon the plans sent in for their new exchange, when the design by Mr. Edward Holmes was selected. There were twenty-one competitors.

**Rugby.**—The town-hall shareholders have resolved that their directors be empowered to enter into a contract with Mr. Gascoigne to build the town-hall for 3,073*l.*; and that the directors be empowered to expend a sum not exceeding 3,500*l.* in the whole, and to raise the amount by mortgage or otherwise. It was also resolved that a clerk of the works be appointed for the company. The work has already been commenced, but there will be no ceremony at the laying of the foundation stone.

**Horsington.**—The designs for the Horsington schools were furnished by Mr. Henry Hale, of Islington. The schools were erected for 150 children, and comprise a boys' school, 80 feet by 18 feet; girls' school, same size, communicating with large sliding doors. There is a class-room, 20 feet by 12 feet, common to both schools, and separate entrance, with places for caps, bonnets, &c. The cost has been 800*l.* more than half of which has been raised in the parish, the rest obtained by grant from the Council on Education. This sum does not include the value of the site, which was given.

**Newcastle-upon-Tyne.**—The opening of St. Mary's Roman Catholic schools, Newcastle-upon-Tyne, took place on the 1st inst. The ground was given by Mr. Wm. Dunn, and the schools were built from designs by Mr. Archibald Matthias Dunn, of this town, architect. Messrs. Gibson and Howard were the contractors. The schools, when completed, will form an open quadrangle of 150 feet across. The masters' house, containing accommodation for two masters, with a bell-turret attached, occupies the centre; the boys' and girls' schools forming the wings at either

side. In addition to the masters' house, the boys' schools only are completed, consisting of two school-rooms, 80 feet by 18 feet, and 47 feet by 18 feet respectively, opening into one another at right angles, with folding-doors, and two class-rooms attached, each 27 feet by 15 feet, the whole with open timber roof, stained and varnished. The masonry of the building is black walling in irregular courses, from 4-inch to 7-inch, scapelled-faced, and pointed with dark moor tar. The roofs are covered with Welsh slates, and finished with an ornamental ridge designed for the building. The accommodation afforded at present is for 500 boys, and when finished, there will be the same amount of accommodation for the girls. The contract for the new Reformatory School at Netherton has been let to Messrs. Ivison and Walton, of this town.

**Bathgate.**—Plans of the corn-exchange about to be erected in Bathgate are being exhibited in the town. Between two shops, as described in the *Falkirk Herald*, is the entrance to the corn-exchange; above the two shops is a hall, lighted from the front by five windows, and on the top of the building is to be a balcony, with ornamental balustrade. Immediately at the back of the exchange, lighted from the top, is a hall, 52 feet 7 inches in length, by 39 feet in breadth, in which the ordinary business of a market day is to be conducted. At the back of this hall there are six small rooms, and on the right is a grain store. The building is after a design by Mr. A. McGregor, of Edinburgh, architect.

## CHURCH-BUILDING NEWS.

**Ipswich.**—The first stone of a new Congregational chapel in Tackett-street, Ipswich, was laid on 29th ult. It is upon the site of the meeting-house erected in 1720. The contract price of the building is 2,700*l.* Mr. Whight is the builder, and Mr. Frederick Barnes the architect. The style is Decorated.

**Datchet.**—The works in connection with the enlargement of this church have been commenced. Upwards of 1,600*l.* have been promised, but there is still a deficiency of 400*l.* which is guaranteed by Mr. Hall, the vicar, in case it be not made up by subscription.

**Dorchester.**—In St. Peter's Church an antechapel has been built for the organ, which will no longer hide from view the monument of Sir John Williams, of Herringston, in the Herringston aisle. The work has been executed by Mr. Wellspring, under the superintendence of Mr. J. Hicks, architect, both of Dorchester.

**Crich.**—The foundation-stone of the new church about to be built at Westington, in the parish of Crich, has been laid by Mr. Edward Radford, of Tansley-wood, near Matlock. The plans of five architects were sent to the committee, and Messrs. Viockton and Son, of Sheffield, were the successful competitors. The estimated expense is 2,250*l.* of which 1,960*l.* have been already subscribed.

**Walsall.**—The chapels in the centre of the new cemetery, designed by Mr. Clark, the borough surveyor, approach completion, and except the central spire, the material is brick faced with white stone. The design is Early English. The new burial-ground extends to about thirteen acres, eight of which will be appropriated to the Established Church, three to the Dissenters, and the remainder to the Roman Catholics. It is being laid out under the superintendence of Mr. Cole, of the firm of Cole and Sharp, nurserymen.

**Malton.**—The restoration of St. Michael's Church, Malton, has at length begun. Preparations are being made for pulling down the chancel, which is to be entirely rebuilt. The alterations are from plans by Mr. Chantrell. The subscriptions amount to upwards of 900*l.* the estimated cost being 1,000*l.*

## THE NAUTILUS, OR IMPROVED DIVING-BELL.

On Tuesday there was a large muster of the scientific world at the Victoria Docks for the purpose of witnessing some experiments as to the capabilities of this new and effective machine, and which were of a most satisfactory nature, as showing the complete control under which it would be in submarine works, and that, too, at the will of the person descending, the whole of the ascending and descending power being regulated from within, and not as in the old diving-bell, dependent on the persons left on the surface, the agents being, of course, air and the water. Apart from this great desideratum and safeguard from accident by interrupted communication, the machine also serves the purpose of its own crane, the suspending power of the one operated with, about 10 feet in diameter, being equal to 7 tons, so that guide-ropes being in the first place fixed, a block of stone may be taken down, directed over its proper bed, and placed in the position required under the one operation. At the *déjeuner*, Mr. Robert Stephenson, M.P. bore willing

testimony to the theoretical value of the invention, and to the perfectness with which it had been carried out, while Mr. Bidder, the engineer to the docks, stated his entire satisfaction, practically, some work having been accomplished through its agency in a space of two days and two hours, that would have taken, under the old system, more than three weeks. Among those who took notice of the experiments were Messrs. Locke, M.P., Vignolles, C. Manby, Scott Russell, John Leslie, Sir S. M. Peto, &c.

## THE MANBY TESTIMONIAL.

The members of the Institution of Civil Engineers had, for some time, entertained the intention of acknowledging the services of Mr. Charles Manby, as their paid secretary during eighteen years; and advantage was taken of the opportunity of his retiring from that post to carry this intention into effect. A committee was accordingly formed, and in a very short period upwards of 2,000*l.* were subscribed, with which it was determined to purchase a fitting testimonial and to present the balance in cash. The ceremony of presentation took place in the theatre of the Institution, on Saturday, 23rd May, in the presence of a large assemblage of the members and of Mr. Manby's private friends.

Mr. Robert Stephenson, M.P. the president of the Institution, took the chair, and Mr. Bidder, as treasurer of the fund, explained that, owing to the eagerness with which their call was responded to, the duties of the committee had been comparatively light. The amounts subscribed varied from half-a-guinea to 100*l.*; and up to the present time there had been received 2,019*l.* 10*s.* from 417 subscribers, of whom 358 were members of the Institution, and 59 were the private friends of Mr. Manby; but as many more subscriptions had been announced, the accounts would not be finally closed until the publication of the list of the contributors to the testimonial.

The testimonial consisted of a timepiece and a pair of candelabra supplied by Messrs. Howell and James, and the sum of 2,000*l.*

Mr. Manby, in thanking the subscribers, asked as a favour to be permitted to devote a portion of the amount of the testimonial to establishing an annual premium which should bear his name. The engineers, he added, were the only professional body not possessing some kind of a mutual aid society. Would it not be possible to originate some plan for this doing good? His time and means might be freely commanded, and he should feel happy in devoting to such an object a further portion of that which had been so generously placed at his disposal.

Amongst the speakers at the meeting, besides Mr. Stephenson and Mr. Bidder, were Mr. Locke, M.P., Mr. Field, Mr. Forrest, Mr. Glynn, and Mr. Scott Russell, which last gentleman incidentally stated that three-fourths of the 700,000*l.* of shares in the *Great Eastern* ship undertaking were held by members and associates of the Institution of Civil Engineers, —a fact which spoke volumes for the safety of the structure.

## THE VICTORIA MILITARY HOSPITAL, NETLEY.

If the statements made both in the House of Commons and the public prints be correct, others have now discovered, somewhat late, the fatal errors in the plan of the Victoria Hospital, which were pointed out by us, unwillingly, but with a strong sense of duty, in the autumn of last year, when we published a view and plan of the proposed building.

We referred to mistakes which had been made, especially "to the placing of the baths and the latrines together, and the position of the latter between sick wards," and maintained that, "should the proposed arrangement be carried out, whenever this hospital shall be full of patients, more disease will be generated there than cured."

What do we hear now? In the course of a debate in the House of Commons last week, Mr. Stafford affirmed that the building was "being constructed in defiance of all those sanitary precautions which our bitter experience in the Crimea ought to have taught us." And in the *British Medical Journal*, of the 30th of May, we find it stated that, "This imposing building, calculated to hold one thousand patients, having just emerged from the ground to a sufficient height to show its outlines, and having absorbed 70,000*l.* of public money, is stopped by order of Government, and now stands in the open day a conspicuous engineering blunder, calculated 'to point a moral and adorn a tale' to all those who believe in the efficiency of our army medical government."

The writer repeats our assertion almost in our own words, that "the Netley Hospital as at present devised will kill more patients than it will ever cure." We have shown that hitherto all our hospital wards



have been treated as though they were mere sleeping-rooms; and as if the usual means of ventilation necessary to remove air simply rendered impure by healthy respiration were sufficient to change the hospital atmosphere charged with the thousand impurities which are given off from the bodies of sick patients. "In order to keep the air of sick apartments sweet, two things must be attended to: in the first place, each ward should be thoroughly ventilated in itself by means of open fireplaces, opposite windows running to the top of the room: secondly, each ward should be entirely separated from its neighbours. The interior of a hospital should be treated, with respect to atmosphere, as an iron ship is with respect to water—so divided into compartments that the element, when deleterious, may be confined within its own bounds, and not allowed to bring destruction into adjoining ones. On this plan the great Military Hospital at Bordeaux [of which we gave an engraving] was constructed, some thirty years ago; and on this beautiful plan nearly all similar establishments have been erected in France, and even in Belgium."

"If any man wishes to ascertain for himself the errors that have been committed at Netley, he has only to consult the plan. All the wards communicate with one common corridor, which will serve as a pipe to conduct the contaminated atmosphere of one ward to the comparatively pure air of its neighbour. It would seem that this vital error was not sufficient: the latrines also communicate with the wards; hence we have a double source by which an 'hospital atmosphere' is provided for."

Returns in connection with this structure have been moved for in the House of Commons, so that we may hope before long to learn the exact state of affairs. The returns should include a plan of the building as now determined on.

#### LONDON BURIAL-GROUNDS.

THE TOTTENHAM-COURT-ROAD CHAPEL GRAVEYARD. In the Rolls Court on June 5th, judgment was given in the case of Moreland v. Richardson. The plaintiffs claimed to be entitled through their ancestors (who purchased it more than twenty years ago) to the right of burial in the graveyard. It appeared that the trustees or deacons of the chapel have, since the passing of the Act for the closing of the London graveyards, removed the tombstones from the graves of the plaintiffs' ancestors. This was thought by the plaintiff an unwarrantable insult to the memory of the deceased relatives, and an injunction was obtained to restrain the proceedings of the deacons or trustees of the chapel in this respect, and the present motion was that such injunction should be made perpetual. The Master of the Rolls held that it had been established, to his entire satisfaction, that the defendants had improperly interfered with the rights of the plaintiffs in the burial-ground in question, which the Secretary of State had made no objection to, or in any way interfered with. After a very careful attention to the facts and arguments on both sides, that was the conclusion he had arrived at. The injunction would therefore be made perpetual, to restrain the defendants from interfering with the burial rights of the plaintiffs or any members of their families in this churchyard, which was not objected to under the Act by her Majesty's Secretary of State. It will be seen by the above statement that it is illegal for the managers of graveyards to remove the monuments, and also that, in such burial-grounds as have not been formally closed by order of the Secretary of State, parties having claim to ground can demand the reopening of the graves for fresh interments. This is a matter which requires the careful consideration of the Government authorities, for the reopening of graveyards as thickly occupied as that in Tottenham-court-road might cause much mischief. We are glad, however, of this acknowledgement of the right to preserve the monuments, and hope that those interested will, in case of necessity, interfere and prevent such cases of spoliation as we have been obliged to notice.

#### THE TRUE BASIS OF SANITARY PRINCIPLES.

In your last number you have introduced what is there called a "Sanitary Fact." Let this be rightly understood. Your publication is not the arena for the discussion of medical questions; yet, in the construction of public hospitals, a knowledge of the value of ventilation is highly important, as well as the arrangement of a perfect system of sewers. In these all-important points we shall not attempt to dictate to the ingenuity and skill of the architect: we shall only point out one or two facts, which will be useful, as proving the necessity of a careful consideration of ventilation and sewerage.

Fever hospitals are an error in principle, and tend to encourage prejudices: they accumulate a number

of diseased subjects together, which vitiates the atmosphere, and causes a serious disadvantage to the sick. The writer of this has been nearly thirty years a physician to the largest provincial public hospital in the kingdom, where all cases of typhus fever are placed indiscriminately among the other patients in beds only 2 feet apart, yet no instance has ever been known in the course of a whole century of the disease affecting the next person, who has been constantly living and sleeping within 2 feet of the typhus disease. This is purely the effect of ventilation and cleanliness. A few words more of explanation will show the truth of this fact,—typhus fever is produced by a malarial and not from contagion. The respiration of air contaminated by the admixture of gases which are produced from the decomposition of vegetable matters causes ague or typhus fever (diseases which often pass from one to the other): when the respired air is contaminated with the gases which result from the decomposition of animal matters, it causes a violent diarrhoea. The mucous surface of the air passages is as susceptible of being poisoned as is the mucous surface of the stomach. Those fevers termed gastric are a distinct class of diseases. A gastric fever is nothing more than an inflammatory state of the lining surface of the bowels, which is disposed to run into a state of ulceration or sloughing. This form of disease is easily cured by those who understand it.

When the air is intermixed with foreign matter, it becomes specifically heavier than pure air, and will, therefore, gravitate to the lowest situations, and will stagnate in a hole like water. The ventilation of all low and confined places becomes proportionately difficult, and requires skill and practical experience to expel the heavy vitiated atmosphere.

The philosophy of organization ought to be cultivated as a part of polite education by all well-educated men: it would be productive of great benefit to the community, and would dissipate much of the prejudices and follies of mankind. W.

#### THE HANDEL FESTIVAL AT THE CRYSTAL PALACE.

THIS musical congress, the greatest ever yet assembled, will take place on Friday in next week, and owes its existence to the anxiety of the Sacred Harmonic Society of London to promote by their example the commemoration, in 1859, of the Centenary of Handel's death in such a manner as would be alike worthy of the Great Master and of the widely-diffused musical knowledge of the present day.\* In carrying out this object, it was found that the central transept of the Crystal Palace offered a locale for this display far beyond any other existing building. The space appropriated to the orchestra alone occupies a clear area of 168 feet in width by 90 feet in depth. This extent exceeds the entire capacity of any other music-hall in this country, and has the additional advantage of great height and of ample means of approach and for general arrangements. The orchestra, which has been constructed in a somewhat flattened curve, rises from the floor at a front elevation of 8 feet, and is from thence continued in a series of semi-circular steps, varying from 10 to 15 inches each, to a total height of 47 feet. These rises are thirty-four in number, of which eleven are appropriated to the band, and the remaining twenty-three to the chorus. The band consists of 385 performers in all, who are arranged at 202 desks. The chorus, originally intended to consist of 2,000 voices, slightly exceeds that number. The entire orchestra, therefore, is, as near as possible, 2,500. The great organ, erected by Messrs. Gray and Davison, of New-road, is itself an unprecedented construction. In the centre, between the organ and the band, the large drum made by Mr. Distin for the Festival, will be a conspicuous object. It is between 6 and 7 feet in diameter, and, when gently struck, produces a tone resembling the booming of a deep pedal-pipe. We need hardly claim for this festival the support of all lovers of music throughout the country.

#### CHISWICK GARDENS.

The *file* at these justly celebrated gardens last week was more what such a meeting ought to be than any one which has yet been given, either there or elsewhere.

An addition—and a most useful one—to the display of marvellous flowers and magnificent fruit was made in the exhibition of horticultural implements and appliances; and we were glad to see that many ladies, as well as members of the more agricultural sex, appeared interested in it. Several conservatories were temporarily erected, and filled with plants, to show the effect when complete, and the price of

\* An account of the intended Festival has been published in the form of a Letter, addressed to the members, subscribers, and assistants of the Sacred Harmonic Society. A lithographed plan of the orchestra has also been published.

each was given; a commendable practice that will lead to the extension of artificial cultivation.

We noted several marked improvements in construction, produced by a judicious combination of iron and wood, by which greenhouses are rendered much lighter and more elegant in appearance, than of old.

One method of opening and closing all the sashes simultaneously by means of a lever was also worthy of observation: this system might, perhaps, be applied with advantage to schools, hospitals, and churches.

On the green sward, several tents were pitched, offering useful suggestions for future necessities: the umbrella-tent, especially, seemed to combine the desirable qualities of being portable, spacious, and secure.

With regard to the flowers, too much cannot be said; they were beyond and above praise. The mode adopted in one tent, of breaking the too gorgeous line of brilliant colours by a bed of sober dark-green exotic plants and ferns, gave great relief to the eye, and should, on physical grounds, be more frequently adopted.

It struck us that the too extensive aggregation of bright colours, without an occasional rest—so to speak—of cool, green foliage, does great injustice to many of the marvellous blooms with which most of the plants were literally covered.

The heavy showers which drenched the London streets on that day, fortunately did not extend to Chiswick; and though the low temperature had induced many of the ladies to discard their light summer dresses for richer and warmer costumes, the toilettes were elegant and appropriate, and did no dishonour to the perfection that pervaded the gardens.

One thing only we missed—the delicious perfume that, of old, the recently-mown grass used always to exhale: but perhaps, on account of the previous dry weather, the grass was too short to cut, though the multitudinous daisies would have been better away. However, that is a trifle only worth mentioning to show how perfect was everything, when this was all with which fault could be found; and we most heartily wish success may attend the renewed exertions of the Horticultural Committee.

Admire as we may the beauties of Sydenham, and luxuriate in the proximity to London of the Botanic Gardens, we must ever remember with gratitude, that to Chiswick and its enterprising managers and originators we are indebted as being the pioneers in the once difficult path of horticultural importation and development, in which so many followers now tread with ease, thanks to their previous exertions.

#### THE COMPETITION DESIGNS FOR LONDON-DERRY BRIDGE.

SIR.—The following questions are being very generally asked, among the members of the profession of civil engineers, with reference to the late competition for designs for this bridge.

Is it true that Sir William Cubitt gave himself very little trouble about the matter, and handed over the examination of the designs to a gentleman who, however respectable as a mechanical engineer, has neither knowledge nor experience as a civil engineer?

Is it true that the first prize was awarded to Sir William Cubitt's drawing-clerk?

Is it true that the same gentleman who has obtained the first prize was employed some years since by Mr. Charles May, of the Permanent Way Company, to make a design for Londonderry Bridge, which design of Mr. Charles May resembled closely in its leading features that to which the first prize was awarded in the late competition?

Is it true that the holder of the first prize having, through Sir William Cubitt's influence, obtained an appointment in India, Mr. Peter William Barlow, of the Permanent Way Company, has been selected to make a design, under Sir William Cubitt's directions, to the exclusion of all the other competitors?

Is it true that Mr. Peter W. Barlow brought forward the design that he has prepared, at a recent meeting of the Institution of Civil Engineers, and that the principle of the design was condemned by the first authorities in the profession?

Is it true that this design is, notwithstanding its defects, being forced on the bridge commissioners on the plea of economy, though the estimate has never been submitted to any proof?

Is it true that a large number of gentlemen were induced to compete for the premiums offered by the Commissioners, on the faith of the terms named in the advertisement for designs, and from confidence in the high character of Sir William Cubitt, who was appointed umpire, and that these gentlemen now complain, with reason, that the statements made in the advertisement have not been adhered to, and that what was called a public competition has been perverted to the private advantage of a few individuals?

C. E.



## RECENT PATENTS.\*

STEWART, R.—*Improvements in Cutting Stone and other Mineral Substances*. Dated July 25, 1856 (No. 1,769).—A sole or bed is laid down, and a carriage carrying the cutting tools traverses upon rails upon the sole or bed, being supported upon wheels, toothed to gear into racks upon the rails or sole. The cutting tools are arranged in a line one behind the other, and each tool is fitted into a socket in the lower end of a vertical or slightly inclined bar, capable of sliding easily in guides attached to the carriage framing. The cutting action is made to take place by raising and letting fall this bar. The bar is lifted by a socket piece embracing it, and which has jointed to its inner side a short lever or eccentric piece, which grips the tool bar when the lifting action takes place, taking hold of it higher up as the cut gradually deepens.

CHIPP, T. J. and R. BITHEAD.—*Improved Apparatus for Drilling and Boring*. Dated August 22, 1856. (No. 1,959).—The patentee describes an apparatus designed as a substitute for the clamp and weighted beam or lever usually employed to support the upper end or centre of the brace or boring bar in drilling or boring by hand, but it requires engravings to illustrate it clearly.

HOLGROVE, G. and P. JOHNSON.—*Improvements in the Manufacture of Cement, and in the Application of a known Material to Cementing Purposes*. Dated July 31, 1856. (No. 1,805).—This consists in manufacturing cement of sulphur combined with sand, gypsum, &c.; also, in the application of sulphur alone for cementing the joints of stones, or as a general substitute for cement.

MEMONS, M. A. F.—*A New Composition, applicable to the Coating or Covering of Metallic and Non-metallic Surfaces*. (A communication). Dated August 25, 1856. (No. 1,976).—This consists of a composition applicable to the coating of walls, partitions, steam-boilers, &c. The patentee takes argillaceous clays of different kinds, and containing alumina. These clays are kneaded with water, and to the mass he adds in succession to 100 parts of clay, oily substances, or residues, 6 parts; oil sediment, 6 parts; fat, 2 parts; animal charcoal, 2 parts; vegetable charcoal, 2 parts; mucilaginous substances, such as glue, &c. 1 part; wood saw-dust, or ground wood, already employed in the purification of oils, or in drying processes, 10 parts; waste hair, well beaten, 4 parts. To this he adds a decoction of logwood, together with nitrate of iron (to deepen the colour), together with a small proportion of soap. The whole is thoroughly mixed and brought to the consistence required.

FERRY, BENJAMIN, Trinity-place, Charing-cross.—*Producing Ornamental Plastering or Stucco Work*. Dated Oct. 27, 1856. (No. 2515).—This invention consists in so performing such work that indented or impressed ornamental patterns are obtained on the surfaces as the plastering proceeds, and whilst the materials are still sufficiently plastic to admit of the desired impressions or indentations being made. For this purpose ornamental pattern-plates are formed with the pattern cut through them, similar to stencil-plates, but sufficiently strong to admit of their being pressed into the finishing coating of plaster. The edges of the pattern are inclined.

BRODIE, WILLIAM, Belhaven.—*Roofing Tiles*. Dated October 27, 1856. (No. 2524).—In making roofing tiles according to this improved system, the clay or other plastic material is suitably prepared in a pug-mill or other apparatus, from which it is made to extrude through a die of a horse-shoe form. The issuing horse-shoe-shaped stream of clay is cut into lengths by any suitable apparatus, such as is used in drain-tile machines, the lengths so cut forming blanks to be subsequently moulded in the finished roofing tile. The finishing operation is effected by means of a frame arranged to turn or swivel upon a vertical axis, and fitted with two mould plates at diametrically opposite points.

GEFREY, WILLIAM, Glasgow.—*Apparatus for Saving or Cutting Wood*.—Dated Oct. 17, 1856. (No. 2429).—This invention relates to an arrangement of traversing circular saw for cross-cutting timber with rapidity and accuracy, as well as to a contrivance of a saw-table or bench for insuring accuracy of cut. The driving connections for the traversing circular saw are wholly of the belt pulley kind. The sawing table, as fitted up for a stationary circular saw, has upon it a horizontal slide piece set in a recess running in a line parallel with the saw's disc. The further end of this slide has a graduated ledge piece upon it, set accurately square, so that when the operator has to saw a board, he presses one square end against this ledge, and the slide is then traversed forward to bring the wood into cut in an accurately straight line. A counterweight is attached to the end of the slide, so that it returns to its original position in readiness for the succeeding cut.

\* Selected from the lists published in the *Mechanics Magazine, Engineer, &c.*

MCDOWALL, JOHN, Johnstone, Renfrewshire.—*Saving or Cutting Wood*. Dated Oct. 17, 1856. (No. 2430).—This invention relates both to plain straight cut sawing, and to differential sawing for curved work, such as ships' timbers. As regards straight cutting, the apparatus employed according to this invention consists of a contrivance whereby a series of saw-frames may be simultaneously worked from one single prime mover, whilst provision is made for the occasional disconnection of any one frame without disturbing the action of the rest.

## FALL OF THE NEW (R. C.) CATHEDRAL AT PLYMOUTH.

A large building, exceeding in size most of the churches recently erected in this neighbourhood, and intended as a Roman Catholic cathedral, has been of late in course of construction at the corner of the road leading from Eldad, into Cecil-street. It had so far advanced as to enable the architect, Mr. Hansom, of Bristol, to fix the 4th of August next as the period for its consecration. The edifice was completely roofed in, and the interior fittings were being proceeded with, but on the 3rd inst. an accident occurred which will occasion both delay and expense. The church was formed with side aisles, and from one end to the other the roof, which was an extremely lofty one, was supported by arches which sprang from pillars. These pillars were formed of Bath stone, and the arches springing from them were of brick. On Tuesday in last week some defects were observed by Mr. Roberts, the builder, in the southern arch of the nave, which caused him to telegraph for the architect to come down immediately. That gentleman at once left for Plymouth, and on Wednesday morning he inspected the building, which he found in a very unsafe condition, so much so as to render immediate steps necessary to secure it from falling. The Bath stone it appeared had proved too weak for the weight which it had to sustain, and some of it had split, and was thus endangering the whole structure. A number of men were set to work to shore up the arches of the nave, previously to removing the defective work, which was found to be immediately over the piers, and consisted of brickwork and limestone. Before the measures for shoring up could be matured, the architect observed indication that the edifice was falling. He at once warned the workmen to leave, which they did, and before he was enabled himself to get entirely free the southern arches of the nave and the large eastern arch fell, bringing down with them the southern clerestory. A small portion of the nave roof only remained; but a farther fall took place on the following day. It is impossible at present to say what will be the ultimate cost. The damage done by the first fall has been widely estimated from 400l. to 1,000l.

## GAS.

At the fifth annual meeting of the Satton-in-Ashfield Gas Company, a dividend of 7½ per cent. per annum, free of income-tax, was declared. The growing demand for gas having rendered it necessary to extend the works, 100 new shares have been created.—The price of gas in Warrington (5s. per 1,000 feet) is considered to be unreasonably high, and its illuminating power not even good at that price. The gas company thinking themselves safe from competition, have not hitherto made any signs of concession to the popular demand for both cheapness and goodness. The board of guardians have taken the matter up, and several firms are talking of making their own gas.—Capt. Thos. Cook, F.R.S. has invented an improved lamp, and apparatus connected therewith, for lighting coal mines with gas. The principal feature in the invention appears to be the forcing of air from the surface through the lamp. He proposes reflectors to throw the light into the intricate workings of the mine.—Mr. S. Nibbs, of Soho, Birmingham, the inventor of "the People's Lamp," has produced a new "safety lamp."—Mr. Wm. Gossage, of Widnes, proposes the separation of the hydrosulphuret of ammonia and sulphuretted hydrogen from coal gas, by employing sulphuric acid, and therewith converting the hydrosulphuret of ammonia into sulphate of ammonia, and decomposing the sulphuretted hydrogen, so obtaining two valuable products—sulphur and sulphate of ammonia, and depriving the gas of its injurious sulphur compounds.—"Recently," says an American paper, "successful experiments have been made in the manufacture of illuminating gas from wood. A patent was first applied for in America, in 1853, by a German chemist, the assignees of the discoverer, Emil Briesach. Under this patent different gasworks have been erected in that country, and with satisfactory results. Where wood is cheap, it is believed this gaseous product will be cheap. The residuum consists of charcoal and tar, and creosote and pyro-

lignous acid may also be obtained. Different kinds of wood may be used for this purpose. One cord of ordinary pine wood of 128 cubic feet produces gas-light equal to 800lb. of spermaceti candles; one cord of oak or maple of good quality will yield gas-light equal to 900lb. of spermaceti candles. This estimate is upon wood used without a careful drying."

## ANGLO-ROMANO GAS COMPANY.

The dividend declared at the recent half-yearly meeting of this company was at the rate of 5 per cent. for the past half-year. The progress of the works has been very successful since the declaration of the last dividend. The company was established in Rome, under statutes, in 1852, and its working operations have given unimpaired satisfaction. We may remind our readers that Rome was first lighted with gas, January 1, 1854. The works are erected upon the site of the Circus Maximus, rendered memorable as the scene where the Sabine women were carried off by the Romans. They are constructed of a capacity to furnish from 170,000 to 200,000 cubic feet of gas per twenty-four hours, with two gas-holders of 65,000 cubic feet each, and are situated within 200 yards of the Tiber. All the leading streets of Rome are lighted, and the company are extending their pipes to the streets adjacent to the principal mains. The courts of the Vatican are brilliantly illuminated (the Pope having liberally supported the company since its formation), and the Grand Square of St. Peter's, the Quirinal, the palaces of the nobility, the chief hotels, and other public establishments. The social and moral effects of this change are felt by all classes.

Mr. Shepherd, the géant and engineer, has been honoured with frequent marks of approbation from his Holiness, who has on several occasions visited and inspected the works, and expressed his desire for their success. Mr. Shepherd had earned celebrity in his profession before visiting Rome, having erected the gas works at the Hague, Cadix, Bologna, Modena, and other places.

## PROPOSED TOLL ON THE WAY TO "THE PEOPLE'S PARK," AT BAITERSEA.

The announcement made on the part of the Government, that they intend to set up a bar on Chelsea new bridge, and to charge a poll-tax on every man, woman, and child either going to or coming from Battersea-park across that bridge, is exciting no little ferment amongst the pent-up crowded denizens of the back streets in Chelsea, Brompton, Pimlico, and surrounding districts. That so bad an example should be set by the Government, at a time when metropolitan toll-bars have become an intolerable nuisance and abomination in the eyes of thousands even of those far better able to bear such taxes than those poorest of the poor with whom Chelsea and its vicinity are well known to be crowded, is much to be deplored. And this, too, all the more, that the very same end, namely, the redemption of the cost of erecting the bridge in question, could obviously be effected by a process the very reverse of the obnoxious one which the Government appear to think requisite; inasmuch as a free way to and from the building sites which surround the new park, and which belong to the Government, would enhance the value of the property, and promote its speedy conversion into an equally efficient and much less obnoxious means of redeeming all cost in the course of time. A movement is being made for the purpose of urging on Government the propriety of giving up all idea of taxing the public health as contemplated; and an energetic address, which cannot but meet with the cordial concurrence of all disinterested persons, is now being widely distributed by the committee who have taken up the cause of the public on this question. The address is signed by Mr. Walter T. Jones, of 93, Cambridge-street, Warwick-square, as hon. secretary, to whom all communications and subscriptions in aid of the very desirable object in view may be addressed.

## Books Received.

*Memorials, Scientific and Literary, of Andrew Crosse, the Electrician*. London: Longman and Co. 1857.

No one who can recall, with scientific interest, the chief topics of discussion in science some twenty years ago, will need much refreshment of memory in respect to Crosse, Flint, and Acari,—an indissoluble association of curious subjects which then startled the whole world of science. For behoof of many whose memories as to that epoch may relate much rather to pedagogues, marbles, and poll-scrubbings, than to anything so uninteresting and unintelligible, we may here note down a few words of explanation. At the meeting of the "British Association," in 1836,



the grand feature of interest to the *scans*, and which eclipsed all else for the time, was the sudden blaze of a scientific comet, in the form of A. Crosse, a great electrician, of whom scarcely any one had ever heard before, although he had long experimented with the electricity of the atmosphere and the thunder cloud upon a scale of grandeur totally unprecedented, and had succeeded in imitating many of nature's processes of mineralization and crystallization, in a way that had scarcely ever been thought of, far less attempted. The excitement and belief with which the solitary electrician thus made his reluctant *début* in the scientific world, had scarcely time to cool and settle down a little, when a still more intense interest and excitement arose on the announcement that Mr. Crosse, in course of an experiment undertaken for the purpose of crystallizing silic by means of long-continued electric action of low intensity, had, to his own astonishment, produced, in place of quartz crystals, something exceedingly like insect life, in the midst of caustic solutions of flint, and with the exclusion of atmospheric air. That the product consisted of true acari or mites of some description, there could at length be no doubt, but how they came there, or how they were produced, remained a mystery, as we believe they still do to this day, notwithstanding Ehrenberg's scarcely less curious and interesting microscopic discovery, that the chalk with which flint is generally found covered, consists of myriads of the shells of microscopic insects. How the ova of any insect, however, that might be supposed to exist in flint itself, could withstand the heat applied by Crosse in calcination while producing the "oil of flints," or solution of silicate of potash, with which his experiments were performed, and could afterwards be developed into the perfect insect by electric action, under such circumstances as those indicated, was almost as astonishing as the creation of animal life itself. Absolute creation, Crosse warmly disclaimed, as indeed he did all hypothesis or theory whatever on the subject: all he did was to announce and to stand by the fact. Yet he speaks of the acari in such a way as to show to some extent his inner mind on the strange subject, as in his letter to Harriet Martineau at the time of his discovery. "There is a considerable similitude," he remarks, "between the first stages of the birth of acari and of certain mineral crystallizations electrically produced. In many of them, more especially in the formation of sulphate of lime or sulphate of strontia, its commencement is denoted by a whitish speck: so it is in birth of the acarus. This mineral speck enlarges and elongates vertically: so it does with the acarus. Then the mineral throws out whitish filaments: so does the acarus speck. So far it is difficult to detect the difference between the incipient mineral and the animal; but, as these filaments become more definite in each, in the mineral they become rigid, shining, transparent, six-sided prisms: in the animal they are soft, and having filaments, and finally endowed with motion and life."

The present volume has been written by Cornelia A. H. Crosse, as a labour of love and reverence towards her deceased husband; and, without much literary pretension, it is replete with interest. Mr. Crosse was a poet of no despicable ability, as well as a man of science; and the volume is interspersed with not a few of his poetical effusions, as well as of his prose productions; which latter, however, are chiefly in the form of notes and letters.

### Miscellaneous.

**NEW SOLDERING TOOLS.**—Messrs. Whitehouse and Laws have invented an improved construction of tools for soldering metals, whereby they are kept constantly heated in a simple manner. The "bitt" or soldering end of the tool, is heated by a jet of gas, placed either inside or externally to the "bitt," the gas for supplying such jet being brought to the soldering tool by means of a flexible tube. One mode of effecting this object is by conveying the gas through a tube in the handle of the tool.

**THE VISITORS TO THE MANCHESTER EXHIBITION.**—The following shows the daily attendance at the Exhibition during the first month it has been open:—

Tuesday .....	May 5	12,000	Thursday .....	May 21	7,102
Wednesday .....	6	6,195	Friday .....	22	6,168
Thursday .....	7	6,771	Saturday .....	23	7,891
Friday .....	8	6,332			
Saturday .....	9	6,932	Monday .....	25	4,918
			Tuesday .....	26	8,675
Monday .....	11	3,337	Wednesday .....	27	9,333
Tuesday .....	12	3,257	Thursday .....	28	8,677
Wednesday .....	13	4,767	Friday .....	29	6,312
Thursday .....	14	8,180	Saturday .....	30	9,702
Friday .....	15	5,584			
Saturday .....	16	7,810	Monday .....	June 1	9,514
			Tuesday .....	2	20,398
Monday .....	18	4,399	Wednesday .....	3	7,897
Tuesday .....	19	5,201	Thursday .....	4	5,693
Wednesday .....	20	5,831	Friday .....	5	6,111

The total number of visitors since the opening has been nearly 200,000.

**PRINTERS' ALMSHOUSES (WOOD-GREEN, MIDDLESEX).**—The annual meeting of the subscribers and friends to this institution was held on Tuesday evening, at Adderton's Hotel, Fleet-street; Chas. Wyman, Esq. in the chair. From the report, it appeared that a large measure of support had been awarded to the society during the past year, in the course of which it will be remembered the Asylum was publicly inaugurated by the President, Earl Stanhope, when a public breakfast took place on the grounds, which was largely patronized. The receipts during the year were 1,257*l.* 10*s.* 7*d.* and the expenditure, including 400*l.* invested in the public funds, amounted to 1,145*l.* 1*s.* 7*d.* leaving a balance at the bankers' of 111*l.* 16*s.* The report having been received and ordered to be printed, Mr. William Clowes was appointed vice-president of the institution; Mr. Vincent Figgins, treasurer; and Messrs. W. H. Cox, T. R. Harrison, H. Hansard, and W. Rivington, the trustees; and after votes of thanks to the secretary and chairman, the meeting separated. Prior to the annual meeting, a second election of inmates took place by ballot, the close of which showed the following as the successful candidates: Robert Hall (aged 78, married); George Conway (aged 67, married); Anne Roe (63, widow). The anniversary of the opening of the institution will be celebrated by a *soirée* on Monday, June 15, at Highbury-barn; and on Sunday morning, June 28, the Vicar of Tottenham will advocate the claims of the Institution at St. Michael's Church, Wood-green.

**IRON BUILDING, MANCHESTER.**—A building has been put up recently near the Art Treasures Exhibition, which has excited some attention, in consequence of the rapidity with which it was done. It has been built at a cost of about 400*l.* by Messrs. E. T. Bellhouse and Co. for Mr. Ogden, of Long Millgate, Manchester, for the purpose of receiving a valuable collection of paintings, antiquities, and curiosities, which that gentleman wishes to bring under the notice of the visitors of the Art Treasures Exhibition. The building consists of a cellar and upper room, and is 65 feet long, and 32 feet wide: the cellar is 8 feet high, and the walls thereof are of brick: the upper room is 15 feet high to the eaves, and the roof is raised so as to give sloping and perpendicular glazed lights; thus leaving the whole of the wall space free for pictures and other objects. The shell of the upper portion of the building, above the floor, is composed of corrugated iron sheets, attached to pillars and roof principals. The interior of all the wall is lined with boarding, upon which are paper and maroon-coloured calico cloth. Thirteen working days only elapsed between laying the first brick and the completion of the building; and this short time includes the manufacture of the materials as well as the complete erection of the same. The building is of very creditable external appearance; and when it has served its present purpose as a fine art gallery, it may be made valuable to the neighbourhood by being devoted to the purposes of public worship, education, or lecturing, as might be required in this increasing district.

**ADDITION TO THE MUSEUM AT PEEL'S PARK, MANCHESTER.**—The new wing, added since last year, is now complete. It consists of one large room, on the ground-floor, divided into two compartments, and, over it, a gallery, 80 feet long by 30 feet wide, which is now filled with the works of local artists. There is also an entrance from the park on the south side. Leading from the southern door to the main staircase, is a corridor, with fluted pillars, the ceiling of which is being painted in fresco. A small portion only of this work has been completed, but the local *Courier* speaks favourably of it. The room leading from the corridor is called the engraving-room, and contains all the engravings previously in the old gallery, with additions. Among its contents, also, are numerous architectural models, and several pieces of sculpture by Mr. Westmacott. The semi-division of the room gives additional wall-space for the purposes of exhibition. There is another room in the new wing, underneath the engraving-room, but it is not yet completed. It is intended to be used as a geological and model-room.

**COMPLETION OF THE LOUVRE AT PARIS.**—On 15th August, the anniversary of the Fête Napoleon, the Emperor, the Empress, and the grand dignitaries of the empire will attend a solemn inauguration of the Palais of the Louvre, which will then be entirely finished.

**THE VIVIAN MEMORIAL, SWANSEA.**—The memorial in honour of the late John Henry Vivian, F.R.S. and M.P., was inaugurated at Swansea on 2nd inst. The statue, which stands on a pedestal of Cornish granite, was cast at the foundry of Messrs. Robinson and Cotnam, Pimlico, in one piece. The bronze contains a large proportion of copper. The precise height is 8 feet 6 inches, including a bronze plinth, and the weight is about a ton and a half. The pedestal weighs at least twenty tons.

**STRIKES.**—At Liverpool the stonemasons' dispute is still unsettled. One of the local papers gives the following summary of recent proceedings:—The architects and master-builders of the town lately held a meeting in the Clarendon-rooms on this subject, when it was resolved to recommend both parties to leave the settlement of the question to certain well-known and disinterested gentlemen, each party agreeing to abide by the decision. The masters readily adopted the recommendation for themselves; but the operatives, thinking that no obligation to abide by the decision of the arbiters should be insisted on, refused to place themselves in the hands of the gentlemen named further than merely to consider the advice which might be tendered. The masters, believing that no harm could arise from a discussion of the subjects in dispute, agreed to meet the men in conference on their own terms. The meeting took place on Friday, when the Rev. H. S. Brown, Baptist minister, Mr. William Rathbone, J.P., and Mr. Councillor J. R. Jeffery, met a deputation from each of the disputant parties. It was understood that neither masters nor men were to be bound by any opinion of the mediators. The men were not prepared to recede in any degree from their previously submitted demands, so that the masters could not make any overtures. One of the things which seemed to be most objectionable to the employers was the men's requiring the masters to accept their terms as to apprentices. The mediators recommended the men to reconsider their demands, with a view of their being modified, and they promised to do so and report. An agreement, we may add, to settle wages *per hour*, was strongly urged by Mr. Jeffery. The Tye shipwrights, who were on strike in consequence of a reduction of wages from 6*s.* to 4*s.* 6*d.* have resumed work on a compromise that the reduction be to 5*s.* only. The Wear men were to submit to the same arrangement, and the Bly the shipwrights have already done so.

**OPENING OF THE ASIATIC SAILORS' HOME.**—On the 3rd inst. the new Home for Asiatic Seamen, lately erected in the East-India-road, Limehouse, was formally opened by Lord H. Cholmondeley. The building was completed in January last, but could not be opened until the present time from want of funds. It is a large red brick building, having about from 150 to 200 feet frontage. The internal arrangements are fitted to accommodate 130 inmates. Separate portions are set aside for superintendent's apartments, hospital, registry, shipping, and secretary's offices, all of which are provided with appliances for lighting, warming, hot and cold baths, and lavatories. The total cost of the building, not including 1,220*l.* for the site, and 300*l.* architects' commission, was between 8,000*l.* and 9,000*l.* The other expenses connected with the erection were between 2,000*l.* and 3,000*l.* making a total of 13,000*l.* expended of this sum only about 7,000*l.* were subscribed, leaving the promoters of the scheme 6,000*l.* in debt on its account. The proceedings took place in the principal room of the new building, one side of which was occupied by Asiatic seamen from almost every portion of Asia.

**LAYING THE FOUNDATION STONE OF THE CLOCK AND WATCHMAKERS' ASYLUM.**—The foundation stone of this asylum was laid last week, at Colney-hatch, near the Great Northern Railway Station, Mr. T. S. Duncombe, M.P. for Finsbury, officiating. The asylum, which will be in the Tudor style of architecture, formed of red brick, decorated with stone dressings, is from a design by Mr. Robert Palgrave, architect, and is intended to provide a home, with fuel and light, and an annual pension of 20*l.* to the men, and 13*l.* to the widows, for such as may be elected by the subscribers. It is proposed to build thirteen houses immediately, and subsequently to increase the number, and with this view an eligible piece of freehold land of two acres in extent, has been purchased; plans, building estimates, &c. obtained, and a large amount subscribed for building purposes.

**FALL OF A BUILDING AT WOLVERHAMPTON.**—Last week a portion of a warehouse in Temple-street, to which extensive additions are being made, fell, and buried five workmen under the ruins, one of whom was not expected to live. The upper floor of the building was supported by an arch, strengthened by an iron girder. The girder broke, and the floor gave way, carrying with it the next floor.

**THE NEW CONVENT, ARMAGH.**—Mr. M'Gaughey, of Omagh, has been declared the contractor for building the new convent at Armagh. The *Armagh Guardian* gives the amount of the tenders as follows:—

Ross (Belfast) .....	£6,100
M'Callagh and Cherry .....	5,764
Peter Hughes .....	5,754
M'Gaughey .....	5,022

Mr. Ross's tender included about 300*l.* worth of additional stone-work, which was not in the other estimates; so that the first three competitors were nearly equal in amount.



**PROPOSED MEMORIAL TO JOHN BRITTON IN KINGSTON ST. MICHAEL CHURCH.**—The proposition to perpetuate the late Mr. Britton's name in his native parish, by erecting some kind of memorial to him within the church, has taken a shape, and a list of subscriptions is published. It is not out of any spirit of dissatisfaction or rivalry with the proposition of the Institute that the present proposal is made; but, as Mr. Britton was a native of Kingston St. Michael, rose by his own exertions from very humble circumstances to a position of literary eminence, and, as it is also well known to his more immediate friends, that he was very much attached to his native place, and was desirous that his name and history might not be forgotten there; there is no doubt in the minds of those with whom the present proposal originates, that in gratifying their own feelings they are also doing that which would have gratified his.

**LEEDS SCHOOL OF PRACTICAL ART.**—The annual meeting of the friends and supporters of this school took place on the 8th instant in the hall of the Mechanics' Institution and Literary Society at Leeds. The attendance was limited but select. The hall was fitted up for the occasion, with a display of works of art. Mr. W. B. Denton, president of the school, was in the chair. The report stated that there were altogether 104 pupils attending the central school. The head master has under his personal charge, besides the central, eight other schools wherein he gives lessons—namely, Ackworth's school, 200; Wakefield Mechanics' Institution, 26; Leeds Mechanics' Institution (boys' school) 90; Leeds Ladies' Educational Institution, 50; Marshall's school, Holbeck, 150; St. Matthew's school, 150; St. George's school, 180; St. Peter's school, 30. The school has now in action two certificated masters, Mr. John White, head master, and Mr. Charles Ryan, assistant master. The assistant master has under his charge twelve classes in public schools and institutions—namely, Woodhouse Mechanics' Institution, 12; East Ward school, 12; Kirkstall school, 9; Headingley school, 19; Halifax Working Men's College, 22; Kirkstall school, 50; Burley school, 75; St. Andrew's school, 30; St. Ann's school, 16; two private schools, 38; West End Mechanics' Institutions, 9. At present there are 86 females receiving lessons in connection with the central schools, and under the head master's personal care. Mechanical drawing is taught in the central schools, and in several of the popular institutions in which the masters give lessons.

**PRACTICAL MINING COLLEGE.**—Mr. Nicholas Wood and Mr. Woodhouse (a deputation from the Institute of Mining Engineers), accompanied by Mr. Robert Stephenson, M.P. and Mr. Joseph Locke, M.P. had an interview with Sir George Grey, on 30th ult. at the Home-office, on the subject of the establishment of a Practical Mining College.

**THE DARK ARCHES OF THE ADELPHI.**—Some alarm has been excited amongst the inhabitants of the Adelphi, in consequence of the pestilential stench which, during the few days of hot weather, proceeded from the well-known "Dark Arches," the filthy state of which has been so frequently described. In the streets into which the arches immediately open, the stench is almost unendurable, and if not at once checked by some cleansing process, hitherto almost systematically neglected, the result will probably be the breaking out of some malignant form of fever amongst the inhabitants. The disaster at Washington, U. S. ought to aid us in enforcing the necessity for sanitary arrangements. The principal hotel there, the National, is now closed, having killed some thirty of its guests, and poisoned, less effectually, about 500. The exact cause of the said occurrence is still a mystery. The investigation made has not been satisfactory, but the medical and other authorities have decided that it was only bad air and choked drains. A subscription is on foot to defray the expense of a more searching inquiry—a little too late, it is to be feared.

**NATIONAL COLLECTIONS.**—In the year 1856-57 the sum total of 202,467.7 was expended on national collections, against 228,866.7 in 1855-56. 46,490.0 were appropriated to the British Museum establishment, 49,768.0 to the buildings, and 20,454.7 to purchases; 12,077.0 to the National Gallery; 5,815.7 to scientific works and experiments; 500.0 to the Royal Geographical Society; 58,966.7 to the Department of Science and Art; 7,312.0 to the Museum of Practical Geology; and 1,000.0 to the Royal Society. The total amount expended on the purchase and laying out of the Kensington-gore estate from 1851 to 1856 inclusive is 277,309.7.

**ELECTRIC LIGHT.**—Prof. Wey has specified his improvements in obtaining light by electricity. "What I claim," he states, "is the use of a flowing electrode of mercury in combination with apparatus for regulating the distance apart of the two electrodes; and I also claim the combination of a small overflowing cup or regulated surface of mercury, as a second electrode with a flowing electrode of mercury in apparatus for obtaining light by electricity."

**ANOMALIES IN THE TIMBER TRADE.**—Mr. Edward Chaloner, of Liverpool, in his circular of 29th ult. remarks, in reference to a cargo of New Brunswick and Nova Scotia deals,—"The duty on this cargo of sawn wood is 200l. and, if exported, must be paid; whereas any other sawn wood, except colonial, can escape all Customs duty whatever; all other sawn wood may be bonded—colonial cannot!" And again,—"Baltic sawn stuff can be now exported to Australia and elsewhere much beneath the cost of all American, and also cheaper than colonial deals; for even under a declared system of free trade these last cannot be exported or even bonded without first paying a Customs' duty of 7s. 6d. per standard, or 8½ per cent. on the first cost—say on St. John spruce deals. They cannot even be transhipped to another colony without this imposition. On the contrary, all foreign wood, sawn or unsawn, may be bonded or otherwise transhipped free of all Customs' duty, such being equal to about fifty per cent. on the first cost of those foreign or Baltic deals which are those more in competition with colonial. So that the staple manufacture of the colonies cannot here escape the ½ per cent. tax, while the foreign can save, or indeed in a way recover, about 50 per cent. on its manufacture—as it were on declared neutral ground." Further,—"It is somewhat inconsistent that the ship wrought of pitch pine in her masts, spars, planking, &c. and employed to carry the like material to our own artisans while rewarded with freight may herself be sold free of duty in Great Britain, while the raw material thus brought must be taxed as above for the essential repairs of the like or any other ship in England; and further, whilst all furniture and most ship-building woods are admitted duty free, pitch pine, extensively used for both purposes, is subject to the high duty of 7s. 6d. to 10s. per load."

**CARE FOR THE DOGS.**—When improvement in the condition of man, or the beast under his care and control, is the object in view, your excellent publication is always open to advance and advocate it. Without further preamble, therefore, I would suggest whether some plan could not be devised during the year, to provide receptacles of some kind for water in the public streets and highways, to which dogs might have constant and easy access. There is little doubt but that the want of this prime necessary of existence to all animals is, in a much greater degree than is generally supposed, the cause of canine madness. A paragraph, however brief, in your columns, on this subject, would, I am sure, call forth suggestions from friends to dumb animals, and to dogs in particular, that might lead to results greatly to be desired both as regards humanity as well as expediency.—E. C.

**THE COPPER TRADE.**—The smelters have resolved on further reducing the price of copper 1d. per lb. making tinned cake and tile, 117.7, best selected, 120.0 per ton; copper sheathing and braziers' sheets, 13d. per lb. This has been followed, as usual, at Birmingham, by a reduction in the price of brass tubes, rolled brass, and brass wire, of three-farthings per lb.

## [ADVERTISEMENT.]

TO THE EDITOR OF THE "BUILDER."  
86, Regent-street, June 2, 1857.

Messrs. Clark and Co.

GENTLEMEN,—In reply to your inquiry as to my opinion of your shutters and work, I beg to say, that the brass front, &c. you put in for me, I think, is equal in finish, and, indeed, altogether such as is not to be excelled by any other in London; it wears well, and I think the colour of the brass is excellent. As to the shutters, it is now upwards of seven years since they commenced work: I believe, for repairs, a few shillings will cover all charge, except a small annual one for oiling. They do and have worked well during all that time, and no accident has occurred to them; and I believe them to be in perfectly sound condition now.

I beg to remain, yours obediently,  
JAMES MEDWIN.

## TENDERS

For alterations at Marston House, Somerset, for the Right Hon. the Earl of Cork and Orrery:—

Long, Bradford .....	24,628 0 0
Morgan and Lovell, Bath .....	3,568 0 0
Treasure, Bath .....	3,560 18 0
Davis, Frome (omitting work of the value of 34s.) .....	3,481 0 0
Browne, Frome (accepted) .....	3,465 0 0

For building schools in connection with Trinity Chapel, Poplar. Quantities supplied by Mr. George Moring:—

Salt .....	£1,600 0 0
Ward .....	1,440 0 0
Watts .....	1,375 0 0
Watkins .....	1,318 0 0
Atherton .....	1,298 0 0
Hack and Son (accepted) .....	1,263 0 0

For St. Saviour's workhouse, Messrs. Roper and Jarvis, architects. Quantities supplied:—

Sutton .....	28,414 5 8
Lee and Lavers .....	6,973 0 0
Dover and Sons .....	6,730 0 0
Crawley .....	6,720 0 0
Keast and Moon .....	6,667 0 0
Taylor and Buckley .....	6,629 0 0
Trollope .....	6,608 0 0
Tarrant .....	6,593 0 0
Hartson .....	6,588 0 0
Rowe .....	6,394 0 0
Colls and Co. ....	6,190 0 0
Myers .....	6,170 0 0
Palmer .....	6,162 13 4
Hocken .....	6,160 0 0
Rider .....	6,100 0 0
Hack and Son .....	6,098 0 0
McClennan and Bird .....	6,055 0 0
Marshall .....	6,050 0 0
Dennis .....	6,000 0 0
Bennett and Sass .....	5,995 0 0
Hill .....	5,983 0 0
Patrick and Son .....	5,888 0 0
Stump .....	5,831 0 0
Wilson .....	5,794 0 0
Thompson and .....	5,776 0 0
Dovbs .....	5,680 0 0

For alterations and additions to the Maclesfield Union Workhouse. Mr. James Stevens, architect. Quantities supplied:—

Mallor, Son, and Terras, Manchester .....	22,515 0 0
Blackshaw, Maclesfield .....	2,424 0 0
Sanderson, Bollington .....	2,408 0 0
Evans, Maclesfield (accepted) .....	2,330 0 0
Wilkinson, Maclesfield .....	2,281 0 0

## TO CORRESPONDENTS.

No. 101.—J. R. A.—C. M.—T. S.—W. S. (below our limits)—D. F. (ditto)—S. L. M. (ditto)—W. W.—G. T. C. H.—A. T. M.—Julia (next week)—F. S. E. T. B.—Mr. H.—R. K.—Mr. D.—C. M. L.—R. Y.—Looker on—J. P.

"*Trade and Address.*"—We are forced to decline pointing out books or finding addresses.

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

## ADVERTISEMENTS.

**BOROUGH OF STOCKTON-ON-TEES.**—WANTED, for the Borough of Stockton, a person duly qualified to perform the duties of SURVEYOR and INSPECTOR OF NUISANCES. He will be required to draw up plans, prepare estimates and reports, superintend the making and repairing of highways and footpaths, and to report and remove all nuisances. He will likewise be required to collect the corporation rates, and to superintend the collection of the market-levy. Applications in writing, stating previous ability, and the amount of salary required, to be sent, post-paid, to Mr. WILLIAM BEET, Clerk to the Local Board of Health, Stockton-on-Tees, on or before THURSDAY, the 18th day of JUNE instant. The person appointed will be required to provide a good surety for the due performance of the duties of his office in the sum of 500l. Stockton-on-Tees, June 1st, 1857.

**NORWICH WORKHOUSE.—CLERK OF THE WORKS.** WANTED, The Guardians of the Norwich Corporation of the Poor are desirous of appointing a CLERK OF THE WORKS, to superintend and direct the erection of Messrs. Medley and Maberly, an architect, of Gloucester, the building of a new Workhouse, at Norwich, which is intended to be proceeded with forthwith. The person chosen must be a candidate with the building trade in Norwich is eligible as a candidate. Candidates must transmit their applications, accompanied with testimonials, as to character and competency, to me at my Office, Little Oxford-street, Norwich, on or before FRIDAY, the 19th instant, at TWELVE o'clock at noon, and appear personally before the Building Committee, at the Court-room, St. Andrew's Church, Norwich, on the same day, at TWO o'clock in the afternoon. E. C. BAILEY, Clerk.

## TO PATENTS AND GUARDIANS.

**THE SUBSCRIBER** is desirous to receive into his House a well-educated YOUTH as a Pupil, where he will have the advantage of the constant supervision of the principal, and live in comfort with all the same time be attended to. Apply, if by letter, prepaid, to Mr. W. WILDS, Architect and Surveyor, Hertford, Herts.

**WANTED, A YOUTH, as an OUT-DOOR APPRENTICE or IMPROVER to a Practical House Decorator, Marble Grainer, Writer, Picture Restorer, and Gilder.** He will be instructed in all the above branches. First-rate references can be had.—A premium required, and a salary given. Apply to SAMUEL BURNBY, Denmark-hill, Camberwell.

**WANTED, by a Builder in the Country, a WORKING FOREMAN, who can make plans and working drawings, and take out valuations.** Apply to Mr. BUSBY, Architect and Surveyor, 21, Giltspur-street, B. and A. street, W.

## TO GLASS PAINTERS.

**WANTED, a good FIGURE PAINTER.**—An English, tall, strong figure required, &c. to SCOTT and DRAPER, 7, St. Paul's.

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# The Builder.

VOL. XV.—No. 750.

**P**ROFITABLE things for consideration are not necessarily pleasant things. If we are to observe silence touching abominations which demand reform through fear of offending delicate sensibilities, instead of pointing them out and denouncing them, the abominations will remain to the end of the chapter. The first step towards obtaining a remedy is to make the existence of the disease known. Once more, then, let us dive into the back-slums of London—the social moccasins, the shadowy corners—and bring into the light the one or two points of good and evil found there during a recent walk. We have before now endeavoured to bring strongly before the public the miseries which cows and sheep endure in London, and the evils which result to the community in consequence. London cows, as we have before said, are in many cases kept in places where the poor brutes are not only destroyed themselves, but are made the cause of destruction to those living around. All who dwell near a cowkeeper know the abominable smells which proceed from his sheds and pollute the atmosphere during both summer and winter: there can be no doubt of the unwholesomeness of such places. Although great improvements have been made lately, something more must be done. A number of influential cowkeepers, acknowledging the evil, have formed an association having for its object the improvement of the cow-sheds of the metropolis. One of the regulations of this society is, that all the premises belonging to the members shall be open to the inspection of the others; and that reports shall be made of bad conditions, with hints for improvement when necessary. This is a praiseworthy step, but one which will not be sufficient to satisfy the public. At a recent meeting of this association, a gentleman connected with it stated that a case had been brought before a magistrate to settle the size of apartments in which cows might be placed. The magistrate recommended that a room 10 feet long should be 10 feet 6 inches wide (the height was not mentioned). It was argued before a large attendance of practical men engaged in the milk trade, that if the sheds were made of that size it would be quite impossible to keep them clean, that the large amount of additional room required would be a great evil, and that 6 feet or 7 feet wide would be sufficient, if the sheds were made 3 feet long; and it was eventually arranged that sheds 3 feet long should be 7 feet 3 inches in width. When we consider that most cows are from 5 to 6 feet in length, it seems that the space of 8 feet is not an extravagant extent. The breeders of race-horses, hunters, and the best kinds of cattle, show by their practice that they are aware that breathing-room is as necessary for brute beasts as it is for human creatures.

In parts of the metropolis which we could mention, cows are kept standing closely side by side in sheds placed in narrow lanes amidst a crowded population. The pen is not so effective in conveying an impression of such places as the pencil, so on the next leaf we give a view of a "dairy," sketched on the spot in the heart of the metropolis, where, as will be seen, families reside in the rooms above. The alley in which it is situated is so narrow, that Scott's

description of another sort of locality in "Rokeby" will apply:—

"For though the sun was on the hill,  
In that dark dell 'twas twilight still."

Besides the unnatural gloom, confined space, and in some instances want of drainage, the food of the London cows, which consists mainly of grains and other refuse from the breweries, is not good; and, although it may add to the quantity, cannot improve the quality of the milk. When we consider what an important part this is of the food of young children, it will be seen to be a matter of great importance.

Visitors to Smithfield towards the close of the market, may see numbers of attenuated cows, bleary-eyed, and with countenances which are as unpleasant in their way to the sight as those of worn-out habitual drunkards. The spines of these beasts are arched up, and all the points of beauty and health are gone. These animals have been bought chiefly from such cow-sheds as we have sketched; and many cows, when it is considered that they are no longer able to supply milk, are not even fit to make an appearance amongst the leanest kine of Smithfield market, but are taken away and melted, or in other ways disposed of.

It is painful to have to mention what is unpleasant, and even injurious to individuals, but feeling strongly the necessity of certain changes for the public good, we are forced to place facts before our readers. It would be well often, if those who may feel aggrieved were to consider the times, and apply, without being forced, the means of improvement which increased knowledge has placed in their hands. Even when improvements can be easily made, however, and the necessity of them is acknowledged, it is long before a large number of persons can be induced to change. About thirty years ago, at Newcastle-upon-Tyne, with the exception of the statute fairs, which were held three or four times in the year, there was no market for sheep and cattle; and the butchers were obliged to go every week to Morpeth, a place fourteen miles distant, where a weekly market was held. In order to get there some of the butchers, with their money in their pockets, would start in the middle of the night, even in the most inclement seasons, to walk the dreary road. Instances have occurred of their being knocked down, savagely treated, and robbed; and owing to the numerous calls for refreshment on the road, some were not sufficiently intelligent to make a very good bargain when they reached the market-place; some of the butchers travelled by stage-coach and other conveyances; but at the best, in wet and wintry weather, it was a lonely, uncomfortable, and expensive journey: and besides, when the sheep and oxen had been bought, they had to be driven then 14 miles home. Great was the grumbling, too, about the toil of these journeys, and often was it mentioned, in order to enhance the prices of meat. However, the population of the ancient town of Newcastle having much increased, the corporation determined to provide a weekly cattle-market close at hand, and it was curious to note how the butchers immediately set themselves in opposition to a market close to their own door, and gloried in the 28 miles' journey, with all its expenses, inconveniences, and perils, and for long the new market was left without either stock or buyers. In course of time some of the most obstinate of the old butchers died off, and the advantage of the change became so evident, that the cattle-sellers were glad to bring the animals the extra 14 miles. Things advocated stoutly by parties in the metropolis at the present day, will cause, a few years hence, as much surprise as does the conduct of the Newcastle butchers now.

As regards the London supply of milk, time was when the slowness and difficulty of conveyance rendered it necessary that the dairies

should be either in the metropolis or in the immediate suburbs; but the means of transit are now changed, and for 50 miles round this great city the cows can be milked at early morn, the milk brought by swift trains to town, and delivered at our doors in time for breakfast. It must be admitted that several of the London dairies, where capital is not wanting, are managed as well as the circumstances will admit; but at best, the keeping of such animals in the midst of a huge population is bad, and should be discontinued.

Leaving the "dairy" (the words suggest a very different place, with "neat-handed Phillis" directing), we passed some of the London slaughter-houses, and have illustrated the gentle means used to persuade the poor brutes to enter places altogether unfitted for the purpose to which they are applied. Measures should be adopted to put a stop to the tail-twisting and other barbarities resorted to.

Our walk brought us to Lucy's-buildings, near the north end of Leather-lane, Holborn, mentioned by us some time ago; and we inquired how matters were going on in that neighbourhood. At the time of our previous visit it was eminent for neglect and filth; and it was therefore with no small pleasure, that on reaching the approaches to it we found evidence of care. At the time of our call some scores of costermongers and their assistants were carefully arranging their goods on trucks for the Leather-lane and other markets; and we could not help giving that somewhat abused body credit for the exertions which they were making to obtain an honest livelihood under circumstances of very great difficulty. It should be borne in mind that this class of the London population are the means of not only preventing great waste in the London wholesale markets, but of also affording many little luxuries to the poor. We found that after the costermongers have trimmed their cabbages and other wares, provision is made for the immediate removal of all refuse. The drainage, we are told, has been all set to rights, the courts which branch off are white-washed, and the pavement is cleansed. A large tank has been provided for water, and other things cared for, which will undoubtedly have a beneficial effect upon the population. The water supply on Sundays is a great boon, but in Lucy's-buildings the provision for its reception is quite inadequate for the large population. In these buildings there are about thirty-six houses, thickly peopled, and but two tanks of any consequence for the whole. While here we met with a curious arrangement, shown in the engraving. Having been asked by a woman to go and see the spring she got her water from, she showed us a place, not in a very good condition, "but which," said she, "looks today as if the Queen herself was expected; and you see that wooden spile, sir" (marked A in the engraving), "we take that out and get the water as we can, and the plagues of boys often take it out for mischief, you see, and then we have no water at all." Before proceeding upstairs in search of this mysterious water supply, we noted that no means except the chance overflow of the water had been provided to flush the closet. Upstairs, we were invited to a corner by the inhabitant, who lifted up, in a solemn manner, a wooden trap-door, which operation gave us a sight of the cistern, "and here," said she, "we draw our water up, but it is dangerous for the children, you see, when I am out."

Continuing in the same neighbourhood, we will look at an indication of a better time to come in Gray's-inn-lane,—a Social Bridge which has been erected there. It is but a small one, it is true,—but a little hole will let in a deal of light,—a narrow causeway may save an army. This bridge takes the shape of a Ragged School, held at No. 5, Fox-court. It has little of the appearance of an educational establishment, and would scarcely be discovered by those unaware



of its existence. The basement consists of a dilapidated shop, part of which is occupied by a mender of shoes. On the rough planking which has been put up to cover the rents of the window, are several printed bills, setting forth that it is possible many residing in this vicinity may not be aware of the ignorance, vice, and wretchedness which prevail almost at their very doors, and inviting the well-disposed to make an examination of this unfortunate locality, where many families are so destitute, and many so degraded, as to be unwilling, or unable, to pay for the education of their children, and thus be enabled to judge of the value of a ragged school amid the scenes of squalor around, — a school which is constantly available for the gratuitous instruction of these otherwise wild and undisciplined children. Another placard announced that arrangements had been made for the delivery in the school of a course of free lectures to the working classes, on alternate Wednesdays, and that the subject for that present week was "The House I live in," with coloured illustrations, by Mr. F. K. Rose.

On the occasion of our first visit, the sleet and rain were pelting down, but this did not prevent numerous little boys and girls flocking from various directions, many of them without hats or caps, and very badly shod: their faces and hands, however, in most instances, were clean, and their hair in good order.

Passing through the dark and dingy shoemaker's shop, and ascending the staircase, we found that the partitions of the first floor of the house had been removed, and a room of considerable size formed, capable of accommodating upwards of 100 boys. Unfortunately, at the time of our first visit, the master was ill, and the place empty. The intelligent mistress of the girls said that when their teacher was unable to attend, the boys came day after day, and hung about the door, and looked so miserable, that she could not help taking upon herself the charge of the little boys, although the task was almost too much for her. Upstairs in a room were at the least 120 boys and girls, from two to twelve years old. On the walls were maps and various useful pieces of advice, such as "Be kindly affectionate one to the other;" "Speak no evil one of the other;" "Six days shalt thou labour and do all that thou hast to do;" and so on. On Thursday last, when we looked in, both schools were in full work.

Few could look at the order which here prevails, and contrast it with the manners in the homes from which the children come without feelings of satisfaction. A quiet word from the schoolmistress seemed sufficient to still any disorder. Very little whipping is required, and the greatest punishment seems to be the threat of being turned out of the school. The female teacher said that in the evening youths, almost grown to manhood—of the very roughest and worst description—attend; and that these she has taught in the master's absence, and found not the least difficulty in managing them, although, elsewhere, they would be very boisterous.



Where We keep the Water.



A London Dairy.



A London Sheep-fold.



How Oxen are persuaded.

In addition to day-schools for boys and girls, and the evening schools, the rooms are open on Sundays. There is also a weekly meeting for mothers, and a clothing club. Looking around at the contented countenances here together, and thinking of the advantages training was calculated to produce, it was with regret we learnt that the institution is in debt to the extent of about 80*l.*; and that those who have assisted in its formation are unwilling to incur more responsibility, and have arrived at the painful conviction, that they must give up one of the day-schools, unless a timely interposition of the friends of the poor in this pitiable neighbourhood shall enable them to liquidate the debt, and to prosecute their full work with a hopeful prospect of adequate annual support. It is stated that if 300 of the surrounding inhabitants, and the occupiers of offices, were each to give only five shillings a year to this institution in aid of its present income, its various schools would be maintained in their full work of seeking to train children to become honest and useful members of society, instead of the pest and terror of the neighbourhood. The opinions of intelligent persons who are obliged to mix amongst the classes who are so much in need of help and yet are so difficult to deal with, is so valuable, that we were glad to listen to the teacher of this school as to the appreciation which the parents of her flock would have of improved dwellings. Her reply was,—"They want raising up: they are in great part so ignorant, and have been so long neglected, that many of them are altogether careless, and they do not know their danger. It is, however, I think, most important, in endeavouring to benefit these people, to respect so far as possible their prejudices. The poorest of them cannot bear the idea of being, as they call it, *under rules*; and many about here think that at Tyndale's Buildings and other places which have been improved, they are not allowed to go in and out at their pleasure."

This opinion we believe to be perfectly correct. The large majority of those who reside within the Shadows of London must be coaxed into cleanliness and order, they will not be driven; and to the ragged and national schools scattered in these benighted districts we must look to dispel the illusions and prejudices which at present exist: they should therefore be well cared for, and we hope that before long the school in Fox-court will be relieved from difficulty.

The poor cobbler who established the first ragged-school should have a statue!

#### THE GOVERNMENT OFFICES COMPETITION.\*

THE drawings numbered 110, and bearing the motto "For my Country," and a shield with the arms of the kingdom, include a general street plan, a block plan, and a design for the War-office and Foreign-office in one building. The general plan, as to the intended retention of the site of Westminster-bridge, and in other particulars, observes arrangements which are proposed by the majority of the competitors; and which have been referred to sufficiently, in previous notices. In the block plan the general offices are arranged in three comprehensive blocks, besides a bow-fronted addition to the present Board of Trade, at the back of it; and large triumphal arches are placed at the south end of Parliament-street. In the two principal offices a quadrangle occupies a very large area. The internal elevations of this part of the building form the best portion of the design. The quadrangle is entered by a *cortile* from Parliament-street, and two side gateways; and contains some large groups of sculpture. From the absorption of area by the one chief feature, the departments are not concentrated so much as in other designs—whilst the corridors are central ones—dependent for their light on halls and staircases mainly—and in some cases extend to a length of 100 feet without apparent lighting. For the *style* of the design, the authors have essayed a free rendering of the Italian palatial style. They were desirous, as they say, to avoid on the one hand the weariness which the mind is apt to experience from the recurrence of the same features, and on the other to oppose to the principle of uniformity the principle of contrast, which they call the very soul of harmony. But their design exhibits some features which have the character of eccentricity, as compared with ordinary Italian details. The roofs to

\* See p. 336, ante.



the pavilions of the angles are conspicuous from their dimensions, and varied and contrasted curvature.

In No. 111, "Honeste Audax," a design for the War-office in a French-Italian style, novelty and richness of detail in the orders and dressings have mainly been attempted. The wall surface is diapered, the material intended being apparently brick.

No. 112, marked "Omicon," has attracted much attention, yet we are inclined to think more for its merits in regard to decorative design, which are apparent in the perspective views, than for those which are to be discerned in the mere plans, and which may be greater in degree, whilst more suggestive as to expedients for the production of the finest architectural effect. We have felt some regret that there has been so little opportunity for doing justice to the general street plans and block plans in the collection: those in the east corridor, we fear, have been scarcely examined; and in consequence of the shutting up of the corridor before the time named for the general closing, we shall not be able to make our notice as complete as we desired to do. We would, however, observe, that in all cases the vehicle of expression, or drawing—the plan—

itself particularly, claims attention which is not now given to it by the public,—and not merely on the score of its exemplifying convenience in a particular building,—but because in it mainly, what is the best provision for architectural effect will be found set forth. The drawings now before us include a general plan, a block plan, and a design for the War-office, Foreign-office, and Residence, as buildings grouped together for the external effect, but without internal communication. In the general plan, the author proposes three bridges, one of the number being the Hungerford-bridge widened. For Westminster-bridge, he exhibits two suggestions; by one, he would retain the present site, but as we understand, forming new foundations,—and by the other he would follow the line of the new Charles-street. We should have preferred his keeping to one suggestion. A competitor, in justice to himself and others, should—in the language of the turf—declare with which horse he means to win. As to the Charles-street line, the present author unconsciously constructs a reason for his new site, instead of choosing a site to suit the traffic and the Offices. Thus, he pro-poses a broad avenue from Charles-street, cutting across the Park to Buckingham-palace, involving alterations in the garden-enclosure which would not be assented to, even were there arguments of convenience which are not now offered. The truth is, all the new sites that have been proposed for the Westminster-bridge are less suitable than the present site for the traffic and the privacy of the Offices; and would serve the public, and the metropolis and Westminster, less than a particular small area about Whitehall and the east end of St. James's-park; and the sooner this simple matter is distinctly seen, the better will be the prospect of benefit from the proposed improvements. As regards other arrangements suggested in the general plan, propositions such as the removal of St. Margaret's Church, and the formation of a place 600 feet square near the Abbey, are made in the design before us. There are other suggestions of a practical kind which may be worth adverting to. Thus, the author would secure a vista along the banks of the river, terminated by the Clock Tower, and would form a public garden between the Offices and Whitehall-stairs, with a communication to it from the embankment; and would provide a basin for the barges at Scotland-yard. At the end of the park enclosure overlooking the Parade, he would construct a raised terrace promenade, to form a convenient station for viewing military ceremonies. The War-office, Foreign-office, and Residence, exhibit one grand frontage facing northward to the parade. It is only to be regretted that a production which has the remarkable merit that this exhibits in the plan of its front, as well as in many parts of its internal distribution, and in its decorative design generally, should be in any danger of rejection from the list of rewarded designs, through a deviation from the "instructions" that might offer positive advantages for the object. Enough, however, on the head referred to, has been said by us. It is still our duty to mention deviations when they occur. The author exceeds the length of the ground slated yellow in the Government plan, as it would appear, by about 30 feet. What we fear may be a real defect is, that his courts are less than 21 feet in width,—which must be considered less than is desirable for lighting the lower rooms and for ventilation. But, as he does not propose to retain the State Paper-office, increased space might perhaps be got without going beyond the red line, except at the north-west corner. But the railing of the park enclosure would then almost of necessity, have to be set back. The main front in the design consists of a centre and advancing wings; and the grouping of these masses, as well as of the subordinate breaks in the plan, and of the domes, lan-

terns, and terminations of the roof, is highly successful. We should advert to the plan of the War-office, in which the leading principle is in the provision of a "Great Central Hall," with corridors to the several departments leading out of it. The hall is reached at one end, by the entrance from Parliament-street, and has the principal staircase opposite. The corridors referred to are three on each side of the hall, conversely to it, as also are the principal courts. The corridors are lighted chiefly from the sides. Columns and galleries surround the hall, which is well planned for effect. There is a second entrance to the War-office in the northern front, and one in Charles-street. The Foreign-office occupies the centre of the group. It has a portico on steps at the north, whence the entrance leads across a hall to a rotunda and staircase, crowned on the exterior by the principal dome. There is also an entrance from Charles-street by a quadrangle and cortile for carriages, and a vestibule leading to the rotunda before named. The plan of the Residence we think highly successful in its capabilities for architectural effect. It joins on to that of the Office, at the re-entring angle, by a slight connection taking the form of a tower and lantern externally. It sets back considerably on the Charles-street front, allowing space for a conservatory and terrace. An entrance at the west, from a carriage-porch, admits to a hall, square on plan,—beyond which is the staircase-hall ranged transversely, with ascents each way, and vestibules at the ends. Beyond this, or in the quadrangle, is the "state dining-room," planned with recesses at the sides, so as to get a space, which is square, and domed over. The staircase and the reception-rooms are, as we have said, excellent: the symmetry of parts is complete; yet the skilful introduction of picturesque and pictorial accessories, and the variety of effect which is provided for, are remarkable. In regard to architectural details, the design is peculiar, from its profuse application inside and out, of small columns, generally disengaged from the wall, and often clustered or coupled. The dormers and groups of sculpture, the ornamental covering of the lofty Mansard roof, and its finials or hip-knoobs, some of which are 10 feet in height, with the domes and lanterns, certainly exhibit novelty and taste. In choosing or forming the style for his buildings, the author has been governed by the view that neither public opinion nor artistic taste would now or hereafter approve of the adoption of Mediæval architecture for the entire district; yet he maintains that in our climate, the picturesque is to be sought rather than the severely classical. Consequently, he has aimed at the effect which belongs to Gothic architecture, but has rejected Gothic detail; in other words, he has adopted what he calls a picturesque classical, or Renaissance style, as likely to graduate, and harmonize with, the two characters of architecture prevailing north and south. The author also contends well for his use of sculptural decoration chiefly composed of the forms of animal life, considering that such forms are necessarily more beautiful than merely geometrical ornament.

No. 113, with the motto "Mens agitat Molem," is given to Mr. John Billing. The drawings include a general plan, a block plan, and a design for the War-office and Foreign-office as one building. Amongst the propositions through the medium of the general plan, we observe the retention of the site of Westminster-bridge as included, and also the construction of a bridge from Trafalgar-square, approached from the present site of Northumberland House. For the latter proposed bridge, the author has endeavoured to show that the levels would be peculiarly favourable; but with what success we are unable to say, his plans being hung where we were unable to do justice to them. He proposes a foot-bridge at the Horseferry, and, having removed Hungerford-bridge, would use the materials on the new site. As to the question of the sites for bridges,—with no reason to alter our opinion as to three bridges for carriages, we assent to the view that the bridge for the Cockspur-street traffic should be placed at the best point, without reference to an existing bridge at Hungerford. But, with a new bridge, there is, as we have already remarked, no very sufficient reason for the removal of the foot-bridge—unless one, pertaining to architectural effect, as put forth by the authors of No. 99. The author of the design No. 116, yet to be noticed, has, we may say, viewed the question of the bridges in a clear light. Surely the cost of the mere removal of Hungerford-bridge, with the loss of the communication—reduced in importance though it might have become—to the bridge at the very small margin of saving as to the bridge at the Horseferry or another site. The only argument worth considering in favour of the Hungerford site for carriage traffic, would be the possible saving in a high level bridge, to heavy loads from the direction of Regent-street and the Haymarket, which might pass by

Pall-mall East, and Duncannon-street, and avoid the hollow at Charing-cross. But even this would be negated by the steepness or length of the incline on the Lambeth side, as to which a ready opinion may be formed from what now exists at that end of the bridge; and the doubtful argument for the Hungerford site cannot be offered by those competitors who provide their approach to the bridge anywhere out of the line of Hungerford-street and the market, now in use. The author of No. 113 has given more attention to the embankment than many have done. Between Westminster and London-bridges he would adopt the proposal for a low stone quay, enclosing a canal or pool of still water next the wharfs—retained as at present. The water might be kept at a uniform level, except about the time of high water, when the tide would be allowed to flow through, to remove noxious accumulations. The principle of this arrangement, as contrasted with that of small docks, is, we apprehend, correct; for, we need only refer to the state of the existing docks, as Puddle Dock—from time to time brought under the notice of the City Commission of Sewers, by their officer of Health—to show that there must be accumulation where the efficient scour is not carefully maintained. The proposition referred to includes a railway, passing under the bridges, and this, it is thought, might be brought into use in towing craft by steam power. Distinct towing-paths for horse-traction are, however, provided. Inigo Jones's York Gate would be placed at a public landing-place, near the Offices and railroad terminus. The author is one of those who would retain St. Margaret's Church, though rebuilt, on the present site, as aiding the effect of the Abbey. In the arrangement of the Offices, the symmetry of masses has been studied. The fronts of the War-office and the building southward on the same side of Parliament-street, correspond; but are united by a recessed centre and gates. The author deduces from his plans of the two principal offices, that in all such cases an area one-sixth larger than is needed for convenience should be taken as required, having regard to lighting and ventilation. At the entrances to the principal Offices, he suggests a waiting-hall for deputations; and at the entrance from the Park, another building as a place of shelter for carriages. He considers that the business character of the intended edifice is at variance with that of Gothic architecture. He therefore adopts the Italian style, with superimposed orders and broken entablatures, roofs of somewhat higher pitch than usual, and a bold projecting cornice, and porticoes and loggias in two stages. Much care has been given to the design in structural points. Each corridor has an arched ceiling below the stone floor of the corridor above, for the gas, water, heating, and speaking pipes; and the space is sufficient for a man to traverse it. The roofs would be covered with stone, laid on tile-arches.—No. 115, "Vivat Regina," a block plan, and design for the War-office and Foreign-office as one building, is only remarkable as the work of an Italian, and as corroborating the opinion which we ventured to offer as to the decadence of art in modern Italy. The corridors are placed round the courts; but many of the rooms have to be reached through others; and the decorative character externally, is inferior to that of Regent-street. Better Italian architecture can be produced now in England and France, than in the home of the original style.

#### CORRESPONDENCE ON THE WESTMINSTER DESIGNS.

THERE is one point in all the criticisms I have read (with the exception of some of those contained in your truly valuable journal) of the designs for the new Public Offices that appears to have been completely ignored by the critics, and that is, the important one of the merits and demerits of the several plans for the Foreign and War Offices.

In the papers addressed to the general public, this, perhaps, is scarcely to be wondered at in the present uncertain position of the art; but I am sure, sir, you will agree with me, that in the use of journals devoting some portion, and, in a few instances, the whole, of their space avowedly to art and art-criticism, and to whose words, therefore, may be fairly presumed to have weight and authority in these matters, and to represent the opinions of artists generally, they should give their attention, not to one only, but to all the various points that professional men know must be considered before a fair opinion can be given of the real merits of a design.

I believe, sir, that at the present moment it is of the greatest possible importance, that all who are really anxious that the best designs shall receive the premiums, should insist on the necessity of a careful examination of the plans and sections, as well as of the elevations and perspectives, that the judges may not have it to say the profession themselves allow that it is the external appearance, solely, that merits



attention and reward. That it will be so architects cannot doubt, unless they at once make an earnest protest against so false a standard of true merit; for the question will, as once, resolve itself into one of draughtsmanship, and if the judges do not exhibit more wit than profess and critics have as yet displayed, it will be clever drawings rather than good designs that will carry off the prizes.

It seems almost puerile to recede to the minds of your readers what never ought to be—although, I fear, it too often is—forgot, that a building should, to be perfect, include, as I think that quaint old writer, Sir N. Wotton, says, “Commodity, firmness, and delight.” The “delight,” now a-days, seems to be the *only* point sought after, and that solely with the limited motive of obtaining external effect; for no buildings can really delight that have not “commodity” and “firmness,” one or both, as, indeed, the author seems to imply by his placing “delight” the last in his triad. If “commodity” were ever thought of, we should not have houses and palaces, with rooms unequal to their intended purposes, and inconveniently located; dark, narrow, and irregular corridors, confused and inconvenient staircases, and a hundred other well-known inconsistencies; and if “firmness” had ever been considered, we should not hear as we now too often do of churches and church towers, town-halls, houses, &c. falling even before they are completed.

In considering the designs, then, for the offices in question, let all three of these qualities, as displayed by the plans, sections, and elevations, have each their due share of attention, for all—both critics and judges—should be aware, that however much they may now be struck by the beautiful drawings and fine exteriors, yet, when the buildings are erected, both the Government and the public will expect something more than a fine outside.

R.

As your pages seem to be opened to the discussion (which has in some quarters rather transgressed the bounds of common courtesy) between the rival factions of Classic and Gothic, in the competition for the new buildings at Westminster, I venture to ask for admission for but a few words.

Your correspondent, “A Competitor for the Block Plan,” assumes that Mr. Wightwick has rendered superfluous any attempt to prove the fitness of Italian architecture for English uses, and he considers that Gothic architecture has passed away as completely as has chivalry, and that, though its advocates “have much, doubtless, of the true heart and gallant spirit” of Don Quixote, they are, unfortunately, insane riders upon hobby-horses!

Surely, it would be possible to describe us rather less facetiously, and at the same time rather more truthfully. The truth is, that we Medievalists (if we are to be stigmatized with a nickname) are fighting against the traditions of three centuries, which, to our minds, have been ages of intense darkness as far as regards architecture in England. We have so far succeeded, that, happily, no one now thinks of using anything but Gothic architecture for all Ecclesiastical purposes; and we are fully determined to spare no effort to accomplish the same result in all civil and domestic buildings. The same determination that has succeeded in the one, will, we have not the slightest doubt, secure success in the other; and whilst our numbers daily increase, and whilst the general sympathy of the world is with us, we are not surprised to find the advocates of foreign and all but extinct styles bitter in their denunciations of our work, and bold in their attempts by any means to regain it in proportion to their rapid loss of influence. The world will judge for itself which party has shown most desire to throw off the trammels of old evil ways, and to design something for these new buildings really original in its character and in its detail, and at the same time in all respects up to the requirements of the day in the matter of light, warmth, and scientific construction. Of one thing I am sure, that it will be recognised that the more notable Gothic designs are most completely free from the taunts so often levelled against the revivers of Gothic, of a desire in any one of these respects to sin against modern necessities. But there is one point upon which all the advocates of a Classic building at Westminster are most carefully silent, and which, nevertheless, lies at the root of the right solution of the problem which is now to be solved; and this is the question of association with existing buildings. I wish some of your correspondents who indulge in visions of the eternal reproduction of some dead level lines of windows and doors, columns and cornices, of wearing similarity and painful horizontality, would condescend for a few minutes to look upon the site with which we have to deal from Hungerford Suspension-bridge. You can thence they would see exactly what we shall all see from the quay or terrace which will some day or other take the place of the mud and barges below Scotland-yard. They will see the

narrow end of the Houses of Parliament, with towers and turrets soaring up into the air, with a degree of beauty of outline, and grandeur of effect, which must command the admiration of men of all schools; a notably defective, however, in one respect—in the excessive want of length in the only front visible from the whole of this side of the river, and most obviously demanding—if ever yet in this world building did demand anything—as its necessary complement, an extension of the same kind of picturesque skyline in all the buildings hereafter to be erected in continuation of it. No one can doubt that Sir Charles Barry, if he were to look at his work from the position I have indicated, would be shocked at the idea of the repetition over and over again of the same insipidity of outline of his new Treasury buildings, and would beg his admirers, if they must copy and repeat something that he has done, at any rate to look to the building, which for ages to come will carry down his name to posterity, rather than to that which, among a large number of works of varying merit, is perhaps that of which he has the least reason to be proud. I repeat, that this is a question which must be decided—if it is decided satisfactorily—with a sole view to the necessities of the situation; and I assert—fearless of any contradiction, supported by one single argument on the facts of the case—that the situation is so singular in its associations, and so completely governed by circumstances which could have no force elsewhere in London, that it would be suicidal to the whole scheme, and an act of real Quixotic madness, to venture upon the adoption of any but a Medieval design.

A MEDIEVALIST.

Sir.—Now that we are awaiting the review of the judges, it is, I think, only due to you, to express the thanks you have so justly earned for your able and impartial criticisms upon the various designs, which criticisms must have been the result of much anxious study and discriminating thought. The language of the press generally (with some few notable exceptions) has been weak and silly to the last degree, and I cannot but contrast them with the careful analysis you have presented to us, conceived in a very different spirit, moreover, to a remarkable effusion which has also appeared in your pages, and which, in my opinion, and I think in that of many others, reflects but little credit upon its author.

ANOTHER CONTRIBUTOR.

#### INSTITUTE OF BRITISH ARCHITECTS.

The meeting on Monday last, June 15, was the closing meeting of the session, and was somewhat numerously attended. The chair was taken by Mr. Scoles. Amongst the donations announced was a copy of the specification of the patent of Captain Scott, for improvements in rendering lime cementitious, instead of allowing it to set in the ordinary manner.

Professor Donaldson then introduced to the notice of the meeting another donation, which he described as one of the most magnificent ever given to their library. This work was an illustration of the ancient Roman monuments at Orange, and was published under the auspices of the French Minister of State for Public Instruction. Mr. Donaldson referred to the great interest possessed by the Roman remains in France, comprising theatres, amphitheatres, baths, and private houses. Even in London, the remains of some of these remarkable works still existed, as for example, under the Coal Exchange, in Lower Thames-street. The Roman remains in France were better preserved than those in England; and the Government of France had voted a sum of 2,000*l.* to clear out a single monument, in order to show what the art and science of Rome was when it governed Gaul. The French Government, in the like manner, had devoted their attention to the remains of Medieval art. He proposed a vote of thanks to the French Minister of Public Instruction, which was unanimously adopted.

Mr. M. D. Wyatt announced the donation of an essay on “The Temple of Diana at Ephesus,” by Mr. Falkener, reprinted from the *Gentleman's Magazine*, which he considered would cast a new light on that interesting subject, and reflect additional credit on Mr. Falkener.

A communication from Mr. B. Ferrey was read, entitled, “A Short Notice on Stamped or Incised Stucco.” In this paper Mr. Ferrey dwelt upon the importance of a cheap and simple mode of internal decoration, especially in churches. He referred to the good effect produced by the old English method of parge-plaster. That system had, however, ceased to be used when brick and stone were commonly employed. Mr. Wyatt, who read the paper, said the object of the plan which he now brought before the meeting was to impress common stucco with geometrical and other forms, and the proposed plan could be employed as well with fine plaster or any cement which did not set too rapidly, as it could be with what was properly called stucco. The surface decorations proposed by Mr. Ferrey were produced by outline stamps, such as were used by cooks in making pie-crust; and this appeared to him to be a very

ingenious application of a simple principle. He might add, that he thought the cement invented by Captain Scott would apply exceedingly well to the process of Mr. Ferrey; and that the general application of Mr. Ferrey's process would give considerable interest at a very simple cost to large wall surfaces, which were generally left plain, and without any decoration whatever. Mr. Wyatt made some further remarks on the manner in which Captain Scott had made his discovery, and on the great advantages which his plaster possessed over the ordinary kind. The new material neither blistered nor cracked, and it might be laid on without the expense of removing the scaffolding, as in the ordinary mode. It was, moreover, of a much more even tint than could be obtained by the use of ordinary plaster, and in the course of a week after its application it became as hard as Portland cement.

Mr. Baker observed that Scott's cement had been used in the houses which had lately fallen down in Tottenham Court-road, and certainly there the cement was very bad indeed. If the characteristic of Captain Scott's cement was cheapness, the builders of the metropolis would be sure to avail themselves of it. He believed, however, that in the case of Tottenham Court-road, a mistake had been made, and that in fact Roman cement had been used.

Captain Scott said that the use of Roman cement in the houses in Tottenham Court-road had been objected to, and the new cement had then been tried in preference: it had since been tried at Chatham with great care and success by Captain Shaw, and the results of the experiment would be published; and he had no doubt that his cement was much stronger than Roman cement. He had taken it to Mr. Faraday, who advised him strongly to take out a patent for it. Captain Scott proceeded to give some further details of the tests to which his cement had been applied, when

Mr. C. H. Smith said that it appeared to him that Captain Scott's cement was a very excellent material, if put into the hands of a good workman, and it only appeared to have failed in any case because the workman did not understand the use of it.

At the suggestion of the Chairman, the discussion of this subject was postponed to a future day, to enable the meeting to proceed with the ordinary business.

Mr. Charles Barry then read “some description of the mechanical scaffolding used at the new palaces at Westminster, particularly in reference to the three main towers of the building,” which we shall probably refer to in a future number. It was a very valuable communication.

Mr. M. D. Wyatt observed that, it would be interesting to know how far Sir Charles Barry had made himself responsible for the scaffolding described, and whether they were a gratuitous exercise of ability on the part of the architect to teach the builder his duty.

Mr. Barry said that, the builders had refused to have the responsibility of the scaffolding, and as a matter of necessity it had fallen upon the architect. In reply to some inquiries from Mr. Wyatt, Mr. Meeson gave some further explanations of the scaffolding.

Professor Donaldson then made some remarks on the interesting nature of the designs for Government buildings lately exhibited in Westminster Hall, and particularly upon the striking absence of Gothic designs of English character, which he considered to be a rather extraordinary circumstance. Upon the whole, he considered the exhibition of these designs had produced upon the public mind an impression highly favourable to architects in general, and particularly to those of the English school.

After a few remarks by the chairman, enforcing on the members the desirability of contributing to the interest of the meetings next session, the meeting adjourned.

#### LLANDAFF CATHEDRAL.

We mentioned, not long ago, the works which have been going on here, and promised some further particulars. The approach to the cathedral is singular and striking: it is almost hidden from view from most parts of the city, until a steep descent discloses it situated in a hollow, resembling rather the sequestered spot usually chosen for an abbey than for a cathedral church. It lies more open, however, to the fields which stretch from Llandaff to Cardiff, and which, from the rapid increase of the latter, from its development as the principal port of South Wales, seem as if they would soon be completely built over, and thus the position of the cathedral lose its present rural and distinctive character.

Mr. Freeman, writing a few years since, when as yet the Lady Chapel only had been restored by Mr. John Pritchard, thus described its general appearance:—

“The first aspect of the cathedral is not a little



perplexing; and it requires considerable familiarity with the building, both within and without, fully to guess the principle of its arrangement, and to recognise its component parts. Looking down from the rising ground to the south, the best point for obtaining a view of its whole extent, the aspect is confusing; indeed, the appearance of the building resembles a perfect chaos—a deserted ruin at the extreme west; the eastern portion (the Lady Chapel) fresh from recent restoration; the centre reduced to the likeness of a conventicle or a third-rate town-hall. Perhaps no more incongruous assemblage of discordant elements was ever brought together.

Since the above was written, the central portion alluded to has been denuded of its conventional appearance, and restored after the original type, and presents, instead of the former miserable, low-pitched roof and sash windows, and furniture of urns and other Pagan deformities, a lofty roof, covered with lead, and noble clerestory of early English architecture, and the cross restored to prominence on the gables. "The deserted ruin at the extreme west" is yet there, though its continuance is, we trust, to be suffered but little longer; and much else remains to be done. The aisles and chapter-house must be restored, and the ruined portion of the building rebuilt; nor is the interior yet sufficiently furnished, as there are no stalls, bishop's throne, nor even font.

Four sedilia (the original number) have been inserted in the presbytery arch. In the design of these, marble shafts, alternately red and green, are employed, and also mosaic panels in geometrical forms. In the gables are statues of the Four Evangelists.

The decorated reredos, which was thought to be beyond restoration, has been transferred to the north side aisle, for the purpose of preservation, as a memento of past ages, and its place has been supplied by one in Caen stone, consisting of three gables with richly-carved mouldings, crockets, and finial crosses. In the centre surface is represented the lamb and flag, surrounded by the vine, and the lamb treading on the grapes, in allusion to the text, "Treading the wine-press alone." The capitals are filled with rich foliage—all taken from nature. The columns are of rouge-royal and emperor red marble, single to the side panels, but double to the centre one. It is proposed that Mr. D. G. Rosetti shall paint these panels—the subjects to be, the Nativity for the centre one, and the figures of St. David and St. Paul, as the ancestor and successor of our Lord, in the side ones. The space beneath will be diapered and enriched with colour. A stone pulpit has been erected, of the style of the thirteenth century. It is supported on a green serpentine central shaft, surrounded by six smaller ones of red marble; and the upper part and staircase handrail have also, alternately, red and green marble shafts. The whole is richly carved with foliage. The figure of an angel supports the book-board (stone), which is in the form of a Bible; and the four panels round the pulpit are to have bas-reliefs of Moses and David, as prominent characters in the Old Testament, on the one side, and St. John and St. Paul, as representing the New, on the other side of the angel bearing the Word.

These sculptures are to be modelled by Mr. T. Woolner. The whole of the carvings throughout the cathedral are executed by Mr. Clarke.

The floor of the nave and a considerable portion of the side aisles have been laid with encaustic tiles, by Minton. In the space before the altar rich marble mosaics, 18 inches square, are introduced.

The cost of the restoration hitherto has been about 8,800*l.* which has been done under the direction of the diocesan architects, Messrs. Pritchard and Seddon, in conjunction with the hon. diocesan architect, Mr. T. H. Wyatt. Messrs. James and Price, of Cardiff, are the builders.

The cathedral consists of a nave having an arcade of six bays, of very elegant early English architecture, with a noble western façade, the chief glory of the church. This is divided into three stages, the lower having the somewhat peculiar doorway of pure early English work, yet having a round arch, within which is a tympanum, having two semi-circular arches, of which the masonry is so arranged, that the central stone dividing them supports itself as a keystone, and is ornamented by a vesica-piscis-shaped panel, having therein the sculptured figure of a bishop. The stage above has a noble tripartite window, having internally only three richly-moulded rear arches; but, externally, between the windows, are two panels, forming, with the windows themselves, a beautiful group of five arches. In the gable above is an arcade, following the rake of the gable, the central arch only being pierced as a window.

On the north side of the west front is a fine tower of the Perpendicular period, but with modern battlements, which have replaced a rich crown of tracery, similar to that of Cardiff and many of the Somerset-

shire churches, and which it is proposed to restore. The corresponding tower on the south side which was of early English architecture, is destroyed, and will be rebuilt with a broad spire.

The nave has a lean-to aisle on either side, with doorways of rich late Norman work, and windows of late Decorated. The aisles have been totally spanned by flying arches and buttresses, added externally to support the clerestory which overhangs the piers below. The clerestory is very beautiful, but simple, consisting of an arcade of five arches internally—the two widest only pierced as windows.

Beyond the six bays of the nave without architectural divisions, are two bays forming the choir, and of the same style. A noble lofty arch divides the choir internally from the presbytery, which has two bays of decorated architecture, but there is still no external distinction—at least in the roof; but the clerestory, for which no precedent was found, is restored in character with the decorated work below.

A very fine Norman stilted arch (probably the chancel arch of the original church) divides the presbytery from the Lady Chapel: above the arch are a decorated three-light window and a circular one over, filled with painted glass, the gift of Mr. Markland, of Bath.

The Lady Chapel is a beautiful structure of early geometrical architecture of five bays, filled with lofty two-light windows. This chapel is vaulted with stone, resting on shafts carried to the ground. The east window is of five lights, with geometrical tracery.

To the south of the presbytery is the chapter-house, a square building with central column and quadripartite vaulting of early English work. The north and south aisles are continued as far as the second bay of the Lady Chapel.

It will be judged, from the above, that the interior effect from the considerable length is simple and grand: externally the want of the usual central feature and transept is felt, but to some degree the chapter-house when restored with its high conical roof will remedy this defect.

Altogether the building is one of great interest, not alone in an architectural point of view, but as being the mother church of English cathedrals; and it is hoped that the present effort to complete its restoration may be successful.

#### THE OUTSKIRTS OF THE METROPOLIS.

PASSING the other day through Panzer's-alley, near the General Post-office, and noticing the curious little monument there placed, and on which is inscribed:—

"When ye have sought ye little round  
You'll find this is ye highest ground,"—

as soon as opportunity offered we took up an old map, in order to measure the extent of the outskirts of the houses by which this stone was in former days surrounded, and found that the distance was but little more than five miles, so that it would have been a very easy matter then to take a walk round London. At present, however, to make a pedestrian expedition round the metropolis would, to most persons, be an undertaking of some importance, as may be seen by referring to the following particulars, which have been gathered from a recently-published map.

Starting from the Thames, near Chiswick, and proceeding northward to the New-road, Hammersmith, the neighbourhood, although open, is still built upon, and we may be said to have commenced our journey on the streets of the metropolis. From the place above mentioned we skirt the new buildings towards Hammersmith-road, the west end of Kensington-road, then northward near the east side of Holland-park to the Uxbridge-road; from thence to Shepherd's-bush; then north-east to the Kensington-park estate; then to Westbourne: still bearing towards the north-east, we come to the very distinctly-marked margin of Portland-town; keeping round that, past the Primrose-hill-park, and then along the Queen's-road to Haverstock-hill, we go eastward to Kentish-town, where we will rest and measure the distance, which is about twelve miles.

From Kentish-town a little southward, to the skirts of Camden New-town, Lower Holloway, the south of Highbury, then in the direction of Stoke Newington, by Kingsland to Dalston and Homerton, skirting round by the west of Hackney-common and Victoria-park, to Old Ford and the Bow-road, then west of Bowry-march to the East-India Import Dock to the Thames, and then take a line which will enable us to get round the built part of the Isle of Dogs, and stop at the Thames, near Mr. Scott Russell's ship-yard.

The distance from Kentish-town to this point is seventeen miles and a half.

Crossing the river we go along its margin eastward, taking in Greenwich, and then on to Deptford New Town, and then westward by the Deptford station by the Plough-road, taking in the Commercial Docks to

Rotherhithe; then towards the Bricklayers' Arms station; thence by twisting roads to Peckham New Town and New Cross; thence west again to the High-street Peckham, then round Camberwell, Brixton, Stockwell, South Lambeth, and then along the side of Father Thames to Battersea-bridge, which we must cross and keep along the shore to Chelsea-bridge, and then round by Ceymorne-gardens, King's-road, Brompton, North-end, Hammersmith, to the point from which we started, and find that this is a distance from our last stage of twenty-eight miles, making the entire circuit,—

From Chiswick to Kentish-town	... 12 miles.
From Kentish-town to Millwall	..... 17½ do.
From Millwall to Chiswick	..... 28 do.

57½

very nearly three days' journey, at the rate of twenty miles a day; and it will be observed that in the line drawn, Battersea, Clapham, Canning-town, and many other places, which even at present can be scarcely said to be separated from London, have been left out.

"As the crow would fly" across streets and houses from the point whence we started at Chiswick, to the farthest east, the distance is nearly eleven miles, and the greatest width from north to south upwards of seven miles. B.

#### NEW CORN-EXCHANGE AT CHELMSFORD

A NEW corn-exchange, erected from the designs of Mr. Chancellor, was opened on the 5th inst. The building is in the Italian style. The openings on the ground floor, which comprise three doorways and two windows, have semi-circular arches, with impostas supported by columns in the depth of the reveals; the centre doorway being marked, by having two columns in the depth of the opening, and by being somewhat larger than the others. The capitals of the columns are studies of English trees, and include oak (two specimens), ash, elm, poplar, chestnut, holly, lime, beech, maple, hawthorn, and walnut; the carvings of these and other similar work throughout the building being remarkably well executed. The first floor is lighted by five semi-circular headed windows, with columns of similar design to those on the ground floor, except that the capitals are studies of plants, including the hop, vine, strawberry, blackberry, rose, lily, nightshade, convolvulus, ivy, and honeysuckle. A stone balcony with pierced balustrade, and supported on deep bold brackets, is continued along the front of this floor. The whole building is surmounted by a massive cornice, with trusses, the spaces between being panelled, and is crowned by a pierced balustrade. The external wall in front is of Bath stone to the height of the first floor, and above that of white brick, with stone dressings. The building contains, on the ground floor, an entrance-hall, or vestibule, 28 feet long by 12 feet wide: at either end one large arch encloses two smaller ones, the centre impost being supported by a column, the capital of one being a study of the pea, and the other of the bean. The semi-circular heads of the smaller arches are decorated with panels, each panel having a carved study of corn, with a creeping plant peculiar thereto, and, with appropriate taste, the four varieties of corn chosen are those more particularly grown in this county, viz. wheat, barley, oats, and rye, the ground ivy and other wild creeping plants forming a background: between the two arches and filling up the centre of the large one, a bold circular panel forms the receptacle for a gas-light. The pavement is formed of squares of Portland stone, placed lozenge-wise, and divided by bands of red tiles. At one end of the vestibule is a room 12 feet by 10 feet, to be used as a cloak-room or parcel office, and which will form the office of the company. At the other end is a stone staircase giving access to the first floor. Three lobbies, each 9 feet by 6 feet, connect the vestibule with the corn hall, which is 100 feet long by 45 feet wide, the extreme height being 40 feet: at a height of 18 feet large stone trusses support a series of seven cast-iron girders, each in six pieces, securely bolted together, the whole forming a four centred arch spanning the entire area, the web of the girder being filled in with flowing foliage: wood purlins reaching from girder to girder support stout wooden sash-bars, which in turn receive the sheets of glass, each sheet being nearly 6 feet long, by 2 feet 6 inches wide, and 4 of an inch thick. The whole of the roof, with the exception of a portion of about 12 feet in width at the top, is glazed, and therefore the area of the glass is more than equal to the area of the floor. Excellent light is thus secured. A ventilation chamber is constructed along the ridge into which, by means of cast-iron gratings, the heated air ascends from the hall. Counting-rooms with glazed fronts, enclosed in arches, are constructed between the buttresses which support the girders, and in the centre of each arch is a cast-iron flap, on pivots, for the admission of fresh air: each flap is in the form of



a circular panel, with the letters C.C.E. forming a monogram and a wreath of ivy round.

The building has been erected by Mr. Simpson, of Ipswich, who took the contract at 4,938l. Messrs. Wood and Son, of Chelmsford, supplied the principal portion of the ironwork. The gas fittings are being carried out by Mr. Church, engineer at the Chelmsford gasworks.

The opening of the exchange was celebrated with a public dinner.

Mr. Chaucer, in returning thanks for the toast of his health, said,—

"It would be out of place upon such an occasion for me to defend the details of the design, whether the columns are of the proper proportions, or the capitals correct in their outline; neither will I attempt to justify the depth and projection of the cornice or the contour of the mouldings or the height of the balustrade; but what I have a right to protest against, and what I always will denounce, is a sweeping assertion that has been indulged in by some, that buildings of a purely commercial character ought to be deprived of all ornamentation, and as plain as it is possible to erect them. I cannot and I will not believe that the merchants and farmers of England would be satisfied with a building of the meanest description. I know the spirit with which they are imbued, and which, in both ancient and more modern times, has characterized the merchant princes of the world. Let us look back to former times. For what do thousands of our countrymen annually traverse the arid deserts of Africa to visit Egypt? not to look upon the inundation of the Nile, wonderful as that provision is, neither is it to dwell upon the beautiful scenery of the country, exquisite as it may be, but it is to wander through the stupendous architectural remains of her ancient Pharaohs, and there read in stone her ancient history. Look again at Greece, the Acropolis of Athens is in itself but a barren rock, but what a charm is imparted to it by the Parthenon which crowns its summit, the temple of Theseus, the Erechtheum, and the other glorious remains of her ancient rulers. Let us turn to an opposite picture: we are told that Sparta in arms was the rival of Athens, the school of hardihood and all the sterner virtues of humanity, but she scorned our art, and not our art only, for she never offered the smallest incense upon the altar of genius—and where is she now? Who of all the thousands who press on to visit her ancient sister bestow a single thought upon Sparta? for at most, a mound informs the traveller that there might once have been a city. Look again at Rome, once the proud mistress of the world; her emperors, her tribunes, and her consuls knew well the importance of architecture, and the influence it exercised over the minds of men, and I question much whether the rude barbarian, as he was marched through the streets of ancient Rome, was not more impressed by the magnificence of her Colosseum, her amphitheatres, her temples, her baths, her palaces, than by the martial bearing of her troops. And how is it in our own country? What is it that renders York more interesting to us than Leeds, and what endears Salisbury to us more than Devizes, or Carlisle than Newcastle, or Canterbury than Ramsgate? Because in the former of all these cities a noble building rises proudly to the skies, which every Englishman, whatever may be his faith or his creed, looks upon with reverence. I ask you, therefore, to be prompted with the same noble spirit with which our ancestors were imbued, and to let the interest of your capital be the admiration and gratitude of posterity."

#### TESTIMONIAL TO THE FOUNDER OF THE BUILDERS' BENEVOLENT INSTITUTION.

We mentioned that the testimonial was to be presented to Mr. Cozens, at a dinner on the 9th instant. It consisted of a service of plate, value 1000l., and a lithograph, handsomely framed, bearing upon it the names of the subscribers. The following was the inscription—

"This testimonial, with a service of plate, was presented to Mr. Thomas Cozens, June, 1857, by the undermentioned subscribers to the Builders' Benevolent Institution, as a token of their esteem, and in recognition of his philanthropic efforts and persevering energy in founding the above-named charity, established in 1847 for giving relief and granting pensions to decayed members of the various branches of the building trade and their widows."

The chair was taken by the president, Mr. Alderman Lawrence, and amongst those present were Alderman Cubitt, M.P. Messrs. George Bird (treasurer), Joseph Bird, H. W. Cooper, W. H. Cullingford, Cockerell, G. Grayson, G. Head, G. Head, jun. Samuel H. Head, A. G. Harris (secretary), J. Higgs, William Hutchings, J. Morris, G. Myers, J. Nicholson, jun. J. Peters, Thomas Stirling, John Thorne, J. Herd, T. Longman, William Seantlebury, John Newton, sen. John Newton, jun. Charles Carr, Charles Formby, J. Chapman, Jos. Lambert, T. Howard, J. Harvey, W. D. Main, Robert Yeo, W. Tremere, R. Watts, Wm. Stirling, R. Richardson, &c.

Mr. Thomas Cozens in returning thanks said, in the course of his remarks, that he was of humble origin, but he never had forgotten two golden precepts that were instilled into his mind by his father, who said "You are now leaving a good home: always endeavour to keep better company than your own, and leave the world better than you found it." Whether he had done so he would leave them to decide. As to the first his presence there that evening would prove it. With regard to the Builders' Benevolent Institution he trusted that they would, by the help of their friends, make it one of the noblest in the world.

In the course of the evening reference being made to an amended Building Bill,

Mr. Alderman Cubitt stated that it was now before the Builders' Society, who would be glad to receive any suggestions which those who felt interested might make.

#### TOTTENHAM-COURT-ROAD ACCIDENT.

THE jury in this case find that the accident arose from the cutting of the holes in the walls of 147 and 148; also from the cutting away the party-wall of 147 and 148.

This, be it remembered, it is in evidence, was not only without the consent, but against the expressed determination, of the district surveyor.

But here they stop short of what seemed an inevitable inference, and proceed in a somewhat illogical and rambling way to connect this with the district and police surveyors, and to make it appear that the accident arose out of the conflict of jurisdictions. This is so transparent a fallacy as to render further comment unnecessary.

The public have a right to know, and I believe have formed a just idea of, the really blameable parties, and have no difficulty in supplying what is deficient in the finding of the jury.

#### FIAT JUSTITIA RUAT CÆLUM.

"\* The district surveyor has no power or jurisdiction in the matter of ruinous buildings beyond that possessed by any ordinary individual—that of reporting them to the Police Commissioners, who alone are the parties possessing jurisdiction."

#### RUINOUS BUILDINGS AND ALLEGED RUINOUS BUILDINGS.

##### TOTTENHAM-COURT-ROAD ACCIDENT.

It is to be hoped your leader will tend to remove at least one of the popular delusions of the day,—that is, the responsibility of district surveyors, when an old building, sought to be converted into a new one, is let down from a want of care in the handling.

The primary cause of the untoward event we have here to lament was the removal of a buttress to an old wall, viz. the cutting down a chimney-breast, not only without the approval of the district surveyor, but against his expressed opinion, and in defiance of his authority: the wall so damaged, is further rendered ruinous by portions of the foundation being removed, and the whole collapses. Can we wonder at the result, and can there be any difficulty in affixing the blame?

No amount of supervision on the part of district surveyors, or police surveyors, can ever afford the public a sufficient guarantee against such reckless conduct.

##### AUDI ALTERAM PARTEM.

#### BAD CEMENT.

It appears by Mr. Nelson's report (which has been made public) on the fall of the two houses in Tottenham-court-road, that "Old bricks had been used without being properly bonded," and the cements did not possess the adhesive qualities of common mortar. Mr. Nelson goes on to say that the cement was supplied by well-known manufacturers and merchants, and that it is much to be regretted that respectable houses will countenance the sale of such rubbish under the name of cement.

Now, sir, the most important element in a public report is truthfulness; and this being wanting in the paragraph quoted, it is natural to suppose that Mr. Nelson has imposed upon. At one house in Tottenham-court-road the cement was supplied by a dealer in various cements, not a manufacturer. At the adjoining house a new and almost unknown material was partly used, and also some Roman cement from another dealer, who has been engaged in disposing of cements which he doubtless thinks (like good wives) have improved by keeping.

The public will agree that "respectable manufacturers" should not be made the scapegoats, either through the misinformation of the architect, or to screen the real vendors of defective materials. It is lamentable enough that such accidents should happen from want of supervision of materials whilst the works are in progress, when a little inquiry would establish, as in this instance, the value of these remarks, A MANUFACTURER.

#### FALL OF BUILDING, TEMPLE-STREET, WOLVERHAMPTON.

SOME alterations and additions have been going on in the premises of Messrs. Perry, Temple-street, Wolverhampton (Mr. Veale, architect; Mr. Powell, builder); and a few days ago, when the men were about to lay the floors of the two-pair story of the new building, a beam gave way, and the workmen were precipitated first to the floor beneath and then to the ground-floor, to their serious damage. The *Wolverhampton News* says:—

"We can have no hesitation in referring the cause of this melancholy occurrence to the failure of the cast-iron girder on which the floor rested. The girders were supplied by Mr. Brydges, of Horsley-fields, on whose manhood very free comments were made yesterday by the people who visited the premises to witness the effects of the accident. It is alleged that none of these girders were properly tested before leaving Mr. Brydges' foundry; but we hope that gentlemen will be able satisfactorily to refute this statement. The room in which the men were working is 13 feet broad, and the girders, of the wing of which it forms a part is 44 feet. The girder was seven-eighths of an inch in thickness, which is considered sufficient to bear a great weight, provided the quality of the metal be unexceptionable. When the girder was broken it is calculated that there was not upon it a pressure of two tons, including men, brick, and everything else; and this circumstance of itself shows that it was quite unequal to the purpose for which it was designed, viz. to bear to support a store-room for heavy goods. The catastrophe must have happened

sooner or later, and it is perhaps fortunate that it took place at a moment when comparatively few lives were in jeopardy. There is one circumstance which has given force to the rumours abroad respecting the quality of these girders. A short time ago one of Mr. Powell's men discovered a fracture in a girder, but not until it had received the overlying strata of bricks, mortar, &c. The fracture had been nicely "painted" in and coloured over to resemble the rest of the bar; but the superincumbent pressure had revealed the weak spot, and the false girder was ordered to be removed to the yard, where it may now be seen. No one for a moment thinks of charging Mr. Brydges with a knowledge of the condition in which this piece of metal was turned out of his foundry; but it is clear that his workmen, or some of them, have been base enough to conceal their knowledge of its state, and thus not only seriously compromise the character of their employer, but endanger the lives of their fellow-creatures. This girder was replaced by that which broke yesterday, and at the very spot where it snapped, we are sorry to say, a palpable flaw—what is called the "cold shut"—is distinctly visible."

#### THE POLICE COMMISSIONERS AND RUINOUS BUILDINGS.

A CORRESPONDENT writes,—"Your able leader of last week ought to remove much misconception, and lead to improvement in an important particular. You have pointed out the great amount of labour and responsibility thrown upon the police surveyor, whose duty it is to make the surveys agreeably with the second part of the Building Act, and the miserable remuneration awarded by the Government for carrying on this onerous duty. The gentleman who is now acting as surveyor, Mr. Calger, was appointed, on the dismissal of the deputy, some three months since, to make all surveys within the limits of the before-mentioned Act, and up to the present time has made, I have reason to know, more than 612 surveys, reported the result to the commissioners, and filled in the original notices of works to be done, and instead of having twenty or thirty notices in his pocket, as you say, has had as many as seventy at one time in arrears; although he has devoted on the average no less than sixteen hours per diem. He has been unable to make the greater portion of these surveys within the ordinary hours of business, in consequence of having to attend one, two, and sometimes three police courts daily, to support summonses against owners for non-compliance with notice: during the three months he has given evidence in support of 688 summonses and adjournments.

On his giving notice to the commissioners, some fortnight since, of his not considering himself responsible should any accident occur through inability to make his survey as soon as the nature of the case might require, a second surveyor was appointed, and the district divided into two parts. Notwithstanding this alteration, it is utterly impossible to keep pace with the informations, which of course have increased wonderfully since the accident in Tottenham-court-road.

With regard to any ill feeling existing between the police surveyor and any district surveyor, I am quite sure there is nothing of the kind.

#### CHURCH OF THE HOLY TRINITY, HASTINGS.

The Church of the Holy Trinity, Hastings, represented by our engraving, is for a parish that formerly existed under that name. The first site was rather out of the town, and there were difficulties which induced the promoters to abandon it, and to apply for the present site, which is from the Crown. It is situated in the way leading from Hastings to St. Leonard's, and it will be the only church at Hastings on a flat, all others being accessible only by steps and other means of ascent; consequently it will be of material advantage to invalids.

The church is designed with a nave and south aisle and chancel, with polygonal apse. The tower will stand diagonally with the side of the apse, this arrangement being the result of the peculiarity of the site. The north side will be gabled for the purposes of light. It is being built of local stone of two kinds, the yellow and grey sandstone. The interior is ashared with local stone. The style is Middle Pointed. The contractor is Mr. Howell, of Hastings. Mr. S. S. Teulon is the architect.

The only portion now erecting is the nave and north aisle, the funds in hand being sufficient to do more than this.

RETENTION OF DRAWINGS BY A BUILDER.—Can you inform me what legal steps can be taken to secure the return of drawings sent to a contractor to be worked from, and afterwards retained by him?

A. B.

\* \* \* Summon him before a magistrate.





CHURCH OF THE HOLY TRINITY, HASTINGS.—MR. S. S. TEULON, ARCHITECT.



## STAINED GLASS.

**St. Paul's Church, Stalybridge.**—A stained-glass east window has been put up in this church. It is the gift of Mr. James Buckley, and the work of Mr. Wailes, of Newcastle-on-Tyne. In the four lower compartments, there are scenes illustrative of our Lord's humiliation, viz.,—His agony, bearing the cross, crucifixion, and burial. In the upper four are illustrations of His exaltation, viz.,—the transfiguration, resurrection, ascension, and sitting in heaven. In the wheel at the top of the window is a representation of St. Paul preaching on Mars'-hill.

**Kidlington Church.**—A stained-glass window has just been placed in the west end of Kidlington Church, in memory of the late Rev. Dr. Richards, rector of Exeter College, Oxford, and vicar of the parish. It contains a number of sacred subjects, the idea intended to be embodied in the whole design being the recollection of works of piety and charity for which his memory is honoured. The crucifixion of our Lord forms the central subject: surrounding it are representations of fourteen scriptural subjects illustrative of the chief modes in which active charity is wont to be exercised—clothing the naked, feeding the hungry and thirsty, visiting and relieving the sick and suffering, teaching the ignorant, &c. Seven of these are from the Old Testament, and seven from the New. The window was executed by Mr. O'Connor, of London.

**St. Martin's, Worcester.**—The stained-glass memorial window at the east end of St. Martin's Church, Worcester, has been completed. Messrs. Hardman, of Birmingham, were the artists. The window is divided into five compartments, having a border running round it, containing heads of prophets and the sacred monogram interspersed. In the lower portion of the centre compartment is represented the Ascension of Christ, the Apostles being disposed on either side. The upper portion is coloured as representing the heavens into which the Saviour is ascending, with angels, and surmounted by the sacred emblem of divinity. The stonework is by Mr. Norman, of Worcester.

**Glasgow Cathedral.**—The report by the committee appointed to consider the subject of filling the windows of Glasgow Cathedral with stained glass, has been published. The committee state that they have "adopted every means to ascertain the present state of glass-painting in Great Britain;" and that it "would naturally have been agreeable" to them to "name one or more British glass-painters as competent to design and execute windows for the cathedral." Their investigations, however, have failed to lead them to this result; and as they consider the glass-painters of Germany and Belgium pre-eminent, the committee express their opinion that the subscribers would "do well to employ the Royal Factory of Munich in the execution of the windows of the cathedral." The windows adapted for the reception of subjects are forty-three in number; and it appears that by the London, Paris, and Munich estimates, the total cost for forty-two windows (exclusive of the great east window, subscribed by Government), at 2*l.* per square foot, is 9,883*l.* 10*s.*—A correspondent of the *Scotsman*, Edinburgh newspaper, writing on the subject of the resolution of the committee to go abroad for the stained glass for Glasgow Cathedral, and expressing the painful feeling excited by such a resolution, says,—"It is very well known that we have men who are fully competent to do the technical part of the work equal to anything they can do on the Continent. We saw an extract from a report on the stained glass in the Great Industrial Exhibition at Paris, in 1855, by Bontemps, who is a first authority in such things, and he said, that although Britain had sent little in the way of painted glass to the Exhibition, yet of what he did see, he affirmed it was equal to anything that was done on the Continent. Now, our specimens of stained glass have been done by the glass-stainers themselves without the co-operation of artists, so that we cannot take the windows that have been lately put up in different places in Britain as specimens of what might be done if they employed artists to make the designs. \* \* \* If the committee carry out this report, and give the commission to Munich, what will be the result? They will give the order to a glass-stainer there, who of course will try to make as much money out of his estimate as is consistent with the work being thoroughly done, which no doubt it will be; but then, if they are accustomed to do so much in that way at Munich, they will have numberless designs by the German artists for all kinds of subjects, so that they will not have to go to the expense of procuring new designs; they will just cut down or stretch out, as the case may require, all the old material they have at hand. So that the Glasgow people, glorying in their magnificent windows from Munich, will, after all, only get the leavings and second-hand properties of the German school; and when we know (as any one who has studied the subject does know) how utterly conventional, and,

therefore, dead, the most of German art (especially sacred art), is, what shall we gain by going to Munich? A very perfectly manipulated stained-glass window (but, remember, not more so than we could do here), one whose design is tame and characterless, as if turned out by a picture-making machine."

**Mottram (near Manchester).**—A stained glass memorial window has been placed in Mottram Church, in the basement story of the tower, by Mr. Joshua Reddish, in memory of his deceased parents. The window is divided into three compartments, representing Charitable Relief of the Hungry, the Thirsty, and the Stranger. Messrs. Edmundson and Son, of Manchester, designed and executed the work.

## OXIDATION OF STEAM-BOILERS.

In a late number of your journal a correspondent wished to be made acquainted with a means of preventing the internal oxidation of steam-boilers. In reply, I would suggest the propriety of having small portions of zinc plate attached at various points inside the boilers, care being taken to secure perfect metallic contact between the zinc and iron. Under such circumstances, the boiler becomes a kind of slowly-acting voltaic battery, the zinc being the positive metal, which is gradually, although almost imperceptibly dissolved by the various salts, &c. contained in the water, while the iron becomes the "negative plate," conducting away the electricity formed, without being itself at all acted upon.

It may perhaps be remembered that some time back I suggested, through your columns, a like contrivance, with a similar view, in relation to iron water-pipes. Years ago the sagacity of Davy first proposed the application of this principle for the protection of the copper sheathing of ships' bottoms, which, indeed, was successfully accomplished: unfortunately, however, after remedying one evil, another presented itself, for the mollusca, and other marine animals, no longer deterred by the poisonous copper salts formed by the action of sea water before this principle was carried out, encrusted all parts of the hulls of vessels, below water-line, to such an extent as seriously to retard their motion.

Now, however, with quick voyages and efficient scraping machines, this latter disadvantage does not apply so seriously.—WESTWORTH L. SCOTT.

## TRIAL OF SEWAGE MANURING AT PARIS.

A SPECIAL meeting was held at the Agricultural Society's, on the 10th inst. when Mr. E. Chadwick, C.E. read the translation of a report made by commissioners in Paris on some trial works, to determine the applicability of liquified town manure to various species of commercial and other plants. The results were stated in the report to have been favourable, all showing an increase over the culture in the old form by stable manure.

Mr. Chadwick addressed the meeting at some length, both before and after he had read the report, and was followed by the Earl of Essex, confirmatory of Mr. Chadwick's views in favour of the sanitary results of the system which he has so long advocated.

A long conversational discussion then ensued, in the course of which M. de Trebournais said he thought the outlay of capital required would be an obstacle to the extension of the system in France.

The Earl of Essex said he was confident that the outlay would pay him well if it were for the distribution of plain water alone. Take the outlay of capital at 6*l.* per acre, what was that to the power of saving a crop by a watering in dry weather? He estimated that he could throw in water, or the liquid manure, at the expense of about 1*l.* a ton, or 100 tons, or an inch deep of water on an acre, at an expense of about 8*s.* and what was that for the power of saving or advancing a whole crop?

## EXCOMMUNICATION OF WORKMEN.

The following placard has been addressed "to the plasterers of London:—"

"Whereas, on the 22nd of May, 1857, the plasterers in the employ of Mr. Frick struck for 6*s.* 6*d.* per day; and while thus on strike, two men, named — and — went to work at the above place for 5*s.* — having struck for wages, left Mr. Frick on the 25th instant, and on the same day deliberately re-engaged himself at the terms above stated. It is earnestly hoped, that in consideration of the men now on strike, the plasterers will treat — and — with the contempt they deserve."

We can hardly believe that those who prepared and approved of such a placard for publication understood its ruinous and cruel power over the poor fellows against whom it is levelled, like a "bell, book, and candle" excommunication of the dark ages of priestcraft. Every workman has a right to resist oppres-

sion, or what he conceives to be oppression, on the part of his employer; but what is this but the most tyrannical and merciless oppression of workmen by workmen? What ought those to expect from masters who thus can treat their own brethren? There are masters who are both harsh, tyrannical, and inconsiderate: what sort of example is this to such masters as these? Fellows capable of worrying each other to death like this, such masters will say, deserve no mercy—no consideration: they are mere unfeeling brute beasts of burden, out of whom we must just get what we can as best we can. How differently workmen expect, and rightly expect, to be treated by reasonable masters, from the way in which such persecution as this would seem to show that they are capable of treating their own fellows, whom, with an incontestable claim to their own sines as their own free capital, these free Britons treat as if they were in reality nothing but slaves. They may do as they please about working themselves at any but their own price, but they have no business to prevent others from doing so.

## HEALTH OF ST. GEORGE'S, HANOVER-SQUARE.

DR. DRUITT, as medical officer of health for St. George's parish, Hanover-square, has published, in the form of a letter to a vestryman, a sixpenny tract, giving some idea of the duties of a medical officer of health, and various statistics in reference to the state of his own parish in particular. The interest and feelings of the vestryman himself are specially appealed to by such remarks as the following:—"One of the places where small-pox appeared was the room of a journeyman, who, in this room, surrounded by his sick children, was making coats for the customers of a fashionable tailor in a fashionable street. Another was the room of a laundress, employed in getting up gentlemen's white ties. Another was inhabited by the family of an upper servant at a house in Berkeley-square. I mention this in order to show that there is no class, however elevated, which may not be concerned somehow in the healthiness of the poor man's home,"—and to convince "vestrymen," we dare say, as well as others "well-to-do" in the parish, that even in so distinguished a district as St. George's, Hanover-square, it may be as well, after all, not to grudge the cost of a medical officer of health to look after such matters. An inference which Dr. Drutt draws from some statistics into which he enters is, that "this parish contains two classes of persons; that the mortality of one class is very small, and that of the other far too large; and, further, that the places in which cleanliness and drainage are most deficient, appear to be precisely those in which most deaths have occurred." One other inference to which he has been led by reiterated experience is worthy of note, namely, that "in dirty houses the rent is always in arrear," an inference which it is to be hoped that many a vestryman and other gentlemen who may happen to be the landlords of houses let out ultimately in apartments to the poor, will meditate on with the view of calculating how, in such cases, they can most effectually prevent the rent from getting into arrear.

## THE NEW GOVERNMENT BUILDINGS AT WELLINGTON, NEW ZEALAND.

On the 9th of March, in the present year, the foundation-stone of the buildings intended for the use of the general and provincial legislatures, at Wellington, New Zealand, was laid by "His Honour the Superintendent," in presence of a large concourse of spectators.

"Plans having been publicly called for," says the *Wellington Independent* of 13th March, in its report of the laying of the stone, "premiums were awarded to three out of about ten designs, but neither of them proving exactly suitable, the clerk of the works (Mr. George Single, R.E.), to whom the first premium had been awarded, was finally intrusted with a commission to prepare fresh designs in a style of architecture which has been found well adapted to the national features and peculiarities of this locality. The tender of Mr. C. R. Carter, being the lowest, the contract for the building was entered into with him a few weeks ago."

In explanation, at least, of, if not in contradiction to, this account of the matter, however, we have been appealed to by Mr. Charles Moore Igglesden, of Wellington, architect (draughtsman to the Survey Department at Wellington), on whose part we are given to understand that the design was his; that the competition committee declared it "to be the best in every respect," but that from its exceeding the estimate it was subjected to alteration at the hands of Mr. Single; and Mr. Igglesden says he does not wish to deprive Mr. Single of whatever credit may be due to him from the preparation of the details and working drawings, or from the superintendence of the work, and lays no claim to such credit; but Mr. Single, as well



as the members of the competition committee, and other influential persons interested in the erection of the edifice, being all perfectly well aware that the design for the facade is copied, line for line, save the substitution of zinc for brick chimneys, and the removal of two side porches, from a drawing presented by Mr. Iglesdon himself to the committee shortly after they had awarded the premiums; the smallest and most satisfactory recompense he could have expected for the aid he had given towards the erection of the edifice would have been an acknowledgment equally public with that which, through the medium of the local press, and by the inscription on the foundation plate, had been already paid to Mr. Single.

The new edifice will stand on a picturesque and elevated site at Wellington. The building will be 40 feet high. The plan may be divided into three portions, comprising two wings connected with a central two-storied building. The central part recedes from the front line of the two wings about 6 feet, and contains all the offices of the Provincial Government. The two wings are devoted to the use of the General Assembly.

The style is Gothic, but not the Gothic of any particular period, the different styles having been blended. The gables of the principal wings are pierced for large lancet-headed windows, in the perpendicular style; while the porch with tracery window in its gable is entered by a doorway in the Tudor style. The internal finishings are red pine and mahogany, varnished, which will display the beauty of these New Zealand woods. The external timber is totara. The foundation is constructed of brick and piles, and the roof covered in with slate. The estimate was 6,688*l.* and the contractor was bound to finish the building within nine months. The site, which comprises two acres, cost 700*l.*—the levelling about 150*l.* or 200*l.* and the furniture is estimated at about 500*l.* making a total of about 8,100*l.*

#### ARCHITECTS' REMUNERATION AS WITNESSES.

YOUR correspondent in the *Builder* of the 6th inst. is not quite right as to so much of his statement as relates to enforcing payment for loss of time as a witness. He overlooked the case of Collins *v.* Godfrey, 1 Barn. and Adolph 950, in which it is decided that a witness can only recover expenses, and not for loss of time. The plaintiff was a solicitor, and sued for 6*l.* 6*s.* for six days' attendance in court. A verdict was given against him, with leave to move to have it entered for him for the 6*l.* 6*s.*; but the Court decided that it is a constitutional duty in every one to give evidence as a witness on a subpoena, without being entitled to recover for loss of time, although the practice of the Court was to allow for loss of time according to a scale, *if paid*. On taxing costs, if Mr. Edmonstone had been paid 3*l.* 3*s.* that would have been allowed; but, looking at the above case, it appears that he cannot now recover anything beyond what he has already received. A. B.

\* \* If this be so, it behoves architects to make a special arrangement in each case, before undertaking any business likely to involve attendance at give evidence.

#### COMPETITIONS.

*Kilmainham.*—The *Freeman's Journal* says,—"The Board of Superintendence of Kilmainham Jail awarded the premiums offered for the three best designs for enlarging and remodelling the prison to the following architects, viz. Mr. John M'Curdy, first; Mr. E. H. Carson, second; and Mr. Gray, third. It is proposed to give greatly increased accommodation for prisoners on the separate system."

*Chichester Cemetery.*—The sub-committee appointed by the Burial Board, to examine and report on the designs sent in for the new cemetery, selected three, from which they recommended the committee to make choice. At a recent meeting of the committee, they decided, by a majority of eleven to seven, to select the design of Mr. Rakes, of Portsea, as being in all respects the best.

*Alcester Corn Exchange.*—The directors have selected the plans by Mr. Edward Holmes, of Birmingham, for the above building. There were twenty-one competitors.

*Hivford Corn Exchange.*—The local Corn Exchange Improvement Committee say in their report, "That the plans furnished by Mr. Evans, of London, approach nearest to the requirements of the case: they would, however, recommend rather more additional height, and some few deviations in minor details. The model upon which these are founded (it is admitted by their author) is a corn exchange recently erected at East Dereham; and, as they comprise an entire new feature, viz. a glass ceiling, it was thought desirable that a

deputation should visit Dereham to inspect the exchange there, and make such inquiries as to the nature of the case might suggest." Mr. Evans has since been commissioned to carry out his design.

#### THE HANDEL FESTIVAL.

CRYSTAL PALACE.

It is a laudable feeling to desire to do British public to celebrate the anniversary of the death of a man whose genius before such celebration is actually forgotten if the flight of Time were not swift enough to give place with our expectancy, that—like the runaway steed that he cannot stop—he thus propel what we cannot arrest, and anticipate by two years the observance of a solemn festival that should revive the memory of an irreparable loss, and at the same time complete the period of a century since such befel the world. But there were good reasons for this premature observance; and even had there not been, so great is the homage paid to Handel in this country, that the trammels of fixed periods are no longer regarded in its offering,—the revolving cycles of time no longer form the limits of its fulfilment, and, since the establishment of the Sacred Harmonic Society, the constant performance of his best works may be regarded, in some respects, as an annual ovation to his memory.

However, the existence of a building of gigantic dimensions within a few miles of the metropolis, whose vast area might accommodate an almost unlimited audience, and at the same time give the opportunity for the assembling of a crowd of vocal and instrumental performers, numbered by thousands, whose united efforts might give an effect to the choruses of the great master of sacred music never before equalled in the country, was an opportunity no longer to be neglected. At the same time a full and fair means was afforded of testing the acoustical properties of the Crystal Palace, which may now be considered as fully ascertained, and the result of which, if not entirely satisfactory, has at least set at rest certain doubts and fears of an opposite tendency.

There can be no doubt that an edifice constructed of brick and stone is far better adapted for the concentration of sound than one built of iron and glass; and further, that the unlimited length of the nave of the Crystal Palace allows too great a dispersion of such sounds, and its numerous parts occasion too great an echo, to give precisely the effect that might be expected from so large a body as 2,500 executants. Nevertheless, it is our pleasure to record a great success, in the general acceptance of the term; and those who have had the good fortune to attend either of the performances that constitute the Handel Festival of 1857, have cause to congratulate themselves at having witnessed the grandest musical congress that the country has yet assembled, and the effect of which upon the futurity of the art may produce results hardly yet contemplated.

The Orchestra, which occupies the west end of the great central transept, occupies an area of 14,784 superficial feet, and contains 10,102 cubical feet of timber. The seats form concentric segments of a vast circle, of which the conductor's seat forms not quite the centre. Next to the conductor are the seats for the band, which comprises nearly 400 of the best professional and amateur instrumentalists of the metropolis, led by Salton and Blagrove; and behind the band are the seats for the chorus, who, upwards of 2,000 in number, in the divisions of sopranos, tenors, altos, and basses, radiate up to and on each side of the great organ, built by Messrs. Gray and Davison, which covers an area of 42 by 26 feet, and is supported upon a platform of great strength. A popular account of this instrument, now profusely circulated, saves us the necessity of more than alluding to it; and indeed any attempt at a technical analysis of its parts, or even an abstract appreciation of its effects and merits, would be here out of place.

The effect of the vast volume of sound produced by this gigantic orchestra was first tested on Saturday last, when the full rehearsal took place, which consisted of selections from the three Oratorios chosen for these performances, and at which the powerful effect of the chorus was made so manifest, as to leave no reasonable doubts of the final result of the undertaking. It was then arranged by Mr. Costa that the sopranos and altos should change places with the tenors and basses in the orchestra, by which advantageous change the aspect of the orchestra was materially improved by the presence of the 750 ladies in the centre of the mass, whilst the musical effect was also much improved. One more observation we made at the rehearsal, and which we did not at the performance see much cause to modify; namely, that the solos, as a rule, lose much of their beauty in the vast area, the piano notes being almost inaudible in the further portions of the transept. The same may be said of floral passages, which lose much of their effect, and also the lower notes of both basses and contraltos.

On the other hand, the high and sustained notes, clear articulation, and the solo annunciation, tell with great effect; and solo singers at the Crystal Palace must bear in mind, that greater exertion is necessary to fill that vast building than need be employed in Hanover-square or the Strand.

The *Messiah*, which was chosen for the performance of Monday, is the sixth in order of composition of these sacred writings of the immortal Handel, being preceded by *Esther*, *Deborah*, *Ataliah*, *Saul*, and *Israel in Egypt*, and, from the dates in his own handwriting in the original manuscript, would appear to have been begun and ended in the incredibly short period of twenty-two days. It was first performed in Dublin on the 13th April, 1742. In March, 1789, Mozart added his extra instrumentation to the original score; his intention being to supply in the orchestra such effects as Handel would himself have produced in accompanying his own work upon the organ. And a comparison between the two scores of the *Messiah*, is another proof of the inventive genius of Mozart, who thus, thirty years after Handel's death, could pass from the antiquated style of orchestral writing of Handel's period to the rich and beautiful style that renders the works of Mozart a model for all time.

The performance of Monday was a very great success. A bright day, a high expectation, and a genuine love of good music, induced thousands of the *élite* of London to betake themselves thither to the Crystal Palace, and when, after the usual popular ovation to Mr. Costa, that conductor raised his baton, every voice was hushed to silence, and the magnificent orchestra proceeded with the point and decision of a single instrument to execute the national anthem, the area of the transept presented such a scene of rank, fashion, and musical combination, as will not easily be forgotten by those present.

The *Messiah* is a work so potent to the world—its leading features so well known to the public generally, that, when entrusted to good hands, as it was on Monday, the task of the critic becomes easy, as it would be an impertinence to go through the various portions of a composition that has been criticized and analyzed already so thoroughly. All that we need do therefore in the matter, is to give a brief opinion upon its general execution upon this occasion. The words of the *Messiah*, and of *Israel in Egypt*, consist simply of passages of Scripture, chosen to illustrate a particular story, but put together without dramatic form or impersonation. *Judas Maccabæus*, on the contrary, is a sacred drama, like the rest of Handel's compositions of the class, written in verse with a regular plot, and a number of dramatic personages, who sustain certain characters throughout. Whether it be the associations called up by the strains of the strains of Handel with his words of the inspired writers in their purity, or the extra beauty of the melodies and grandeur of the choruses, or both, we will not now consider, but certain it is that the two former Oratorios have the preponderance of admirers.

The first chorus of the *Messiah*, "And the glory of the Lord," at once proclaimed the advantage gained by the new arrangement of the female voices, and gave an earnest of what was to follow. "For unto us a child is born," was a noble performance, and was unanimously redemanded, but the conductor was inexorable. After "His yoke is easy," the orchestra had a half-hour's respite, and the audience took advantage of it for refreshment. Of the remainder of the choruses, we need only say that the "Hallelujah" (during which, according to established custom, the whole assembly remained standing) was grand to the highest degree, and impressive beyond description. The concluding chorus, "Worthy is the Lamb," was almost equally astounding, and the "Amen" brought this unprecedented grand performance to a close in a becoming manner. The performances of the soloists, who, it is right to observe, exerted themselves to the utmost under such trying conditions, were duly appreciated. The instrumentalists played with marvellous precision and force, showing at once the sources whence they were derived.

The second of these grand musical *fêtes* took place on Wednesday, in presence of Her Majesty and the Royal Family, with a success surpassing even that of Monday. Less dust, a milder wind, and an equally blue sky, made the day more agreeable than its predecessor, whilst a considerable increase in the number of visitors, and the presence of royalty, gave greater *éclat* to the proceedings.

The oratorio of *Judas Maccabæus*, though not comparable to the other two, is still one of the greatest of Handel's compositions, and its execution upon this occasion was even better than that of its predecessor. In several of the choruses of this oratorio brass instruments have been introduced by Mr. Costa. One of the finest performances of the day was the chorus, "We never will bow down," which was received with tumultuous applause. "See the con-



quering hero comes" was redemanded, and this time with success, for the Queen siding with her subjects, the point was immediately conceded.

Whether the presence of royalty occasioned greater ensemble in the band and chorus we cannot say, but certainly the soloists were more successful than on Monday, and the chief honours of the day seemed, by general consent, to be awarded to Mr. Sims Reeves.

After *Judas Maccabæus* (at the Queen's desire) the Old 100th Psalm was sung,—her Majesty and the whole assembly standing.

#### SCENERY AND THE STAGE.

*Her Majesty's Theatre.*—The revival of Mozart's *Don Giovanni*, perhaps the greatest opera ever written, with more attention to scenery and "getting up" than has been usually bestowed upon it, has proved a great success, notwithstanding the fact that most of the singers engaged in it are but winning their spurs from the London public. The new tenor Giuglini is a decided acquisition, and Madame Spezia is improving greatly. Moorish architecture has of course been called in to aid the general effect of the scenery: the ball-room, at the end of the first act, is a fine interior in that character. A peculiar effect in this is obtained by keeping the masses on the stage dark, the upper part of the apartment showing a blaze of light.

*Royal Lyceum Theatre.*—No artist should allow the opportunity to pass, without witnessing the magnificent series of studies presented by Madame Ristori in every one of her parts. She is in truth an actress of surpassing power, and the public owe something to Mr. Gye for enabling them to witness it. The new tragedy, *Camilla*, affords opportunities for the display of her highest skill.

The late *Douglas Jerrold*.—We go out of our way a little, in consideration of long knowledge of one to whom the world is much indebted, to assist in announcing to the public that a series of musical and other entertainments has been organized by a committee of distinguished literary men, for the advantage of the late Mr. Douglas Jerrold's family. Amongst the entertainments are Lectures by Mr. Thackeray and Mr. Russell, a dramatic entertainment under the management of Mr. Charles Dickens, and others in which some of Mr. Jerrold's own dramatic pieces will be performed. For particulars of all we may refer to the advertisements in the daily papers; and we hope that many of those who have laughed with Jerrold in *Punch*, or shed a tear with him in "Black-eyed Susan," will come forward to aid in raising a fund for those he has left behind him.

#### METROPOLITAN BOARD OF WORKS.

At their last weekly meeting on the 12th inst. the Board met to consider and decide on the reports of Mr. Marrable, the superintending architect, and on a variety of architectural and building applications, the following amongst others being the most noticeable:—

*Proposed new Iron-built Bazaar, near the Regent-circus.*—This application was by Messrs. Doyne and Garrett, of 2, Derby-street, Parliament-street. The drawings showed the design for a bazaar proposed to be built upon vacant ground, bounded by the back premises of the houses forming portions of Regent-street, Oxford-street, Great Castle-street, and John-street, and adjoining the Regent-circus, Oxford-street. The proposed building is to be mainly constructed of iron and glass, and is to consist of one central passage, and two side aisles, and a square compartment or transept, surmounted by a dome. The length of the former is to be 146 feet 6 inches, by 31 feet 9 inches wide, and the latter about 59 feet square. The height of the central aisle is to be about 21 feet from the floor level to the springing of the semi-circular arched roof, each roof rising about 8 feet 6 inches to the crown. The side aisles are to be covered with lean-to roofs, sloping from the springing of the central roof, so as to give a height of 7 feet, where they pitch upon the outer columns. Galleries will run round the whole of the building, under the side aisles, supported between the columns by rolled wrought-iron bearers, 7 inches deep, with top and bottom flanges resting upon and bolted to corbels cast on the columns. Under these circumstances, the superintending architect said he had no hesitation in recommending the Board to approve of the construction of this building, it being understood that the foundations shall be put in as the district surveyor shall consider necessary from the nature of the ground, and the weights to be supported, and that the whole will be securely put together and bolted up under his careful supervision.

The application was granted under certain conditions.

*Leicester-square.*—An application was made by Mr. J. F. Matthews, of Reigate, Surrey, on behalf of Messrs. Hampton and Russell, of Nos. 10 to 16,

Leicester-square, for consent to build part of front of their premises, 10, Leicester-square, bodily forward over the existing shop, so as to range with the face of their adjoining premises, and thus make one uniform elevation. The extent of the new front would be about 12 feet before the present front. All the "main" fronts of buildings on this, the north side of the square, ranged in a straight line, with the present recessed portion of Hampton and Russell's premises; but there were three one-story shops in a row towards Coventry-street, projecting from 12 to 13 feet, and ranging with the fronts of their shops. Although there was a shop in front of the house which it was desired to bring wholly forward, the superintending architect did not consider it desirable to comply with the application, as the building would present a large block standing before the main fronts over the adjoining shops, and to that extent impede the ventilation of the thoroughfare. It was, moreover, unadvisable to allow it, as it would open the door to numerous applications for structures over shops of a less slightly character, such as photographic rooms, to the disfigurement of neighbourhoods in general, and he therefore could not recommend the Board to grant the application.

It appeared that the Board of Works for the Strand district objected to the intended operation on the ground that at a future time the frontage might be required to be kept back in connection with the intended new street from Crabbourne-street to Coventry-garden, and for other reasons.

After some discussion the subject was adjourned.

An application for the construction of a shop on the forecourt of No. 2, Upper Craven-pale, Baywater, was refused, on the ground that two other shops had been built there in spite of refusals of the Board and an appeal, and in respect of which shops so erected, demolition had been commenced by the local authorities.

It was reported that there was a vacancy in the surveyorship of the western division of the City of London, through the decease of Mr. John H. Stevens, elsewhere mentioned.

#### CHURCH-BUILDING NEWS.

*Colchester.*—The state of the fabric of St. Peter's Colchester, the metropolitan church of the town, and the most prominent one in it, has for some time demanded attention, and the tower in particular now requires substantial repair. It has been thought advisable to attempt to raise, by subscription, a fund for the complete restoration of the church, both internally and externally. By a re-arrangement of pews, the objectionable features may be removed, and accommodation provided for at least 800 additional persons. The tower, in addition to an utter want of architectural design, has been officially pronounced unsound. Upwards of 1000 would be required simply to effect what is absolutely necessary, without any improvement to its architectural appearance. A larger, but not an extravagant expenditure, would effect all that is necessary for strength, and would, at the same time, change its present bald and unarchitectural look into that of a substantial Gothic tower, with suitable buttresses and battlements, &c. The windows and roofs would require corresponding restoration. The chancel is susceptible of much improvement, and other minor alterations would be desirable, but no material alterations are contemplated in the galleries beyond the raising of the roofs above them. It is believed that the whole expense of these restorations will be about 3,000*l*. A committee has been appointed, and donations and subscriptions are being collected at the bank of Messrs. Mills, Bawtree, and Co. and by the vicar and other members of the committee. Three plans have been sent in.

*Braintree.*—The restoration committee of Braintree Church have resolved to extend the north aisle, and that Mr. Pearson, the architect, be instructed to proceed with the extended plan. It appears that this alteration will give sufficient space for nearly 100 additional seats, whilst it will cause an extra outlay of about 225*l*, a considerable portion of which, however, is already subscribed. The nave roof, tower, and spire portions of the restoration work are nearly completed.

*Wheatley.*—The consecration of the new church at Wheatley, according to an Oxford paper, took place on the 10th inst. The edifice, which, it says, is a new erection and on a new site, is built in the Italianised Decorated style, by Mr. John Castle, of Oxford, builder, from a design by Mr. G. E. Street, of London. It will accommodate 523 persons, and the sittings are all free. The Rev. E. Elton gave the land for the site, and for the burial-ground attached, in addition to a liberal subscription. The building has been erected at a cost of something above 2,000*l*.

*Over Stowey.*—The chancel of the parish church of Over Stowey has been improved during the past year. An oak roof has taken the place of a plaster

ceiling. Three new windows of Early Decorated design have been put up, in Coombe-down stone, and all filled with painted glass, executed by Messrs. J. Hardman and Co. of Birmingham. The eastern window is in memory of the late vicar: the subjects are the Crucifixion, the Virgin Mary, and St. John. One of the side windows is the gift of the family of the late Mr. Ward, as a memorial to him: the subject of it is the Good Samaritan. The third window is the gift of Lady Mary Labouchere, and the subject of it is, Our Saviour blessing Little Children. The old font has also been restored by the parishioners, and its carved oak cover has been cleansed from its many coats of paint. The work has been done under the directions of Mr. C. E. Giles, of Taunton, Architect.

*Moseley.*—The parsonage-house in connection with St. Mary's, Moseley, has just been completed under the superintendence of Mr. Edward Holmes, at a cost of about 1,300*l*. The style is Gothic. White brick has been used in the place of stone for the window-dressings, strings, &c. with pointed arches to the doors and windows, and relieving arches in alternate black and white brick have been inserted with good effect. The roof is covered with alternate courses of ornamental blue and red tiling, with projecting gables finished with richly carved oak barge-boards and finials.

*Manchester.*—We are requested to state that all the stone work, in the screen put up at the cathedral, as well as the carving, was done by Mr. T. R. Williams, sculptor.

#### Books Received.

##### VARIORUM.

"A SYNOPSIS of the Patent Laws of Various Countries," by A. Tolhausen, Ph. D. (Taylor and Francis, Red Lion-court, Fleet-street), has been issued with the view of enabling inventors to acquire at one view a practical knowledge of the patent laws of various States. It is said to have been prepared entirely from authentic documents, mostly official, and contained in the library of the Great Seal Patent-office, in Chancery-lane, the author having translated the laws in foreign languages for the Commissioners of Patents. The Roman Catholics, on their own showing, are making rapid changes "from dark, dungeon-looking chapels in back streets, to magnificent and spacious churches," and they have just published "The Catholic Hand-book; a History of the Metropolitan Missions" (Dolman, 61, New Bond-street), in which there is "a description of one hundred churches and chapels, of the dioceses of Westminster and Southwark." Amongst these there are not a few edifices of an important character, but the dioceses in question spread about through numerous suburban towns and villages; and, amongst the chapels described, are some which require to be pointed out as,—occupying the east wing of a mansion,—a large room serving as a chapel,—a small tenement in the village, &c. Lieutenant-general Sir C. W. Pasley, has had published (Dutton, Cockspur-street), a tract developing a "Plan for simplifying and improving the Weights, Measures, and Money of this Country, without materially altering the present Standards," an essential consideration in such a question as we have often urged. Sir Charles's mode of simplifying the coinage, is to base all on the farthing, ten of which to form a silver cent, ten cents a florin, and ten florins a pound; other coins to be gradually withdrawn, and florins substituted for the silver ones and cents for the copper ones, except the farthing. For measuring works of architecture and engineering, he proposes that the foot and its decimal subdivisions shall be the unit, all workmanship measured by lineal measure to be priced by the foot, the 10 feet, or the 100 feet, not by the yard or rod. The foot referred to, he proposes to subdivide thus:—ten tenths parts, 1 imperial inch; 10 imperial inches, or one hundred parts, 1 foot. As a new measure of solidity, he proposes 1,000 cubic inches 1 cubic foot. Of the French revolutionary decimal system in general Sir Charles speaks with contempt. From a small tract on "The Public Health Act, its Application to and Operations at Burley, in Wharfedale, by a Ratepayer," reprinted from the *Leeds Mercury* of 25th May, it appears this little village has had sewerage works done at a cost of about 1,430*l*. The rateable value of the district is 6,453*l*, so that one-fourth of what the Public Health Act would have allowed the local Board to expend has only been required. The repayment of the sum borrowed is being made with interest of 5 per cent. by instalments of less than 100*l* a year. A rate of 6d. in the pound on building, and 1½d. on land suffices. The result of sanitary efforts in this model village has already "prolonged lives, improved health, and increased comforts." A tract on "The Licensing System, its Origin and Working, as described in Reports of Select Committees of the House of Commons," shows up the



abuses of this system, and recommends free trade in beer, wines, and spirits, by way of preventing the extension of "this demoralizing system," under which, it is observed, Mr. Hardy now seeks to add 41,547 beer-houses, at present exempt from its influence, to the 89,866 public-houses already licensed. This is a different sort of remedy for a "demoralizing system" than the Maine Liquor Law! The influence of builders and brewers under the licensing system is denounced, and that influence certainly does generate its own class of evils, as we have ourselves shown, but whether free trade in drink would not be a remedy ten times worse than the disease is another question requiring some consideration.—A shilling volume, published by Routledge and Co. Farringdon-street, and titled "The Common Objects of the Sea Shore, including Hints for an Aquarium, by the Rev. J. G. Wood, with illustrations by G. B. Sowerby," is one of the best written and liveliest little volumes on popular natural history we have ever seen, and must form an indispensable guide and companion to the amusements of the aquarium.

### Miscellaneous.

**WORKMEN DISOWNING THE CENTRAL TRADE UNION.**—A public meeting, numerously attended, of the workmen (chiefly bricklayers) employed in the building trades of Nottingham, was held there on 5th inst. Mr. W. Simpson was called to the chair. He maintained that the whole country had too long been subject to the dictation and control of the Central Trade Union of Manchester, and could see no benefit which that society had conferred upon the workmen of any town except their own. London, Sheffield, Hull, and other large and important towns, had lately thrown off the yoke, and formed local and independent associations, which worked well, and were found of great benefit; and he did not see why Nottingham should not follow their example. The Central Union had done nothing from the commencement to the present day but plunder the working men! Mr. John Edwards moved that a local trade society be forthwith established, of which Nottingham shall be the head quarters. They could thus easily settle any difference with the masters without dictation or control from any other body, doing away with the necessity for further strikes. He had always found that such misunderstandings between masters and men arose from the want of a little friendly communication between them; and the masters had themselves suggested a code of regulations, leaving all disputed questions to be settled by the arbitration of delegates chosen from both sides. A lively discussion took place, the prominent feeling being strongly adverse to the Manchester Union and in favour of the plan proposed.—The resolution was then put and carried *nem. con.* and a committee was chosen to draw up the laws of the new society.

**STRIKES.**—The strike of about 200 labourers in the employ of the Eastern Counties Railway Company at Blackwall, took place on the 1st inst. in consequence of the Board of Directors having notified that in future the wages would be paid every fortnight, in lieu of weekly, as heretofore. The matter having come before the Board, they settled the dispute by rescinding the rather inconsiderate resolution, and ordering the continuance of weekly payments.—At the Brick-lane Goods Station and the Stratford Station, dissatisfaction also prevails from a like cause, but a petition of nearly 400 labourers and clerks for weekly payments has been rejected by the very same directors whom a strike compelled to retrace their steps at Blackwall. Do they wish to force their *employés* into strikes? Their conduct implies a recognition of strikes as the only proper and sufficient manifestation of the desires of those under their employment. Is this wise?

**METROPOLITAN IMPROVEMENTS: PARK-LANE TRAFFIC.**—In reply to a question in the Commons last week, Sir B. Hall said the committee of 1855 had recommended that one of the first openings for improving the traffic through the metropolis should be from Piccadilly, through Hamilton-place to Stanhope-gate, and he had last year taken steps to carry out the recommendation, but was met by objections of residents in Hamilton-place, supported by the law officers of the Crown. He thought there was a very great objection to throwing open the gate into the Park, for if it was open by day it must be open by night also, otherwise a great deal of inconvenience would result, and that would involve the throwing open of the whole of the Park by night, which no honourable member would desire. However, he entirely concurred in the recommendations of the select committee, as it was obvious that great inconvenience arose from the narrow state of Park-lane. The Local Board of Works had power to purchase property in Park-lane for the purpose of widening the thoroughfare.

**GAS AT PLYMOUTH AND STONEHOUSE.**—The annual report of the directors of the Plymouth and Stonehouse Gaslight and Coke Company, to the shareholders, on the 12th inst. states that, "at the last annual general meeting, the directors announced their intention to reduce the price of gas from 6s. to 4s. 6d. per 1,000 cubic feet; and it is gratifying to them to state that the increase in the consumption, which has taken place since that period, has so fully realised their anticipations, that they are now enabled to announce their intention to make a further reduction of 6d. per 1,000 feet, from and after the 29th of September next, when the charge will be 4s. per 1,000 cubic feet,—thereby giving their customers the benefit of reduced charges on the next winter's consumption." The increase of consumption already obtained, as the first fruits of this enlightened policy, we think the directors may rest assured is not *all* their shareholders will reap from that single act, for even twelve months are not long enough to complete all the increase to be hence anticipated. That increase will still, doubtless, go on concurrently with the still further increase to arise from the further reduction, and we shall be happy to hear, in course of another year, that our anticipation has been completely fulfilled. Meantime the sum of 3,000*l.* out of the profits of the past year has been added to the reserve fund; and, after providing for out-standing debts, and payment of the half-yearly dividend, authorised at the last annual general meeting, the sum of 2,000*l.* remained as a disposable balance for the payment of another satisfactory dividend.

**DESTRUCTION OF PICKFORD'S GOODS WAREHOUSES AT CAMDEN-TOWN.**—This has been a very extensive fire, destroying admittedly 60,000*l.* worth of property, but much more according to some estimations. A good deal of it was insured, but the public will have much trouble and loss connected with destroyed parcels, &c. The official report of Mr. Braidwood describes the main damage done as follows:—"Oval-road, Camden-town, Messrs. Pickford and Co. of the London and North-Western Goods Station.—The contents, and also the warehouses, &c. 300 feet by 250 feet, all but destroyed; one horse and a number of pigs burnt to death; the stabling and vaults under ground severely damaged by fire, water, &c. and two barges in the canal alongside severely burned. The buildings were insured by the company in the Globe, and Messrs. Pickford's were insured in the Norwich Union and other fire offices. The cause of the fire is unknown."

**FATAL ACCIDENT AT THE LEIGHORN THEATRE.**—A sad catastrophe occurred at Leighorn on the 7th inst. Upwards of 3,000 persons were assembled in the Theatre degli Aquidotti to witness the representation of the taking of Sebastopol, when suddenly one of the rockets let off to imitate the bombardment set fire to the side-scenes. A sudden panic seized the public, and it was believed (according to the *Corriere Mercantile* of Genoa) that a hundred persons perished, and that more than double that number were injured.—The official *Monitore Toscano* of the 8th, however, says that, according to the last accounts, the killed were forty-three, and the wounded 134. "The fire never got beyond the scenes, and did no damage to the other part of the theatre."

**FALLING IN OF A SWISS TUNNEL.**—No less than fifty-four of the workmen engaged in forming the Hauenstein tunnel, on the centre railway, uniting Basle with Aarau, Lucerne, Berne, &c. were buried by the falling in of a portion of the shaft having been burnt, and by last accounts, thirty-two dead bodies had been extracted. In the tunnel, which is about three miles in length, a fire was constantly kept up to promote the circulation of air, and a forge had been at work at the bottom of the shaft, so that the wood-work became very dry, and at length caught fire. Great exertions have been made to open a way to those entombed; but there was little or no hope of any of them having survived, although they had sufficient space, and a spring-well for drink, with several horses for food, all probably having been suffocated by the fumes of the burning timber.

**SALARY OF THE SALFORD SURVEYOR.**—At a recent meeting of the local council a report from the Salford District General Purposes Committee recommended that the salary of Mr. Evans, surveyor of the district, be increased from 200*l.* to 250*l.* a year. Mr. Evans devoting his whole time to the duties of the office, and the engagement being terminable by three months' notice from either party. It was stated that the total expended by the committee under whom Mr. Evans served was about 7,175*l.*; which, at the usual five per cent. would give him a salary of 358*l.* 15s. The General Purposes Committee recommended that an increase should be granted, rather than that a servant of seven years' experience should be lost, and all the inconvenience of a new man be encountered. A motion to that effect was carried by 11 to 10.

**LECTURES ON ART.**—With special reference to the Art Exhibition, Mr. Henry Cook, on the 10th inst. delivered, in the lecture-hall of the new Mechanics' Institution at Manchester, the first of a course of six lectures on this subject. The audience was very select, including the Bishop and many of the clergy. The moral and social advantage of a right understanding of the arts formed the chief subject of the lecture.

**THE UNETT MEMORIAL, BIRMINGHAM.**—The monument to the memory of Colonel Unett, who fell at the Redan, is now finished. It stands in St. Philip's churchyard, at an angle of the burial-ground facing Upper Temple-street. It consists of an Egyptian obelisk, of polished Peterhead granite, raised on a pedestal of same material, the whole supported at the base by three steps. The height of the monument is very nearly 20 feet, of which the obelisk alone measures 12, the latter being hewn out of one block of granite upwards of 3 tons in weight. The design was furnished by Mr. Peter Hollins, by whom also it has been executed.

**ARCHAEOLOGICAL DISCOVERY AT ABINGDON.**—In the course of last week the workmen of Mr. Jas. Thomas, of this town, whilst engaged in laying down a drain from the Abbey to the "Stert-water," which crosses the end of the Market-square, broke into a subterranean vaulted passage, leading from the Council-chamber buildings towards the church of St. Nicholas. It possessed characteristics of a peculiar nature, being some 3 feet in height by 6 feet in width, constructed with small rough stones, with an arch very neatly turned. The workmen followed the passage under the church for some 10 feet (when the length presented was from 6 to 10 yards), and were then stopped by the walls of a vault which had been built through and entirely across it. The passage was not further followed.

**CONGREGATIONAL SCHOOLS, ROTHERHITHE.**—The foundation-stone of these new schools was laid on 11th inst. The building, which will be in the Italian style of architecture, is to be formed of plain bricks, and is being erected by Mr. Hollings, builder. The cost of the building will exceed 800*l.* of which nearly 400*l.* have still to be raised.

**REMOVAL OF NOXIOUS TRADES FROM TOWNS.**—The suggestion in our columns that a twofold improvement might be effected by the removal of trades prejudicial to health in London, to a distance of at least several miles, so withdrawing also many of the working classes from their close and crowded dwellings to more healthful districts, has met with very favourable consideration by the press. The *Glasgow Gazette*, for example, urges the removal from Glasgow of several objectionable trades which have of late given frequent cause for complaint; and there is no city in the kingdom, we may add, which more requires a thinning (for their own as well as the general benefit) amongst the crowded working classes in its closes, courts, and wynds.

**STATUE OF THE LATE MR. G. B. THORNEYCROFT, AT WOLVERHAMPTON.**—A statue of Mr. Thorneycroft was placed, on the 11th inst., upon the pedestal erected at the head of the vault in the cemetery where his remains were interred. The statue is 8 feet 6 in. in height, and executed from a block of Carrara marble; the pedestal is also of marble, but of a greyish white. The late Mr. Thorneycroft having been the first mayor of Wolverhampton, advantage has been taken of this circumstance in the treatment of his statue. He is represented in the act of addressing his fellow townsmen, and wearing the robe and court-dress of his office. At his feet, sustaining the statue and uniting it with the plinth, is an iron roll, indicative of the trade of which he was a member. The head and face of the statue are said to form a correct portrait. Mr. Thorneycroft was the sculptor of the statue.

**THE COLERAINE ACADEMICAL INSTITUTION.**—The first stone of the Coleraine Academical Institution was laid on the 4th inst. This building will be erected in the neighbourhood of Coleraine. Near the site the National Board have erected an extensive model-school. The proposed erection is of considerable extent. The building is a plain specimen of the Italian style of architecture. It is of a somewhat oblong shape—the front, which has an eastern aspect, measuring about 150 feet in length. The average breadth may be set down at 50 feet. Mr. Isaac Farrell, of Dublin, C.E. is the architect; and Mr. Kilpatrick, of Coleraine, the builder.

**THE ORDNANCE MAPS FOR SCOTLAND.**—The publication of these maps, on a scale of 1 inch per mile, is now begun. They are reduced from the 6-inch maps, and published in sheets measuring 24 inches by 18 inches each, delineating an area 24 miles long by 18 miles broad. Sheet 32, the only one yet ready, embraces the country on both sides of Edinburgh, from Linnithgow on the west, to Prestonpans on the east, and in the other direction from Penicuik to Dalgetty in Fife. They are sold at one shilling per sheet.



**MANUFACTURE OF IRON AND STEEL.**—Sir F. C. Knowles, of Lovell Hill, Berks, has patented some improvements in the manufacture of iron. The first part of the invention relates to the preparation of fuel from wood, peat, coal, &c. by dry distillation. The second part is a modification of Mr. Nasmyth's process of forcing gases through the molten metal. Atmospheric air, however, is in this instance used, and several tubes are admitted at the top of the furnace, and carried to near the bottom, to conduct the air. The third part of the invention provides for the use of pure hydrogen, or carburized hydrogen, by forcing them through the metal. Messrs. Wm. Clay, of Liverpool, and Josiah Harris, of Dolgelly, have also patented improvements for the same purpose. They employ a circular trough, into which the molten metal is run, and into which there is suspended an air-tight circular chamber of small diameter; there is thus formed a kind of hydraulic joint, the molten metal taking the place of the water. A vacuum is created in the chamber; consequently the air rushes under its walls and impregnates the metal. A tapping-hole is provided at the bottom of the trough.

**THE LONDON MILITIA DEPOT.**—In reply to some correspondents, we are enabled to state that the chimney-pots which occur objectionably on the turrets of this building are to be removed.

**LONDON-DERRY BRIDGE COMPLETION.**—We have received letters from two highly respectable engineers, answering in the negative the inquiries made by "C. E." in our last, p. 341; but as they are marked "not for publication," we can do nothing more than state the fact. The letter signed "C. E." was guaranteed by equally respectable names.

"HARD LABOUR."—The "crank" is considered to be objectionable, even by those who approve of unproductive labour for criminals: it is liable, for example, severe as it is, to be doubled in severity at the caprice of an officer, and by the more single turn of a screw. A correspondent, Mr. Joshua H. Lea, submits to our inspection models connected with an improved system of hard labour. One of them is simply "shot drill," only carried on in the cell, without supervision, but with an index, by which the work done and distance gone are indicated; as, for example, 3 miles for breakfast, 6 for dinner, and 3 for supper, the weight of shot also to be regulated, according to the strength, as decided by the prison surgeon. An advantage of this substitute for the crank, our correspondent urges, would be that the whole body would be exercised, in stooping, lifting walking, &c. without causing the legs to swell from standing in one position. Another model represents a bedstead, to be made of ordinary Tee iron, in the shape of two ladders, to be used by day in ascending and descending the sides of the cell, with a key, the use of which, in perpetually locking one side and the other is not made very clear, but with an index, also, to compel the fulfilment of the task. We have thus described our correspondent's models; and we must say that we cannot approve of unproductive labour in any shape, even for a criminal, however brutal. Indeed, the more heinous his crime, the more incumbent is it on him to do something useful, as a compensation, either to his victims, or to his country.

**THE LATE MR. J. H. STEVENS, ARCHITECT.**—We record with regret the premature death of Mr. John Hargrave Stevens, surveyor, under the Metropolitan Building Act, of the western district of the City of London, which took place on the 2nd instant. Mr. Stevens was intimately associated with the City solicitor, Mr. Pearson, in the plans for metropolitan railways, which he has at different times brought before the public.

**THE CONSTRUCTION OF FLUES.**—As a note to article on p. 325, let me say that at Southfield Grange, Wandsworth (built five years ago) are flues on the plan shown in fig. 1, but the foot of the main flue C D was not intended as a receptacle for soot, but to allow the chimneys of best rooms to be swept from the kitchen, an arrangement attended with great cleanliness and comfort.—T. M.

**ROMAN CATHOLIC SCHOOLS FOR DURY-LANE.**—The Roman Catholics have bought a piece of ground at the end of Charles-street, Dury-lane, on which it is intended to erect schools, to be called "The Schools of Compassion." The cost of erection, it is stated, will be upwards of 10,000*l*.

**SOUTH KENSINGTON MUSEUM (AT BROMPTON).**—The Queen and members of the Legislature are about to pay private visits to this museum, the dates of which have been arranged, and it will be opened to the public, both in the daytime and the evening, on and after Wednesday, the 24th instant. Besides the various collections of architecture, sculpture, patented inventions, &c. the Sheepshanks pictures will be exhibited in the new gallery erected to receive them. The admission of the public to the museum lighted up in the evening, is the first experiment of the kind with a public institution, and it is hoped will be acceptable to those who work in the daytime.

## THE BUILDER.

[ADVERTISEMENT.]

### NATIONAL MERCANTILE LIFE ASSURANCE SOCIETY.

Poultry, Mansion House, June 15th, 1857.

The six iron Revolving Shutters supplied to this Office by Messrs. CLARK and CO. Engineers (of 15, Gate-street, Lincoln's-inn-fields), have now been in use UPWARDS OF TWELVE YEARS, and I have much pleasure in bearing testimony to their general excellence, their durability, security, ease in working, and their non-liability to get out of order. Beyond an occasional ciling, nothing has been done to them since they were first fitted. I can therefore highly recommend them.

CHARLES MARSH.

### TENDERS

For the West Suffolk Militia Depot, Bury St. Edmunds.

Messrs. Morgan and Phipson, architects:—

H. Ruff, Ipswich	£5,620 0 0
R. Orman, ditto	5,454 0 0
R. Hawkins, Bury	5,241 3 7
J. Rednall, Bury St. Edmunds	4,975 0 0
S. Baldeston, Ipswich	4,855 0 0
H. Ringham, ditto (accepted)	4,241 7 0

For additions and alterations in Maidstone-buildings, Bowdler, for Messrs. Lusham and Co. Mr. Henry Curry, architect.

The quantities prepared by Mr. Richard Roberts:—

Cubitt and Co.	£4,863 0 0
Lucas	4,733 0 0
Wilson	4,395 0 0
Myers	4,398 0 0
Wilson	4,038 0 0
Higgs	4,000 0 0
Rider	3,870 0 0
Piper and Son	3,799 0 0
Downs	3,760 0 0

For St. James's Church, Southampton. Messrs. Haines and Bedford, architects:—

Gambing	£3,770 0 0
Chapman	3,495 0 0
Bratt and Bessant	3,350 0 0
Chinnock	3,295 0 0
Ball (accepted)	3,094 0 0

For building two chapels, two lodges, boundary-walls, and roads for the Sunderland Cemetery. Mr. Matthew Thompson, architect:—

Hurst, Sunderland	£23,336 0 0
Hoggatt, Darlington	8,160 0 0
Armstrong and Hudspeth, Alnwick	2,997 0 0
Kyle, Newcastle (accepted)	2,968 0 0
Architect's estimate	£23,152

For New Model Lodging-houses, Stafford-street, Lisson-grove, New-road. Messrs. W. G. and E. Haberghon, architects.

Quantities furnished:—

Hasford	£2,373 0 0
Stark	3,500 0 0
Knapp and Son	2,495 0 0
Higgs	2,456 0 0
Coney	2,400 0 0
Haly	2,377 0 0
Rowe	2,263 0 0
Trotter	2,222 0 0
Tarrant and Sass	2,217 0 0
Evans	2,186 0 0
Dales	1,977 0 0
Scargrave	1,956 0 0
Parkins	1,949 0 0
Wells	1,769 0 0

For Silk Factory, for Mr. George Allen, St. Stephen's, Norwich. Mr. John Ellis, architect, Norwich:—

Pegg and Co.	£2,764 0 0
Youngs	2,400 0 0
Read and Bocking	2,300 0 0
Minnis and Foyson	2,376 0 0
Lacey	2,250 0 0
Balls and Co.	2,222 0 0
James Read	2,220 0 0
Brown and Bailey	2,188 0 0
Long	2,168 0 0
Mouchon	2,010 0 0
Griffin (accepted)	1,953 0 0

Smith and Founder's works:—

Sabbarton	495 0 0
Thomson	498 0 0
Pinson (accepted)	424 13 0

For house at Tottenham. Mr. Fras. Pouget, architect.

Quantities supplied:—

Lawrence	£1,243 0 0
Rider	1,240 0 0
Downes	1,220 0 0
Clarke and Bulmer	1,120 0 0
Wood and Sons	1,144 0 0
Clarke	1,080 0 0
Blanchard (accepted)	1,033 0 0

For Warwick Cemetery Chapels, Lodge, &amp;c. Mr. Edward Holmes, architect:—

Hardwick, Birmingham	£1,487 15 0
Clarke and Son, Warwick	1,335 10 0
Green, Warwick	1,330 0 0

For villa, Moseley, near Birmingham, for Mr. Thomas Bickley. Mr. Edward Holmes, architect. Quantities supplied:—

Barnesley and Sons	£1,243 0 0
Baxter	1,157 0 0
Matthews (accepted)	1,142 0 0

### TO CORRESPONDENTS.

T. S. Q. (to see the architect's intentions properly carried out).—G. B. N.—P. W. B.—C. de V.—H. R.—J. E.—G. B.—W. M. R.—C. M.—W. W. in type.—T. B. D. Mr. P. declined, with thanks. W. H. V.—T. G.—N.—T. B. D. Mr. P. declined, with thanks. T. M.—A. P.—T. H. L.—A. M. G. (under our limit).—M. H. B.—R. Y.—S. B. G.—J. P. M. (Gothic, of the Perpendicular order).—T. R. W.—J. D. R.—F. C. I. A. C. (drawings must be submitted the porters have information).—P. A. A. G. E. H.—E. M. B.—H.—One about to build (there are many examples of the use of encaustic tiles "panels or strings" scattered over London, but we cannot give list).—C. M.—C. and under our limit. M. F. (ditto).—T. M.—W. N.—A. and B. (such a clause is not usual).

Mr. Garbett's reply to Mr. Wightwick next week.

"Want a Foreigner thinks of the Government Competition" is in type.

"Books and Addresses."—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor," all other communications should be addressed to the Editor, and not to the Publisher.

### ADVERTISEMENTS.

**A SURVEYOR**, of extensive practice in the country, is desirous of assisting a Young Gentleman as IMPROVER, who understands drawing, as he would have a good opportunity of improvement in valuing clerical calculations, and of course of course would be considered as adequate to his services.—Address, J. M. Post-office, Newbury, Berks.

**BUILDER'S CLERK WANTED.**—One who understands drawing and taking out quantities, apply, stating age and salary, to Mr. G. CLARK, Woodson Wharf, Hely-Hatch.

### METROPOLITAN BOARD OF WORKS.

**ELECTION OF DISTRICT SURVEYOR** under the Metropolitan Building Act, 1855.—The Metropolitan Board of Works hereby give notice that on FRIDAY, the 26th instant, at TWELVE o'clock at noon, at GOLDHALL, proceed to the ELECTION of a DISTRICT SURVEYOR, for the district of the Western Division of the City of London, now vacant by the death of Mr. John Stevens.—Applications in writing, with certificates of competency, addressed to the Metropolitan Board of Works, will be received at the Office of the Board, No. 1, Greek-street, Soho, till THURSDAY, the 25th instant, at FOUR o'clock. Board, at Goldhall, on the day of election.

By order, H. WOODLEY, Clerk of the Board.

1, Greek-street, Soho, June 15, 1857.

### TO GLASS PAINTERS AND LEAD WORKERS.

**WANTED**, a few good GLASS PAINTERS and LEAD WORKERS.—Apply to Messrs. EDMUNDSON and SON, No. 1, Ainslie-street, Oxford-street, Manchester.

N.B. As the advertisers are thoroughly practical men, in every line of the trade, they trust none will apply but those who perfectly understand their business, or state exactly the amount of their ability.

### TO LETTER-CUTTERS.

**WANTED**, a Young Man, who can engrave on PORTLAND STONE; and if he can turn his hand to any other part of the business will be all the better.—State wages per day, &c. by letter, post paid, to G. W. And-er, Hants.

### WANTED, a DRAUGHTSMAN, who has

a good knowledge of plan and perspective drawing.—Apply by letter to X. Y. Z. Office of "The Builder."

### TO CARPENTERS, JOINERS, AND PLASTERERS.

**WANTED**, several HANDS in each of the above branches, either for day work or by the piece.—Apply to Mr. J. WELLS, 10, Builder, Dorchester, Dorset.

### WANTED, in a BUILDER'S OFFICE, a

help hand. He must write a good hand, and know a little of accounts. Salary, also make himself generally useful. Apply to W. W. DENNIS, Pembroke-wharf, Galesdon-road, Islington, near Kings-road.

### TO FOREMEN OF CEMENT WORKS.

**WANTED**, a Person fully qualified to act as FOREMAN of a CEMENT WORKS. He must be thoroughly acquainted with the manufacture of Portland Cement. One who has held the position would be preferred. Young men need apply whose character will not bear the strictest investigation. Applications, with testimonials, and references, to be addressed to T. and A. Office of "The Builder."

### WANTED, forthwith, in an Architect's

Office in Dublin, an experienced ASSISTANT, who understands working drawings, and is able to make sketches and drawings in perspective.—Particulars as to qualifications, with references, to be forwarded to A. Y. Z. Westland-row, Dublin.

### TO BRICK AND TILE MAKERS.

**WANTED**, a steady and experienced MAN, to DIG, MAKE, and BURN RED BRICKS and TILES, either at per thousand, or to superintend the works. It is a close kiln, with drying sheds attached, is used all the year round, and situated on the south coast.—Apply to Mr. SMITH (ground floor, No. 11, Carlton-road, Regent-street).

### WANTED, to WORK in a SAW-MILL at

Brighton, an active respectable MAN, who can manage a circular saw bench; he must have a good character from his last employer as to ability, &c.—Apply to J. IRELAND, Brighton Sea Mills, Brighton.

### TO BRICK MAKERS.

**WANTED**, immediately, Three or Four good BRICKMAKERS, at Mr. W. DENNIS's Brick and Tile Works, Therapia, Constantia, to take the place of labour per thousand. Apply to C. C. and A. DENNETT, Contractors, Nottingham.

### WANTED, a Youth as an indoor APPRENTICE in the MARBLE and STONE BUSINESS; also

one to engrave and carve in stone. Premium required.—Apply by letter to C. C. Office of "The Builder."

### WANTED, immediately, a good GOTHIC

ST. NE CARVER, who has been accustomed to ornamental and plain lettering and monumental work, and a good draughtsman, permanent situation. Address, stating terms, to X. Y. Z. Mr. E. R. COSMAN, Printer, &c. High-street, Lincoln.

### WANTED, by a Man who thoroughly knows

his business, a good ASSISTANT as PAINTER; will make himself useful at the writing, erasing, gilding, &c. Ample references can be given.—Address, A. B. C. 11, Great Suffolk-street, B. 10, 10.

### TO ARCHITECTS AND BUILDERS.

**WANTED**, by a persevering Young Man, aged 23 years, a SITUATION as ASSISTANT in either of the above trades, or as a good draughtsman, and is conversant with surveying, levelling, mapping, &c. Was for years in last situation, and can be well recommended from the same.—Address, H. B. 31, St. Andrew's-hill, Post-office-commons, City.



VOL. XV.—No. 751.

Here are found wools, hair, furs, bristles, whalebone (developed bristles), horn, feathers, leather, and other animal products, in their various applications, and all so labelled as to enable the visitor to get information with the

The collection is contained in four rooms;—the two larger, 46 feet by 20 feet; the two smaller, 34 feet by 20 feet; 22 feet high. Light is admitted through an aperture, 10 feet wide, along the centre of the roof, glazed externally with clear glass; a second glazing of ground glass being placed below. Gas is supplied by 112 burners in the larger, 84 in the smaller

The classification of the various casts, although broadly correct, has yet to be made perfect. This is also the case in respect of the Greek, Roman, and Renaissance casts in the gallery below; but steps have been taken by the Department to make the arrangement of the latter more perfect. Viewed in conjunction



with the casts belonging to the Architectural Museum (mostly Medieval), the architectural student will here find illustrations of the whole progress of his art in respect of details and decorations.

The Museum of Ornamental Art has seventeen divisions, viz.:—1. Sculpture, including carvings in marble, alabaster, stone, wood, ivory, and other materials; art-bronzes, terra-cottas, and models in wax, plaster, &c. 2. Painting—Wall decoration, paper-hangings, illuminations, printing, designs. 3. Glyptic and Numismatic art. 4. Mosaics. 5. Furniture and general upholstery. 6. Basket-work. 7. Leather-work. 8. Japanned or lacquered work. 9. Glass painting. 10. Glass manufactures. 11. Enamels. 12. Pottery. 13. Works in metal. 14. Arms, armour, and accoutrements. 15. Watch and clock-work. 16. Jewellery. 17. Textile fabrics.

At the present time, only a small proportion of the collection which now numbers upwards of 4,000 objects, can be exhibited. The reasons for this deficiency are, that a selection consisting of 1,000 specimens, including the entire acquisitions from the Bernal collection, has been sent to the Manchester Art-Treasures Exhibition; that a further instalment of several hundred objects in every class has, for the last three years, been circulated for exhibition in the various provincial towns in which schools of art are established; and that, lastly, it has been decided to await the completion of the new fire-proof rooms behind the present building, and under the Sheepshanks' Gallery, in order to avoid the risk of exposing many rare and valuable objects in the iron building. The collection of original specimens now exhibited, consists, therefore, mainly of the bulkier objects of furniture, and of works of modern origin, purchased from the Paris Exhibition of 1855, which, from want of space at Marlborough House, have not yet been seen by the public.

Even from this brief outline it will be evident to our readers that the museum at Brompton may be made to play an important part in the education of the rising generation.

#### SOME REMARKS ON DOWES.\*

Of all the forms created by the architect, the dome is perhaps the loveliest. There are few of us who have not seen with admiration the numerous domes of Rome and of Florence, towering high above all around; and here at home, the dome of fourteenth-century architecture, the swiftness of which is felt in the way of houses, majestically rises its golden cross, and constitutes the well-known crowning feature of our city. In the following general sketch of the origin and the progressive development of outline of dome, I propose to enter but very slightly into the question of construction, though I think that this part of the subject has not yet been treated as it should be, and that a monograph of it, working out the theory from actual examples, is still wanted.

Late discoveries in Egypt and Assyria have laid open many a work of ancient art before unknown, but we must still seek in Greece for the earliest examples of our subject, viz. at Mycenæ and Orchomenos; to which two instances we seem limited in that country. The Abbé Winckelmann indeed, no mean authority, maintains that the Greeks through all ages used this form of covering; but I have carefully searched the passages to which he refers, and find that his only grounds of belief are the use of the word *θόλος* by Pausanias in his description of several buildings, and some exceedingly doubtful passages in other authors. Pausanias makes no mention whatever of any peculiar form of covering, and I believe the meaning of the word *θόλος* as applied to a dome is a later reading. One instance, however, of a bas-relief in the Clementine Museum, to which the Abbé alludes, gives at first sight some colour to his theory. I find, however, that it represents a tower, apparently of wood, on the prow of a ship, and that the date of the bas-relief and of the invention of the towers themselves is uncertain. It seems to me that the most inveterate essayist could scarcely find a theory upon this. I have also been reminded of a doubtful passage of Cratinus referring to the Odeum of Pericles;

but Vitruvius, who gives a long description of that building, makes no mention of a dome. In Sardinia we have those curious buildings described by M. Petit Radel. In Etruria we have some instances such as I have given from Riello; and in the Crimea the tomb of Mithridates at Kerch; but the dates and the builders are doubtful, and we must return to Greece before we are on sure ground.

At Mycenæ we see the form, if not the construction of the dome, worked out by a master hand with no little skill; and most singular is it that for nearly 1,000 years (so long is it to the next example) that form remained, so far as our knowledge goes, unaltered, though in the heart of the country. For it is not a ruin whose form can be developed only by the patient labour of the antiquary. The hand of time, which has weighed heavily on works of a later date, has passed gently over this, and whilst it has only spared a few columns at Corinth and at Thebes, and little at Argos and Epidaurus but the rock-cut steps of their theatres, it has left this earlier work almost unscathed, as though to teach us how great was the nation whom we once called barbarian, though their history, their name, and race can now only be conjectured. Between the Treasury of Atreus and the Choric monument (an example so small as hardly to be quoted except as a connecting link) there is a gap of 1,000 years—a space which contains the lifetime of a nation—sees its rise and its decay; and yet amidst the buildings, the sculptures, and the vases wherein so much of the nation's character has been written, I cannot recall one instance beyond those I have mentioned to show that the dome was ever used by the Greeks; that nation whose fertile mind teemed with inventions in art, in poetry, in everything, I am heretic enough to say, but in architecture. For beautiful as their one form once was, and refined in detail to an extent that we can scarcely yet appreciate, the form was still one which, varying only in detail, might have served as the model of nearly every temple from Pæstum to Ionia.

The tiny monument of Lyciscrates is interesting, so far as, were we disposed to trace art forms up to their earliest source, it would offer the first instance of a dome raised on columns, and showing the domical form both inside and out. This monument is of singular beauty, but it can now, perhaps, be better judged of by casts and drawings than from the reality. For it is (or was a few years back, when I saw it) half buried in rubbish and filth, and to be approached only through a nest of squalid hovels. Another jump of some 500 years brings us to a number of examples, showing the outline of the dome almost perfected—at Rome the Pantheon, the temples of Venus, of Minerva Medica, and the Baths of Caracalla; at Baïæ the Temple of Venus; at Pompeii, the Baths show us the form developed, while the grandeur of many of these examples still left teach us how very many we must have lost. In some small remains at Mylassa, in Ionia, of perhaps earlier date than the above, the Greeks made a great advance by covering a square space with a domical structure, and raising it on columns by a method which has been well described by Mr. Fergusson, in his Handbook, more especially in reference to Indian domes. This method is the one that we might expect would be first adopted, and consists simply in covering the angles of the square with a flat stone or girder then repeating the process, and thus gradually obtaining a near approach to a circle. At Mylassa, the arrangement seems to have been well managed, and to have produced a very pleasing effect. In the Indian domes the arrangement was still more picturesque; but the whole must, I think, be considered as a rude way of getting over a difficulty. We have an example of 1,000 years later date than that at Mylassa, in the Temple of Pandrethan, in Kashmir, but formed on precisely the same principles. I remember but one instance of its use in an interior in modern times, viz. at Sta. Balbina, at Milan, where the angles are cut off in the most abrupt manner, and the effect is disagreeable in the extreme. But a remarkable instance of its use externally may be seen in Palladio's celebrated villa Capri, near Vicenza, where the dome, with a low stylobate under, is placed directly on the square hipped roof, not raised above it as shown in the engravings, but sunk into the sides in the most awkward manner. At Mereworth Castle, Kent, this example has been copied, without the cutting into the roof, which is better, but with a higher dome, which is decidedly worse. The external effect of this abrupt change from the square to the circle could scarcely be pleasing anywhere, and it is surprising to find that we must look for the most numerous examples of its use amongst the picturesque churches of elegant Palermo. No effort is there made to conceal the transition, and the effect is certainly unpleasant. There are some examples also at Cairo and at Acon, but the change is there softened by an octagon being interposed.

The next attempt to get rid of the harsh effect of

the horizontal angular pieces internally would be, we may imagine, to fill them up by a slanting projection starting from a point at the base, each filling-in piece being triangular. Yet this is by no means the earliest in point of date, and very few examples of it in its simple form, as applied to interiors, exist. The best specimens are, perhaps, to be found in the French churches of Loches, Uzerehe, &c. so well described by Mr. Petit. But the honeycomb pendentives of the Saracens, seen in the Mosque of Hassan at Cairo, the Cuba at Palermo, and the Pathan Mosque at Delhi, may be ranked in the same class as a beautiful variety. The transition externally from the square to the round may be made in the most ready way, by merely slanting off the angles; by which simple expedient a very beautiful outline has been produced by the Arab architects, as will be at once seen in the well-known tombs of Cairo. The same expedient has been sometimes used in later times, as in the well-known villa at Chiswick; but considering the picturesque effect which the Arabs have proved can be produced by this easy plan, I must say I wonder that it has not been more often adopted—more especially as the Gothic architects have shown in many a beautiful example, in their spires, how picturesque the connection between two dissimilar forms may be made. Somewhat of this treatment may be seen in the dome of Ani in Armenia; but I cannot help regretting that the Gothic architects did not adapt to their own forms that of the dome, and complete the beautiful beginning made towards it at Ely. The next change would be probably to support the angular filling in by an arch; and at Serbistan we see this arrangement complete. It is, indeed, so strikingly like the Arab forms of 800 years later, seen in Palermo, that we hesitate at first to assign it to the fourth century. But we have good authority for so doing, and indeed the remains now disinterred in the East show us how little is our present knowledge of its art. Who, for instance, looking at the battlemented turrets and round arched dome of the Assyrian sculptures, would not knowing its date, venture to assign its real one? Or who would consider the Temple of Payach, in Kashmir, to be of the age of Theodoric, or the pointed arch at Bisotum, to be of the fifth century? and yet we have excellent authority for these conclusions. And, indeed, changing in all else, the East retains its art traditions almost unchanging; and the art workman there produces his tapestry and mosaics after the same likeness as his ancestors have done for centuries before him.

The models at Serbistan and Ferouzabad, however, if followed, seem to have left few immediate copies, and for many a year after we see no trace of their influence. In Italy we now find the great circular buildings of Novara, Sta. Costanza, &c. All these seem to have been formed on one plan: the builders got some old columns on which they put as many old capitals as they could find, without much regard to size or form. A tall base made amends for a short capital, and where capitals and bases enough were not found ready made, others were worked out in rude similitude. The columns being ranged in circles, a drum was carried up over them, and a large dome covered all; yet, rude as is the whole arrangement, there is a picturesque and quiet effect in the mass that is very pleasing.

Of a somewhat later date is the well-known tomb of Theodoric at Ravenna, as picturesque in effect as bold in construction. A dome of 35 feet diameter in one solid block of stone, hoisted some 50 feet in the air, would startle a modern mason; but though its foundations were, when I saw it, under water, scarcely a fracture could be seen throughout the building. Were not the date of this also well authenticated, we should hesitate to place it where we now do.

Another method, more scientific, and, perhaps, more artistic, took the place of that of Serbistan. If we round off the top edges of these exterior angular gussets to the form of the circle in elevation, we shall have externally the Byzantine form of pendentive. But the Eastern architects seem to have worked out the form in a different way, best described by Mr. Petit.\*

Externally the western dome corresponds in diameter to one side of the square on which it is described, but in the eastern the diameter is often equal to the diagonal. Try this on the model and see if anything can be more unpromising in outline than the huge overhanging on each side of the square. But cut off this projection and see how picturesque is the result. On a square, on an unequal sized figure, on a polygon, the result is the same, and I believe that no more picturesque outline was ever invented. From its earliest use down to the present time—as exemplified in the beautiful Indian canopy exhibited at the Crystal Palace of 1851, this outline has supplied forms of beauty throughout the East.

To individualise the specimens of this form, for the

\* Architectural Studies in France.

\* By Mr. T. H. Lewis, Fellow. Read at the Ordinary General Meeting of the Royal Institute of British Architects, June 1, as already mentioned.



first idea of which we are, however, indebted to the Romans, we must begin with Constantinople. The earliest church there (Agios Sergios) has much in plan resembling the Temple of Minerva Medica at Rome, and its picturesque arrangement of columns might once have existed in its prototype. But in the next example, the celebrated St. Sophia, we have the Byzantine pediment clearly worked out between two lofty arches and supporting the dome above, with an outside ring of arches added, shadowing forth, perhaps, the later mode of the circular peristyle.

On St. Vitale, a work of the same emperor, I need not dwell, as its picturesque form is known to all. But at Agia Theotokos, at Constantinople, a very important novelty was introduced in the external treatment, and very worthy it is of notice. It consists in carrying out the outline of the internal arches where they cut the dome, ornamenting them with massive archivolts carried on marble columns, and thus breaking up the base of the dome by a wave line in place of the level cornice.

There are a few examples in the West of Europe. The exterior of the S. Aposteln, at Cologne, is a very good specimen, though the internal arrangement is like that described for Serbistan. But in Greece, the form is everywhere met with as a native style; and the churches, springing as they do from the square to the cross form, raised in the centre by these domes, and coloured in the boldest way by the use of marble, brick, and terra cotta, have an effect scarcely to be imagined.\*

#### WHAT A FOREIGNER THINKS OF THE GOVERNMENT COMPETITION.

The competition for the designs of the new Government Offices has, no doubt, created much interest in the minds, not only of professional men, but of all who are anxious for the progress of art and science. The doors of Westminster-hall, which have been open to the public inspection of its contents for several weeks, are now closed; and the day draws near, when those appointed to decide on the merits of the competitors will give their judgment.

There is, perhaps, no art or science which contributes more directly to the education of the popular mind than good architectural edifices, or that vulgarizes it more than bad ones; still there is no art which has been more neglected; not to say abused, than architecture, during the greatest part of the eighteenth and the beginning of the present century. It is not very long since the public looked upon an architect as a kind of cross between a carpenter and a builder; those times, let us hope, are gone by, and though the present exhibition does not show all the progress in the art that might be desired, it is evident that in architectural skill great advances have been made.

Sir Benjamin Hall has been very judicious in laying these designs before the public. 1st. It shows what this country is able to produce in architectural design: the continental ones are very indifferent, indeed; as far as I can guess, no man of any repute has competed. 2nd. It is a contribution to popular education. 3rd. It is throwing off at once all suspicion of secrecy, intrigue, or partiality.

The profession, I think, cannot be entirely satisfied with the members of the committee. Most of them I believe to be men of superior education, and some of them of refined taste, but a few only of them are of the profession; and, if I am rightly informed, they are of the old school, not familiar with æsthetic progress in practical forms. It has long been a mistake to suppose that an architect can do very well without æsthetic principles; and that a practical acquaintance with stone, bricks, mortar, and wood, assisted by the knowledge of the construction of a staircase, with some rules of the five orders, would be sufficient to give a bricklayer the diploma of an architect. Hence the great number of horrid architectural features with which the public buildings of this metropolis have been deformed during more than half a century, with some few exceptions in the so-called classic, and some creditable buildings and churches in the Pointed styles.

Before entering the competition-hall, it may be useful to remember that in arts, as in science, we are all, to a certain extent, copyists, stepping forwards in the path of our predecessors, now rising upon their shoulders, then tumbling down under their feet when we become giddy, or falling back if we feel exhausted. It would be quite as useless to look for a new style as a matter of fact, as it would be useless to look out for a new star, only by wishing for it. New styles and new stars are scarce, but the solar system moves on quietly and surely, and so does architecture. It is influenced by the greater or less development of the intellect of a people in accordance with its religious feelings and domestic wants; and we may expect, accordingly, a more or less refined taste in its productions. It would be very easy to prove this truth in

laying before you the history of architecture, in conjunction with the history of the rise, development, and decline of a nation. But I must not impose either upon your valuable space, or the valuable time of the public; let it be sufficient to say, that we should not enter Westminster-hall with the sanguine expectation of finding a style hitherto unknown, but with the sober intention of finding out the best plan regardless that the style has no novelty to recommend it.

In walking for the first time through such an immense alley of drawings, the non-professional public and amateur must feel at a loss. There are plans painted with a profusion of Chinese red, indigo, and chrome yellow, as if the artist was a colourman, and wanted to advertise his trade: there are drawings so delicately tinted *couleur de rose*, that you are afraid they will vanish in looking at them: there are elevations and plans so carefully finished in detail, that you may tell the stones and bricks with their joints, if you had the time and a mind to do so: there are sketches in pen and ink for amateurs, of outlines, *à la prima*, which certainly would puzzle the carpenter and builder how to find out the working drawings: there are some so impudently large, that you want an assistant with a six-foot rule to measure them; and again, there are sections so minute, that you want a pair of strong spectacles to discover the beauty of them: there are block plans, knocking down to the right and to the left all that lies in their way, as if all the dwelling ground from Parliament-street to Charing-cross was on sale for 3d. a yard, making flower-gardens and avenues as for a country mansion. There are some which go as far as to blow up Richmond-terrace by gunpowder, like a piece of rock (in imagination, I mean), crossing the Thames by a single arch, I suppose as an improvement to the ventilation and drainage of the metropolis, or filling up the central part of the blessed stream, leaving only two narrow waterways at the sides, regardless of the increased velocity which would render these passages quite unfit for navigation. There are again drawings, showing small arches upon long columns, and others tremendous arches upon short ones; the first reminding us of a Roman aqueduct crossing a valley; the latter of a Hindoo dome, 700 B.C. or the first inclination to the Byzantine type in Marenthus basilica, 300 A.D. I will not allude to the number of drawings which are as deficient in any type or style as they are in architectural merit, and I must confess that after an impartial examination of a few hours, a small number only out of the 218, perhaps twelve or fifteen, deserve a closer examination. Amongst these there are two Italian, one mixed Italian, two Elizabethan, four Renaissance, one South, and four North Gothic.

One, an Italian (Greek) design, distinguishes itself by simplicity and harmony of conception. It is planned to preserve the *façade* of the present Treasury, but as that *façade* is only the mantle of a defective construction, without proper entrances to meet architectural beauty or practical use, and the whole surmounted by a dome, which not being in harmony with Greek, or Italian Greek architecture, an elevation showing no progress in art above what has been before executed in England, I should decline the project, notwithstanding its practical ability and harmonious dimensions.

In the Elizabethan style there is one very clever project indeed; but I object to the style itself, notwithstanding my great regard for some beautiful ancient specimens of it; for instance, Crewe Hall, so tastefully restored by its present possessor, as having only a few features for the development of architectural progress, in comparison with other styles. I should decline that design for the present object, notwithstanding its merits.

As to the Roman plan, it is a pity that the architect has not directed the power of his genius another way, as S P Q R will never do for S P Q L.

The four best designs I allude to in the Renaissance style are all bold, spirited, and tastefully handled. They surpass, in that line, every elevation around them; and, skilfully drawn, they give a favourable impression of their intrinsic value. In fact, for the impression of grace and elegance in lines, this style is admirably adapted; but it wants also a good deal of professional experience and cool judgment for its application in elevations of large dimensions: accordingly we have not only in these designs to look up for spirit and elegance in the elevation, but also to look down to the projections in the plans, and to calculate the effect the building will have when erected, as many of the spirited touches of pen or brush will never appear in the execution when seen at a proper distance.

The general rule by which the effect of architectural structures may be calculated is the more or less projection of certain parts of the elevation, and the greater or less deep and bold sections in accordance with the distance at which the whole may be seen at once. I make these observations purposely, because in one

of the most gorgeous and showy designs in the Renaissance style the sections are too flat, and the projections too many and too deep. One other fault in the same design is, that the second-floor is standing back several feet behind the general line of the front elevation rather terrace-like, and cuts in reality the elevation horizontally in two pieces above the first-floor, so that only a few feet of the upper story wall will be seen from the ground, if seen at all.

Space and time oblige me to forego a particular description of the other two designs in the same style, but there is one under them, in my humble opinion, decidedly superior to the others for boldness of conception, light and shade of projection, judicious sections, and grandeur of lines, being stamped, notwithstanding the richness of its statuary ornaments, with an unpretending simplicity. If the able designer would allow me one remark, I should wish the second-floor windows 2 feet higher, the columns of the chief entrance coupled, and some more skylights in the roof to pierce the large masses. But, after all, these few remarks may be wrong, and if they are right they do not much injure the design. Let us not forget, "*La critique est aisée et l'art est difficile.*"

There are now the Gothic designs only left for our consideration. I mean the few good ones, as there is a great number. I was glad to see it: glad because it shows an entire faith in the justice of the committee, notwithstanding that it has been whispered in many quarters that they—the leading men—"had got plenty of Gothic already." "They did not wish for it." "They would never adopt it." "They would not appoint a man in the committee to protect it," &c. &c. I do not believe the Government is prejudiced against any style soever, but that they will adopt the best design they can get hold of, regardless of its style. If the Government had had a preference for any style in particular, they would have asked for it exclusively, and have spared a sure disappointment to a number of able and distinguished architects,—not to mention the loss of time and capital. I think the Government has acted very fairly. It has given to all professional men the same opportunity, namely, to make a design superior in architectural merit and domestic fitness to all others; and the simple question for the committee to decide is, which is that design.

Perhaps some anti-Gothic reader may say, "Yes, an architect of genius may make a very superior design in any style, but what style is fit for the climate, the habits of the country, and the wants of the present day, is another question, and the Pointed style is not." Now let us see if this bold assertion is true or not.

The Gothic style, notwithstanding it is an English child, has had a hard struggle to become adopted by its parents. Some twenty years ago they would hardly allow it to enter places of worship, and now they would say, "You are not fit to enter places of business like Government offices. You are a too serious and holy man. We do not want your poetry and chivalry. We want some design *à la Jupiter*, or *à la Diane*, or rather *à la Venus*,—anything which will do but your serious face."

As far as I know architecture, the Gothic style is quite as fit for domestic arrangements as any other as regards its construction. The walls are strong, because their strength is always near the pressure of the arches or girders, it being a mistake to consider that the strength of a wall consists in its greater or less thickness over the whole length. There is no style better fitted for the construction of vaults in the basement floor, and for lofty roofs; the present low unventilated roofs being the chief reason of so much vermin in the metropolis. There is another prejudice, namely, that Gothic windows admit less light in an apartment than others; but the truth is, that a window of 8 feet square, pierced through a wall of 2 feet thickness, would give in the Greek, or Roman style, 0.64, but, in the Gothic style, 1.00, consequently there is 0.36 more surface of light in the latter. For further examples for information look at the town-halls of Louan, Bruges, Bruges, and other similar edifices in the Medieval style of former towns, and judge for yourself.

I must apologise for having entered more at large in regard to Pointed architecture, but I wish to meet errors or prejudices, if there should be any, and to set the public on a fair footing; and now I can be brief.

Among the five Medieval designs I allude to, the Southern Gothic is Venetian; but notwithstanding the drawings are both skilful and tasteful, I consider the principles of a southern arrangement,—a large surface of wall and small windows,—less fitted for a northern and foggy atmosphere, where rather a large surface of light is wanted. There is, among the four of Northern Gothic, one with several perspective views. It has a fire in the centre of one of the elevations, and I should call it a very clever design but for its great similarity with existing specimens of that style on the continent. But there is another Medieval design

\* To be continued.



which suppresses every other project in that line; a building which, in its design, is as well as in its execution, a masterpiece of architecture, and with materials, in fact, a superior poetical inspirator.

When I survey the results of my investigation as to the merits of the various styles, I find the Gothic style, superior to the other 216. But I must leave to others to say whether I am right or wrong. The result of my investigation is, that the Gothic style is the only one which is not only a masterpiece of architecture, but also a masterpiece of poetry. When I took up the pen, it was not to do injury, but to do justice. In fact, it was to do justice to the whole of the Gothic style.

DR. JOHN.

#### THE WESTMINSTER DESIGNS.

YOUR correspondent, "A Mediævalist," says, "The designs upon which the advocates of a Classic building at Westminster are most carefully silent and which, nevertheless, lie at the root of the right solution of the problem which is now to be solved; and this is the question of association with existing buildings." He then gives the *medieval* view of this subject, and, standing on the Hangerford Suspension bridge, looks at the way, his one of approving people of the House of Parliament, thinking the refusal or refusal is to sweep away everything of Classic character, leaving no ground for any other, but to be in favour of Gothic adoption. But I speak respectfully, and in the very spirit of his own proposal, for "association with existing buildings" whether this would be right, in the enlarged view of the subject, having—which I think it should—a due regard for the architectural compendium that includes the Gothic structures on the south, and the numerous Italian edifices which extend northward to St. Martin's Church, thence westward to St. James's Palace, and thence again to Buckingham Palace, and so onward? Surely "A Mediævalist" does not mean wholly to ignore the new Treasury buildings, the Horse-guards, Inigo Jones's Banqueting-hall, St. Martin's Church, the Pall-mall Club-house, and the palatial edifices of St. James's Park! At all events, if he denounce them critically, he cannot do away with them substantially. There they are, and they will remain, most probably, as long as the grand additions which are shortly to be made in their immediate neighbourhood, and therefore, to say the least of it, some accommodating spirit of compromise should be allowed to operate.

Permit me, then, to call his attention to the following observations in the *Critic* of the 1st of June last, where the subject is regarded "on the broad question of harmony."

"The buildings to be erected are to connect the absolute Gothic of the Abbey with the modified Gothic of the Banqueting-house and the Italian architecture of St. Martin's Church, Pall-mall, &c. The new Houses of Parliament are a modified Gothic, forming a link between these and the Abbey. We therefore desire to see a range of buildings which may harmoniously unite the Houses of Parliament with the Palladian and the Palatial Italian of the quarters alluded to. To effect this required harmonization, we would be ourselves favourable to the rich Renaissance architecture of which we have so many native examples that we need scarcely refer to those parts of the Tuilleries and Louvre at Paris, which, however, serve us for illustration. Though their features are of Classic origin, they are capable of such treatment as to render them productive of a general effect, continuing to a meeting point, or rather to an agreeably combining complement, the respective characteristics of the Gothic and Classic extremes. All this would be made available to the grand entirety that is to be; and the walk from Pall-mall to the Abbey would exhibit a chain of sequent passages of art, charming to observers in general, and reasonably satisfying to the eyes even of those who have their strong architectural predilections either way. \* \* \* At all events, every architectural monomania should be placed hopelessly hors de combat. We require for judgment the enlarged mind of general architectural knowledge, and the comprehensive feeling and taste, which is the result of long experience and largely varied practice or observation."

"A Mediævalist" speaks of "some of your correspondents indulging in visions of the eternal repetition of some dead level line in its windows and doors, columns and cornice, of wearying similarity and painful horizontality," and speaks of a "pietresque skyline" as if it were only attainable in Gothic design. Now, in the first place, rejoicing and fully concurring in the eulogy he bestows on the Houses of Parliament as a building of its kind, and yielding to no man in my admiration of Sir Charles Barry, of whom it may truly be said in plain English, "He touches nothing

he does not grace," I yet must question the safety of taking the Houses of Parliament to illustrate the opposite of "similarity" and "horizontality." The making some parts of the building higher than others, the placing a bulky tower here, and a slender tower there, the adorning of masses of walls with shadows in the surfaces in the rear, are all quite as comfortable with an ill-drawn line as with the finest modulation of the Gothic. Is there a finer skyline in the world than that of St. Paul's Cathedral (tho' I quite give up the Classic as applied to the church)? Does not the dome which is crowned with its lantern, its spire, its connection with the structure generally, comprise successfully with the Victoria Tower? And are the comparative towers of the west front of the cathedral unworthy of a comparison with Sir C. Barry's Clock Tower? The "levelness of walls, doors, and cornices," need no more be "level" in a Classic than in a Gothic structure; nor need "similarity" be more "wearying," nor "horizontality" more "painful" in one case than in the other. But, when your correspondent talks of "reducing" as adding in that "horizontality," I am reminded of a former Irish senator's bull, when he spoke of "standing prostrate;" for assuredly, if columns be aids and abettors in the critical crime of horizontality, they are so in spite of the most emphasised verticality! The great use of the portico, apart from its practical purpose, is the very redemption of the evil which your correspondent so justly condemns.

I have only at present to add that the opinions quoted from the *Critic* are my own. Of the designs now under judgment, I am wholly ignorant. It may be there is no one of them illustrating the principle of "association with existing buildings," but I quite concur with "A Mediævalist" in thinking (for I had thought so before he wrote) that this consideration "lies at the root of the right solution of the problem which is now to be solved;" and it is in this conception that a compromising harmonisation, conciliatory to the feelings of the leaders engaged in this great battle of the styles, is deferentially submitted.

GEORGE WHITWICK.

A CORRESPONDENT, entitled to be heard, has forwarded to us some comments on the opinion expressed in the pages on the meaning which ought to be put upon the words "line only," in the Instructions for the Elevations for the Government Offices. He says:—"So perplexed was I myself with the meaning of the term, that I wrote to the Office of Works for an explanation; but, like other applicants, obtained none. I therefore endeavoured to form my own opinion. I came to the conclusion that if the framers of the programme had meant *outline*, they would have said so; that they could hardly intend mere outline, as that, by excluding the means of distinguishing wall from window, or projection from recess, would tend to nullify the object of the competition. Considering the designs as different as possible to be understood; and consequently, that the expression, 'line only,' was likely to mean that simple mode of drawing, half outline, half etching, which has of late years become one of the commonest, and, as I think, one of the very best systems of making elevations at once simple in execution and readily intelligible. I therefore adopted this system, merely etching in my window-openings and slight suggestions of shadow, just enough to show where I meant a projection and where a recess. If this be dishonest, I can only say it was not so intended. The rules, according to your own interpretation, did not extend to the detail of the drawings, so that even those who applied colour to them (which I did not) were within the pale. It has been objected, however, that the instruction, 'I admitted etching in line, and no utility; I demur to this. Its object, like that of all the instructions, was this, to keep the drawings simple, and at the same time uniform. To render them uninteresting, or difficult to be understood, would have been contrary to utility. So little did the question strike me when at the exhibition, that I cannot recollect how the drawings, generally, were executed; but I fancy that they nearly all had more or less of this simple etching; and to exclude a design on such a ground would be not only most grossly unjust and stupid, but destructive to the great object of the competition. Why, I would ask, was light Indian ink prescribed for the plans? Was there any utility in this? It is clear that the only object was uniformity, and the same was the intention in the other rules, though no regulations can perfectly effect this, as every man has a style which will, of necessity, give his drawings a certain degree of distinctive character."

#### MR. WIGHTWICK AND THE CLASSICISTS.

SIR,—On reading even a second time the very clever and complete statement of the Classicists' case, which your anonymous correspondent so benevolently commends to my study (which he may be assured, every sophism and argument in it not supplied by myself he received years before this their appearance, and probably before any one thought of writing them down), I confess I puzzled me to discover which side Mr. Wightwick means to serve;—whether he were in sober earnest, as the "Competitor for the Block-plan" takes him, or were a real artist who had taken this ingenious way of exposing, by slightly caricaturing, the theory of our opponents, as the talented author of No. 146, did their practice; the satire being, however, in both cases, it seems, too delicate to reach the "Competitors' apprehension; as that conveyed in the temple-toppled composition failed, I observed, to penetrate the dense cloud of mystified reverence enveloping many an honest visitor to the Hall days. On

one hand, it seemed incredible that any one really thinking (that is, really interested, for this is all a matter of "interest-bred" opinion) on the side Mr. Wightwick adheres to, or, interested in keeping up the standard division called "Classic Architecture," and passing it off as a "school of art," could be so unkind and so suddenly rash as to put his arguments, during the short time the late exhibition was open (even supposing him ignorant of its contents), into that form of defiant questioning, as "What can you do without pseudo-architecture, without minims, buttresses, pinnacles, blind arches, wall panelling?" when, for aught he knew, his readers, with the defiance fresh in their memories, might the next day or hour walk into the Hall and find every question exactly and pertinently answered to the very letter. For this, Mr. Wightwick knew, must be the case, if there were but a single true artist, a single really inventive man among the whole body of English competitors; because no Englishman could be ignorant that his countrymen (architects alone excepted) utterly despise and detest "pseudo-features," and will only tolerate or pay for them *faute de mieux*, as a means of keeping up appearances,—a desperate and humiliating substitute for decency or artistic grace. There is not one Anglo-Saxon, or body of them, out of the architectural profession, from the Queen or Parliament to the creators of a gipsy camp, or even, to go lower, to the creators of mimic churches for the Puseyites,—not one Anglo-Saxon who, in this year of grace 1857, knowingly and willingly admits pseudo-architecture of any style or scale, from pseudo-Victoria Towers, or St. George's Hall colonnades, to the most "inobtrusive" fictions about the absurdly flattered Travellers' Club (of which more hereafter), not one who would not pay for their room instead of their company, if without them he could get a building to look decently respectable. The demand is well understood to be simply for respectability of appearance, and not for any style of architecture (still less of pseudo-architecture), except as a means to this end. Therefore, as demand regulates supply, no designer knowing this (that is, no English designer), able to attain the end without those means, would use them. And thus Mr. Wightwick might be sure that if there were a single real artist's design, not by a foreigner, in the Hall, his defiant questions would all be answered pat (as they were in one at least, if not in others). And to count on there being not one wise man among us, seemed rather too rash. No, I said; Mr. Wightwick is evidently the author of one of those real designs that distinguish this competition; and seeing the very poor chance they stand of notice by the gaping crowd, he is trying by these questions to put people on the scent that may lead them to the right game. Figuring the character—the very common one, unhappily—of one of those inattentive, fainthearted, and at the same time untravelled Cockneys (for even the dullest could hardly step beyond the Channel without having the mind more opened), whose entire conception of the possible in building is derived from modern mimicry and shams, among which he is born, lives, and dies,—who never looks on a bit of real work but as a curious old relic (for I pray you to observe that Mr. Wightwick never in his whole paper once refers to a single architectural reality, from the Parthenon to a railway-bridge, but draws his whole range of illustration upon what are truly called "the Monkey styles"), he affects to ask, with their stolid naïveté, what can an architect do without pseudo-construction? Would you leave the poor wretch without straw, and not mislead the tale of fiction? Do you Mediævalists, after deriding our classic fictions, depend the less on fictions yourselves? Have we not as much right to our mimic columns, entablatures, pediments, as you to your "buttresses, pinnacles, blind-arches, and other pseudo-features, without which your walls might be as bare as a barn?" Ay, and as much right to our "grand" fictions, our "whole end or whole side of a Greek temple," as you to your whole "Victoria Tower," or central tower, or Lady-chapel, miscalled a "chancel," or whole "clear story," without a window (don't laugh, you may see it at Christ Church, Streatham), or whole nave-arcade, without gallery or story to support? (Of course, my brave Classic, you have quite as much right; and if you ask any of those who don't design, but pay, he will tell you exactly how much right that is.) "What right have you to more than—" Mr. Wightwick says he "need not continue the repliant echo. But this is mere recrimination; and in defence of one party" he will answer for both. And the answer he gives agrees with this my first hypothesis, that he meant to expose both, and meant his readers to see all his questions answered in the only way possible, that in which they were answered, on the screens of Westminster-hall. "To resume," says he, "the surface decoration of a piece of architecture (observe that sly saving word,—he knows nobody wants

\* Mr. Wightwick's paper was written previously, and without any reference to the Government Competition.



'pieces of architecture,' but houses, churches, factories, and offices, the surface decoration of a piece of architecture, Gothic or Classic, should have typical reference to some constructive feature indigenous to its practical development, or to some extraneous appliance which may have been customary. Admirable—worthy of Vitruvius! There is only one possible cavil to such noble doctrine; and that is,—that not one man, woman, or child in the British empire, who is not a professional architect, believes it.

And if proof is asked of this, I will just copy here a direct counter-doctrine on this point, which I think it will be found they do or will believe. "That all decoration or ornament which takes for its subject, human work, is base," and at length disgusting to every mind;—that "to carve our own work, and set it up for admiration, is a miserable self-complacency. And all noble ornament is the exact reverse of this: it is the expression of man's delight in God's work." And having now placed side by side, these two short, but elaborately studied doctrines, Mr. Wightwick's and Mr. Ruskin's, on the same point, I am content, without a word of comment, to leave them to fight their respective ways.

But, as I said, Mr. Wightwick seems too rigorously consistent to be in earnest. His whole argument coheres, and rests on the premiss that our business is simply to dress up everything into respectability, by giving it the semblance of some work of certain extinct species called *artists* and *inventors*, who, like the megalheria, once walked, and left their traces on this planet;—to produce a masquerade city, the buildings all got up "in character," this Roman, that Gothic, and the prison (oh, prodigious idea), the prison of all things, in the noblest style accessible to us,—the prison Norman! Grant the premiss, that no art is wanted, and we are only milliners preparing a masquerade, and the argument is unanswerable: I agree with every word.

There is much humour in the paper, and I am specially struck with that dry boast about St. George's Hall, that "no tower is wanted here," which is meant to raise of course the exclamation, "No tower!" We should hope not, indeed, when two "whole ends," and two "whole sides" of temples are wanted only to make it "simple." Equally dry is the question, what do the modern Goths (i.e. the Pugin school), when denied their pseudo-construction, "fall back upon?" Only observe the expression, "fall back upon." Not allowed shams, we "fall back upon" a "purer hospital." Exactly so, Mr. Wightwick; that is the very thing we anti-Renaissance are fighting for; or rather we anti-Renaissance (for we attack just as much Gothic Renaissance as Classic Renaissance; just as much the Pugin-Barry-Scott school, as the Bramante-Palladio-Jones school),—that is the very thing we desire, that every man be left with no refuge of lies to "cover his head in the day of battle," but all be forced to "fall back upon" their own resources, that we may see what is in them, and the mind that produces "pauper hospitals" be discerned from that which produces architecture.

And now a word of what our present most judicious selector of models, "fall back upon" (the offensive words are not mine, observe), in his "Traveller's Club-house." No doubt that importation was, till lately, at least till the erection of St. Martin's schools, the gem of London, and is still so in its style. But I cannot agree that here, or in the Florentine original, "is no pseudo-architecture of ostentations kind." I can neither see why windows require "brows and lashes" in the form of pseudo-columns, standing on pseudo-pedestals, to bear pseudo-entablatures under the pseudo-pediments, nor against what these circuitous arrangements are supposed to be "greatly protective," at least by the convenience-loving Londoners, who so often "barbarously" cut off all that their landlords will let them. Nor can I allow that what is spent in making these windows appear covered by lintels, in a brick building whose brick windows are arched, is either well and effectively spent, or spent in anything else than pseudo-architecture. But of this the building and its class offer one special instance, on which the Florentines must speak for themselves. Pray, what are all those courses of wrought stone, often rising many feet, in your "well-proportioned" palazzi, between the highest window-heads and the roof, and not unfrequently, too, between other windows and the ceilings over them, amounting altogether sometimes to a third of the material and workmanship in the whole visible walls? I can understand three motives for height in all apartments,—obtaining of light, store of air, and dignity of appearance; but I cannot see which of these gains one particle by an increase in height of wall only, not shared by the windows. The effective height of a room, whether as to lighting or picturesque proportion, is simply the height from the floor to the highest window-top—neither more nor less—whether the ceiling spring below that level, as in cathedrals, or

above it, as in Florentine palazzi. All space above that would be sheer waste, even were the ceiling self-ventilative, as in the scientific Alhambra or Roman baths (twenty centuries in advance of the age of Faraday and Arnott!); but with the death-deadly arrangements of our "architects," who cannot yet learn whether hot or cold air is heaviest, it is far worse than a waste,—being simply an inverted cistern of foul air,—a *consumption and fever tank*, exactly similar to the "clear story" above referred to at Streatham Church, except in needing no columns and arcades for its special support. Of course, registration analyses, if made with this view, would show the mortality and disease to be a function of the number of inches depth in these overhead fever-tanks, whether from the top of window opening or of Dr. Arnott's valve-opening to the ceilings.

And this brings me to another connected fallacy in Mr. Wightwick's argument, before returning to which I would wish to observe, that though the club-house referred to is, as times go here, an uncommonly decent work, and, with a little more thought, might have been almost respectable, such things are not, as Ruskin says, "anything to be proud of, especially when you did not invent them." This has to be said, not as implying for a moment that a man of Sir Charles Barry's sense would be proud of their selection, or even Raffaele of their invention; but because it is an absurdity that the latter should never probably, either in life or since, have received a tenth of the fulsome laudation for his Palazzo Pandolfi, that Sir Charles has already had, for happening to be the first Englishman at once a bred architect and having the common sense to see, like other Englishmen, its superiority. I must observe, too, that remarks like these have never appeared to me, even if they came from unsuccessful or disappointed architects (which the severest never have), to show any such "jaundiced eye" as your correspondent, the "Competitor for the Block-plan," talks of. I know not the names even of the authors of more than two (and these the two I place lowest), among the designs I have indicated as really artistic; so that the "Quixote" to whom he thinks me such an unworthy Sancho, is a perfect stranger. My fears and grumbling, therefore, are by no means for these "less fortunate but more deserving men than Sir C. Barry," &c. They can take far better care of themselves than those for whom I am fearing and grumbling—the juggled, mystified, and robbed public—can. England has far more need of such men than they have of England. I said they would bide their time; and the grievance I complain of is not their having to go without commissions, but the notion to go without them. And a most essential point to be learnt by the public (would that some plover pens would undertake to teach it) is the relative position of such and the former class;—that the latter, however useful in their right sphere, are altogether a lower order of beings—another species of the *genus homo*—than those who ought to design public buildings, if they are present (which we now know they are), and a species inferior as is the "Sancho" style in which I am trying to express these things, to that in which I wish it could be expressed, that of Milton or Addison.

But I said the monstrous, the inhuman, total neglect by our architects of a most important part of their duty,—*innocuous structure—physical harmlessness*,—was connected with another point in Mr. Wightwick's letter. He thinks he finds some reason for the Gothic fenestral system, with stone mullions, wherever the glazing "is not to open, but remain fixed with lead and iron." (Why he wants lead, by-the-by, with glass-plates of the sizes now most useful and rational, I cannot tell.) Now in this matter of mullions, he is, so far, more Gothic than I who call myself a Goth; for the one sole, but (in monumental works) all-overweighing motive for stone mullions, rather than wood or iron, being imperishability, I confess my inability to discover the sense or motive for imperishable supports to the glass, where there are none to those other trifles, floors and roofs. If we dreamt of building anything, like our mediæval ancestors, for posterity, I could understand in us as in them, after the bestowal of thought and expense in making floors, roofs, or at least coverings, permanent, the bestowal of more on making the window-fillings so: but what advantage is anticipated from the glass lasting longer than the building's shelter overhead, surpasses my power to perceive. However, "in all other buildings" than churches (why not in them he does not say) there will be many windows requiring to open, and then stone mullions become fearful conductors of the tempest." On what mechanical principle they thus act I hope Mr. Wightwick will explain, for it must be a very novel one. But the main question I here want to put to him is this? Who or what makes this opening of windows necessary? You say it was not necessary in all buildings. Certainly it was not. Windows were invented to

transmit light, not air. They were only wanted for light in the Roman baths, and in many Medæval churches, constantly crowded, especially in the Alhambra, in a climate where ventilation is not half so easy as here. Now who created the necessity for making them also ventilators? Is it so by a law of nature, newly come into operation since the Middle Ages? No. The Creator has not made it necessary. It is you have done so; yes, you, Messrs. Wightwick and Co. in every one of your buildings; by your total neglect of this great branch of your duty, innocuous construction; your entire refusal to consider and reason out *ab initio* (as the real architects considered everything) the breathing of those you built for, and the disposal of their breath; which you would then have found to depend entirely on the structure of your ceilings, not your windows; but having left all this to chance, and to better men than you, to the various tribes of remedial inventors,—building-doctors,—architecture-curers; whose business is to step in, as the architect steps out, and begin such mitigations of his blunders as may be practicable, without pulling all down; these useful men have contrived various highly ingenious, though at last, of course, miserably ineffectual (that is not their fault) shifts and remedies, among which is this very ingenious English window-sash. Do not think any architects contributed to its invention: architects invent nothing; though Mr. Wightwick has the astounding self-complacency to think that "we take a shed, and we (*prok!* quator), WE artistify it into a portico;" with which quotation I beg to leave his interesting paper for the present. E. L. GARBETT.

#### FRATERNITIES FOR THE DEVELOPMENT OF ARCHITECTURE.

You kindly allowed me to "have my say" in the great architectural controversy which has been going on about "styles." I trust you will now permit me to add a few lines to direct the attention of your readers to a great practical duty devolving upon all who love their art, on whatever side they may range themselves, viz. that of combining together to carry out their principles by conventional agreement. It may be, and perhaps must be, a long time before much lasting good can be effected; but, if art is ever again to rise to what she once was, it will be found that her chief hope must consist in closer compact, and in a more general bond of union, than at present exists amongst those who are now striving against the tide to place her where she ought to be.

Now, for the production of good and pure architecture, there are three requisites:—1. Imagination, for the conception of beauty; 2. Feeling or Taste; 3. A sound sense, able to argue out and form a correct judgment on subjects of scientific research. All these are generally acknowledged to be essential, but the necessity of a due cultivation of the latter—the reasoning faculty—is far too generally forgotten: we are too apt to trust to our fancies and feelings, to our perceptions of what we deem to be truth, instead of analysing our reasons, or submitting our works to any fixed test or standard of right and wrong. Tests of beauty or standards of taste I have nothing now to do with, but with matters true or false in a scientific point of view,—for unless architecture is true to science, as well as to imagination and feeling, it is no real art,—and hence it is that I desire to see a re-union to some practical purpose for the permanent establishment of such facts, and carrying out of such principles as are capable of demonstration or proof. Perhaps there is amongst us too great a jealousy of imparting to others the benefits of our own experience or research; perhaps, also, too much of false shame against condescending to make use of the investigations of others: we shrink from the acknowledgment of others having discovered more than we could have found out for ourselves: perhaps, too, inability to store up in our minds for reproduction at the proper moment all that we are continually gathering from various sources deprives us of much of the benefit of our once acquired knowledge, and we fear to confess our ignorance to others. Whatever may be the cause, nearly all our professional practice is one of individual isolation and seclusion. True, we have our societies, associations, and institutions; we discuss "generals;" we sometimes pass sweeping condemnations on those who do not agree with us,—or rather on those with whom we do not happen to agree;—but as for quiet, deliberate consultation and co-operation amongst ourselves, far away from the public eye, where is it to be found? If any of your readers can tell me of the quiet work to which they resort, in order to aid each other by friendly intercourse in searching for, and pointing out, practical defects and inconsistencies, or unintentional disobedience to principles to which they have upon calm deliberation subscribed; let them, for pity's sake, admit me to their number. I shall never be above receiving thankfully any suggestions which the common consent of others



shall show to be capable of reasonable demonstration, though I might not pledge myself to follow them in each particular instance. I shall never grudge my mite of information, or hold myself aloof from anything wherein the true interests of art can be the best served. I shall never make a boast of having been instrumental in enabling an erring brother to avoid a false step, or to escape a pitfall; for I should feel that the error or inefficiency of one would be in a great measure a reflection upon all; and that by the success or advancement of one, all would be really and permanently benefited, for the standard of art would thereby be raised, and the field for lawful emulation enlarged,—the strong would be supported by the weak, and the weak would be helped by the strong. We should be helping ourselves forward in the race, not by retarding others, but by advancing in our own position.

Nor is this all. When any one occasionally prefers sacrificing a commission to his art,—when he gives up mere money rather than a true and living principle,—what comfort and support would he not have in being assured that others also were ready to do the same,—what weight with those extraneous to his own fraternity,—what influence amongst those who are looking for some more authoritative and more progressive power than any which yet exists? More more. It is generally acknowledged that art can never attain to any degree of eminence but by the origination and successive development of some style or school. And how shall any style or school of art arise but by some such process as this? We despise the dark ages of confraternity and freemasonry; and now that freemasonry exists only as a hollow shell, whose kernel has been eaten out by age, and is employed only as a means of social fellowship and brotherly assistance, without the slightest reference to its original purpose,—it is no wonder that the whole principle of it should be looked upon with an evil eye. But when we call to mind what glorious results such a community of hearts and interests did once produce, we may well pause and ask if the kernel is really lost to us for ever. The overpowering argument against it all is this,—“How can men be brought to work together in such days as these, when everybody feels bound to push his own interests to the uttermost?” But has it been tried? And has it failed? or is it still smouldering in some secret corner to burst forth into life and energy, so soon as it shall have gathered sufficient strength to kindle? May I be not the last to get light and heat from its glowing flame!

It is your own columns which have stirred me up to ask this. I am aware that it is only “kindred spirits” that can effectually work together for a common good; but if any number of such kindred spirits would collect themselves into their several groups in support of their common cause, they would fight more manfully, and try their respective strengths more effectually than by each individual standing alone to fight his own battle in his own way.

There would then be far fewer gross blunders and serious mistakes, even amongst the less proficient, than there now are. But when such severe censures are constantly heard as those which have been passing from mouth to mouth during the last six weeks, and in the most eminent exhibition of architectural design which there has been for years; when it is said that such and such a design is all arch and cornice; another only blank wall, pierced with square oblong openings; another a mere mass of fretwork; another displaying successive arches under openings, with little or nothing to carry, as though arches were meant for ornament rather than use; whilst another is said to be nearly all window, without wall space or point or repose; another, dead wall, without relief; another, all roof; and another, without any visible roof at all,—when such are the criticisms on all sides in an exhibition of that sort,—whether the criticisms are deservedly or undeservedly bestowed,—it is not to be wondered at, however much it is to be lamented, that the voice of the people should aim at directing and reforming art, instead of art herself directing and reforming the taste of the people. I say it is indeed no wonder; for when amongst professed allies there is nothing like unanimity, or subjection to any kind of reasonable restraint, there is but little chance of the r having weight with others, or even of their gaining an attentive ear to their own side of the question at all. Whilst on the other hand, if all teach the same truths, and all carry out into practice the same principles, then, and not till then, others will be found to pay deference to those who profess them, then, too, and not till then, will novitiates in any such school of art, or even converts to it, find a resting-place for their confidence, and a secure home for their sympathies.

And if there is such a thing as truthfulness either in materials, construction, or in any other principles of art, the way to arrive at any true results must be by analysis and scientific research into the laws which

regulate them. For the sake of concentrating the argument upon this single point, I am purposely setting aside all that might be advanced of a similar nature in favour of the like process being equally applicable to the improvement and cultivation of the imaginative and perceptive faculties also. But the value of the deductions of science, and of the applications of common sense, by means of mutual co-operation, to practical and definite purposes, forms quite a sufficient plea for such fraternising, independently of the other and higher results to be attained by such mutual aid and intercourse. I know that many despise and deprecate the bare notion of such a thing, but this is no valid reason against others taking hold of it, and using it with advantage. And is not this the time for action, when the attention of all is being so prominently called to our present defective attempts to apply our principles in our ordinary practice?

Let me not be supposed, however, to be laying down a “royal road” for the attainment of knowledge, imagination, or taste. Nor let any be led to think that a mere gregarious system will ever be the parent of one great mind. All I maintain and contend for is, that in order to a proper cultivation of artistic talent and a healthy development of art, there is need of closer contact of mind with mind; and that in an ordinary way an immense deal of good might be gained and an immense deal of evil escaped, by each helping each other in such ways as this, and that art herself would immediately be placed upon a firmer footing, and take a higher stand, by a combination of individual efforts, than by the present blind subjection of each one to his own individual caprice and will, and unaided judgment. I have of course my own notions as to the principles upon which such fraternities should be conducted, and on which alone I conceive such schemes could be carried out with any reasonable prospect of ultimate success; but I do not think this the time or place to enter into details.

WILLIAM WHITE.

#### PROPOSED NEW YORK EXHIBITION OF BRITISH ART.

We hear that it is in contemplation to organise in New York an annual exhibition of the works of living British artists—painters and sculptors. There is good reason for believing that such an exhibition would be welcomed by the Americans. The wealthy classes in New York are well known to be lavishly sumptuous in the arrangement and decoration of their dwellings, and they would be glad not only to call in the aid of fine art for this purpose, but to have its productions brought home to them, for that constant contemplation and study which exhibitions and museums of a similar order receive throughout Europe. If well managed, we should have no doubt whatever of the success of the scheme, and the good that will result from it.

Active measures are already in progress for making the projected exhibition a fact. Mr. Augustus Ruxton, the original projector, left London for New York at the beginning of May, with the view of communicating with some of the leading men in the States, and of obtaining a gallery. Mr. Ford Madox Brown, the historical painter, has consented to accompany to America the works that may be offered, and to superintend the hanging and all other such preliminaries. Mr. W. M. Rossetti is acting as secretary.

With the best possible feeling,—indeed, an anxious desire that the project should be carried out successfully, and to the honour of the gentlemen who have originated it, we would suggest the desirability of not confining it, even in appearance, to any one school or party. They must, moreover, take care into what hands they place themselves in America, taking warning by some of the circumstances connected with the “Universal Exhibition” there.

#### MAGISTRATES' DECISION UNDER THE BUILDING ACT.

PERMIT me, Sir, to direct your attention to a recent decision of a police magistrate, in which a theatre, a room of public entertainment and resort, in a back-garden, because not affixed to the freehold, is decided *not* to be a building. Also to inquire, if it be not a building, what else is it to be considered? And further to remark that, supposing the decision to be a sound one, it is fraught with extreme danger, particularly in the suburban districts, to allow such buildings to be erected without proper supervision; in fact, without any supervision at all, either as to materials or construction. On the plea of temporary buildings, many irregular buildings are built, and afterwards made permanent by the addition of brick chimney-breasts and flues.

AN OBSERVER.

\* We fully agree with our correspondent that the decision in question was both erroneous and dangerous.

#### A FOREIGN COMPETITION.

THE municipal authorities of Bordeaux, to aid the impulse which has been given to the fine arts in Paris, have determined on the erection of a fountain, of monumental character, in the *Henriche des Quinzevinges*, and they have invited artists of all countries to submit designs for it. The choice of material is left open, and may be of several kinds: the cost is not to exceed 8,000*l.* and the designs are to be sent in by the 20th of November, 1857. A premium of 240*l.* will be awarded by the jury, if a design of sufficient merit to justify it be presented. In addition, the sum of 160*l.* will be placed at the disposal of the jury, and be appropriated as they may decide. In the event of the execution of the selected design being confided to the author of it, he is to receive *independently* of the prize, an *honorarium* equal to the twentieth of the whole outlay. The jury will consist of twelve members, under the presidency of the Mayor of Bordeaux, and will include two members of the Institute, two artists, who have obtained a great medal of honour, or a first medal at the *Exposition Universelle des Beaux-Arts*, and two members of the Society for the encouragement of National Industry.

The terms, it will be seen, are most liberal, and entitle the municipality of Bordeaux to the warmest praise. A copy of the exact conditions may be seen at our office.

#### ST. JAMES'S-PARK BRIDGE, LONDON.

The bridge across the ornamental water in St. James's-park, determined on to improve the means of communication between the districts on each side of the park, is making progress; and we now place before our readers a view of the aspect it will present when finished.

The engraving will explain the general construction of the bridge.

The anchor tunnels are founded on the London clay, which is met with 20 feet below the surface of ground. Above the clay lie beds of gravel and sand, about 10 feet thick in all, on which the columns of the bridge stand. The span is 140 feet between abutments, or 157 feet 6 inches between the highest points of the suspension chains. The bridge is designed for foot passengers only: the footway is 12 feet in clear width, and is to be covered with asphalt laid on two thicknesses of diagonal elm planking.

The weight of the suspended roadway will be 523 lbs. per foot run, or about 33 tons in all. The maximum load is taken at 1 cwt. per square foot, which is something over that due to a dense crowd of people. The total maximum load, therefore, upon the chains, exclusive of their own weight, will be 119 tons, uniformly distributed. This gives a strain of 12 tons on each pair of suspension rods. The maximum strain upon the chains over each pair of standards will be about 275 tons. The chains on each side of the footway are in bundles of six links, and have a section together of 56 inches. The maximum strain on the iron will thus be about 5½ tons per square inch of section. The strain on the anchor beams (tending to tear them up from the ground), on each side of the bridge, is equal to 380 tons in a vertical direction, and about 551 tons horizontally. This strain is resisted by a large mass of material, principally concrete, placed in and about the anchor tunnels.

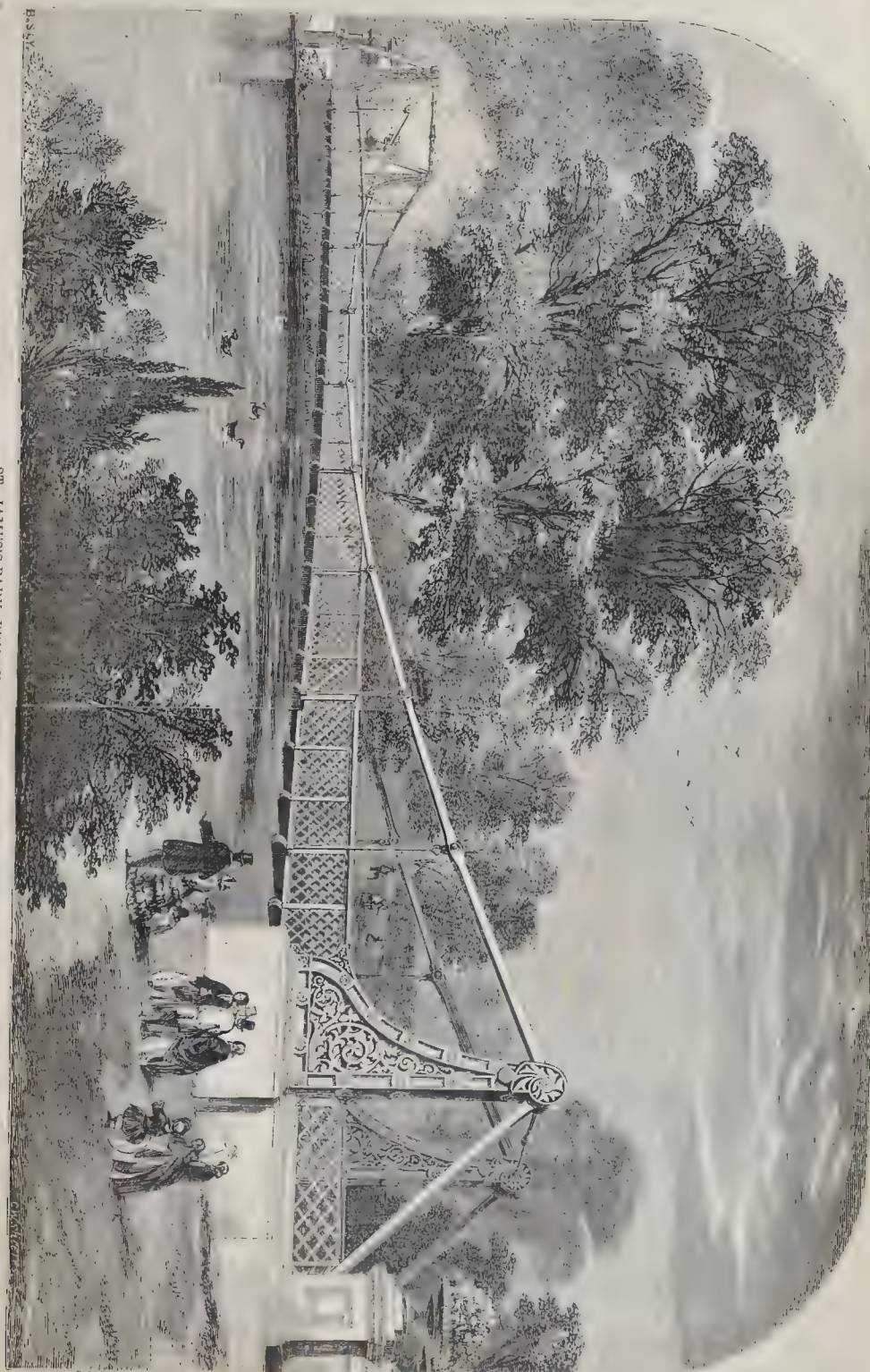
It was intended originally to cross the lake by a viaduct, but this was objected to on the score of its obstructing too much the view along the lake, and a suspension-bridge was finally agreed upon as the form of bridge least open to that objection.

The cost of the bridge will not exceed 4,500*l.* Messrs. Rendel are the engineers: the decorative portion was designed by Mr. Digby Wyatt.

THE WATT STATUE AT MANCHESTER. —The statue of Watt was to be fixed on its pedestal, in front of the Manchester Royal Infirmary, on the 23rd inst. It was to be inaugurated by Mr. William Fairbairn, F.R.S., the president of the Literary and Philosophical Society of Manchester, and chairman of the Watt committee. The statue is in bronze, after Chantrey's, and will occupy the corresponding pedestal to Dr. Dalton's.



ST. JAMES'S-PARK BRIDGE.—Messrs. KENDEL, ENGINEERS.





## CHURCH-BUILDING NEWS.

**Chilton Cradock.**—The following are the tenders for the erection of a rectory-house in this parish:—Greig, 3,608*l.*; Lucas, Brothers, 3,570*l.*; Mansfield and Son, 3,189*l.* Mr. Thomas B. Barry, architect. The quantities were supplied by Mr. W. W. Gwyther.

**Walslop.**—Improvements at the parish church have been commenced with the renovation of the chancel. This portion of the church belongs to Christ College, Oxford, by whom the improvements are being carried out. The east end of the chancel wall is taken down, and the present one replaced by one more highly decorated. The old picturesque ceiling was retained, and a new roof added, with a pointed gable. A new stone arch, with carved corbels, will be placed between the chancel and the body of the church. Mr. J. Billing is the architect; and the carrying out of the work is entrusted to Messrs. J. and W. Fisher, of Oxford.

**Chester.**—At a meeting on the 11th inst. of the subscribers to the fund for erecting Chancery Baikes' monument, to examine several designs and select the one most approved, the Rev. Chancellor Thurlow announced that the subscriptions amounted to 255*l.* Several designs, by Mr. Penson and Mr. Harrison, were handed round, and the choice fell upon two exhibited by Mr. Penson. "At this moment," says the *Chester Chronicle*, "a design by Mr. Henry Sumners, architect, Liverpool," was handed in, and excited the admiration of all present. It represented an ornamental canopy surrounding a coped grave, with a railing surrounding the structure. Eventually, however, the choice fell upon one of Mr. Penson's drawings. The design is a monumental tomb, of massive character, in the Early English style; the roof supported by a two-centered arch, enriched with the ball flower and dogtooth ornament; the soffit of the arch is relieved with moulded ribs and carved terminations; the ends of the tomb are designed with buttresses and niches above, surmounted by crocketed canopies. Underneath the arch is a sculptured recumbent effigy, reposing upon a monumental base, ornamented with the emblems of the evangelists in the quatrefoils. The total height of the tomb is about 20 feet. Mr. Penson also submitted other designs of a more decorated character, and several of the subscribers were in favour of one of the latter.

**Liverpool.**—The opening of the Prince's Park Presbyterian Church took place on the 10th inst. The church is seated for 500 on the ground floor, and provision is made for enlarging it by a gallery to hold 180. The length inside is 80 feet, and width 34 feet; the height of the walls 19 feet, and to the top of the roof 48 feet. The timbers of the roof are supported on arched trusses, stained and varnished. The style of the edifice is late "Early English," with a rose window at the south end. The entrance is by a porch on the east side, with a spirelet growing out of the angle of the porch and church, in which is formed the stairs for the future gallery. The spirelet rises from a base 11 feet square to a height of 83 feet, surmounted with a gilded cross. The dressed stone is from the Welsh quarries of Mr. Robert Wells, and the facing stones from the Yorkshire quarries. The mason work has been executed by Mr. Thornton, the carpenter and joiner work by Mr. Thomas Wylie, the slate and plaster work by Mr. Thomas Jones, and the painting, plumbing, and glazing by Mr. Holt. The entire cost is 1,710*l.* The architects are Messrs. J. W. and J. Hay.

**Rock Ferry.**—The chief stone of a Presbyterian church was laid at Rock Ferry on 23rd inst. The edifice is in course of erection. The design is in the Early Decorated style of architecture, and was furnished by Messrs. Hay, architects. The building will consist of a simple nave, 71 feet long by 41 feet wide. The roof will be open, arched, and 41 feet in height. The ground-floor will be arranged for the accommodation of 500 persons, and, in addition, provision is made for the subsequent erection of a gallery to seat 180. At the west end a steeple will be erected, which will rise to the height of 140 feet. The edifice will be constructed with white Stourton stone; and all the timber will be varnished. Mr. Fisher, of Birkenhead, has taken the contract for the work, the estimated cost of which is 3,700*l.*

**Smethwick.**—The foundation-stone of the new church of St. Paul, Smethwick, was laid by Mr. J. J. Chance, on 15th inst. The architect is Mr. George B. Nichols, of Westbromwich. The church is in the Early English style of architecture, with nave, north and south transepts, and chancel, forming an octagonal apse, and with tower at the north-west angle. Accommodation is provided for 800 persons, exclusive of children, there being galleries at the west end and in the north and south transepts. The roof is open timbered, stained, and varnished, as also the whole of the interior woodwork. The church is to be built with white bricks, with Bath stone dressings, and the roofs, which are of high pitch, are to be covered with bands of various coloured slates. The contract is taken by

Mr. Tarnell, of Rugby, at under 2,400*l.* and the estimated cost complete, including walling, &c. will be under 3,000*l.* towards which the sum of 1,000*l.* is contributed by the Messrs. Chance, of the glass works, and 500*l.* by their workmen, 500 in number; the remainder sum being made up by subscriptions among the inhabitants of the parish named, and the land presented by Mr. John Sylvester.

**Blackpool.**—A series of stained-glass designs are being executed by M. Bassett, of Leith, for the windows of Blackpool Roman Catholic Chapel. The subject is the Passion of our Lord, beginning with Pilate washing his hands in "innocent blood" in sight of the Jews, and terminating with the Entombment.

**Sheffield.** Various improvements have been carried out in the parish church. Besides repainting and other works, the portion of the west window which can be seen in the interior of the church has been filled with stained glass, at the expense of Dr. Sax, the vicar. The execution of the work is by Messrs. Dury and South. The east window is also to be filled with stained glass. The expense attending the alterations in the church has been defrayed by the Church Buggesses and the congregation. The stained improvements have been mainly at the expense of the Duke of Norfolk, lord of the manor. Messrs. Flookton and Son were the architects employed.

**Leek.**—A new four-light stained-glass window, of the early perpendicular period, has just been placed in the chancel of St. Luke's Church, Leek. The work was done by Mr. Wakes, of Newcastle-upon-Tyne. The first light comprises "The Agony in the Garden;" the second contains a copy of Rubens's "Descent from the Cross;" the third and fourth compartments represent "The Resurrection," and "The second coming of Christ."

**Carlisle.**—Three side windows in the chancel of St. Paul's Church, Holme Cultram, says the *Carlisle Journal*, have been filled with stained glass, by Messrs. Scott and Drape, of this city. The general design is a cross with crozels, in a style which accords well with the architecture of the church, and prevailed in the thirteenth century. The east window also was inserted by the same artists some time ago.

## PROVINCIAL NEWS.

**Woolwich.**—New Roman Catholic schools are to be commenced here immediately, from the designs of Mr. E. Welby Pugin.

**West Ham.**—The Local Board of Health, according to the *Chelmsford Chronicle*, have decided as to the plan for the drainage of the parish, which it is computed will cost, before completed, a sum considerably over 100,000*l.* One portion of the works is estimated at 80,000*l.*; but there are other contingencies to provide for, which it is supposed will amount in the aggregate to from 20,000*l.* to 30,000*l.*

**Windsor.**—The foundation-stone of a building for the ragged schools in connection with St. Clement's Church, Windsor, was laid on 9th inst. The architect is Mr. George Williams; and Mr. J. Nelson is the contractor.

**Gosport.**—The new barracks, North-street, for 1,000 men have been commenced by Messrs. Lucas, Brothers, the contractors. The block just begun is the officers' quarters, opposite the Royal Clarence Victualling Yard. The commanding officer's quarters will be erected on the piece of land at the south side of the Royal Clarence Victualling Yard, and adjoining St. Matthew's Church, while the main block for the men's quarters will be opposite, on the west side of the road leading from Gosport to Priddy's Hard. On the ground, according to the *Portsmouth Times*, there are 2,000,000 of bricks, sixteen cargoes of cast-iron girders, and a crushing-machine for making stone into girders, worked by a steam-engine of 6-horse power, and a patent mill for grinding mortar, worked by a steam engine of 4-horse power. In the brickyard the contractors have sunk an artesian well of the depth of 150 feet, from which they obtain an excellent supply of water. It is calculated that during the season 8,000,000 of bricks will be made at Frater for these works: 400 men will shortly be employed on them at the site itself.

**Yarmouth.**—A committee has been formed to forward a scheme for the erection of a bridge across the river Yare, at the harbour of Yarmouth, on plans and specifications prepared by Mr. Bukenshaw, the engineer.

**Keynsham.**—The parochial schools at Keynsham were opened by the Bishop of Bath and Wells on the 9th inst. They are built in the Early English style of architecture, from the designs of Mr. S. B. Gabriel, of Bristol, architect, and consist of girls' school-room, 65 feet long by 18 feet wide; boys' school-room, 52 feet long by 18 feet wide, with class-room, 18 feet long by 16 feet wide opening to each room. A teacher's residence is built at the south-east end of the girls'

school-room. They are built of native stone (a blue lias), with Bath stone dressings to doors and windows, and the roofs of the Ammonites Red Rooms (found in digging the foundations) being inserted in the several floors. The rooms are ceiled to the back of the eaves, which are stained and varnished, and the roofs covered with dun and red-coloured Devonshire tiles, and ornamental cresting, the whole is mounted by a spiral. The cost of the buildings and land will be about 1,200*l.*, of which 500*l.* have been raised by private subscriptions, and the remainder from grants of the Privy Council and Diocesan Societies.

**Cardiff.**—The excavation of the last 1,300 feet of the upper part of the East Bute Dock is in progress. This dock, when completed, will be 1,133 yards long, 3,000 feet of which will be 500 feet wide, and the depth of water from one end to the other will be 25 feet. Some of the staiths for tipping coal on the east side, where the Rhymney Railway comes in, are finished. The number of staiths on each side of this dock will be sufficient to ship 2,330,640 tons per annum. The present West Dock affords accommodation to tip upwards of 1,069,788 tons a year. The Boulevard will shortly be proceeded with. Buildings are extending on the east towards Ramlah, and on the north towards the Grange and Blackweir, forming a suburb to the east of Cathay's park.

**Stoke-upon-Trent.**—Messrs. Minton and Co.'s new showrooms here have been completed, and are described in the *Staffordshire Advertiser*. The exterior is merely of brickwork, and connected with the older part of the manufactory. At the entrance there is a stone balustrade, inside of which is a staircase. On each side from this porch there is an oak staircase. On each side are passages to a lavatory, &c.—the walls being lined with white tiles. The staircase leads to the corridor, which is 68 feet long by 12 feet wide, and lighted from the roof. The ceiling is segmental in section, and rises from a bold cornice, underneath which is introduced a Della Robbia frieze in blue and white relief, manufactured by the firm. The floor is laid with several patterns of encaustic tiles. There is a balustrade round the staircase, a specimen of the Calbrookdale casting, and which was designed for the place by the architect (Mr. Edgar). On each side, the walls are covered with varied specimens of coloured tiles, arranged in panels, and surrounded by borders of the same material. Several of the panels are faithful reproductions of originals at the ducal palace of Modena, in Italy, others being after the designs of the late Mr. Welby Pugin and others. This apartment is devoted principally to the exhibition of Majolica and Palissy ware. The showroom is 42 feet square, and is lighted by a square lantern, filled with polished plate-glass. The ceiling of the lantern is panelled and enriched. A frieze, composed of printed earthenware tiles, white ornament on a blue ground, encircles the lantern, each side of which rests on an elliptical arch, and the whole is carried by four Ionic columns.

**Birmingham.**—In an article on street architecture, the *Birmingham Gazette* gives some details of a new show erected for Messrs. E. Hill and Co. Chamberlain, from a design by Mr. J. H. Chamberlain, architect. The design is based on Italian Gothic: its details partake of the freer and bolder character of English architecture when England had a style it might properly call its own. The front towards Union-street is 50 feet broad, and the Union-passage front 36 feet broad: the total depth (mainly concealed by other buildings) is 100 feet, and the height 60 feet. The principal front is pierced on the ground-floor by two large arched windows, one on either side of the entrance: over these are two triple lancet windows, each connected by columns, and between them a single lancet. Above these windows is a moulding of blue and red brick. The triple lancets are repeated in the second story, and are surmounted by a richly carved and moulded stone cornice, decorated in the flat with specimens of Minton's tiles. Above the cornice rise three dormer windows. The materials used in the building are white Diseworth bricks, with bands of coloured brick, Hollington stone for the lower story windows, and Bath stone for the windows and ornaments of the upper stories. The whole of the capitals of the window columns are carved in foliage. The principal feature in the interior is the main staircase. The walls are composed of coloured brick and Minton's tiles, and the decoration is carried on by a carved cornice to the stained glass in the lantern from which light is transmitted. On either side of the staircase-hall are open arcades worked in stone. The rooms throughout are panelled in stained fir, and the ceiling of the principal showroom is also panelled. The *Gazette* directs attention to the effect of simple materials in the wooden cornice of one of the showrooms, where the billet moulding is adapted; and to the design of the iron columns by which the ceilings of several rooms are supported. The contract for the building was taken by Mr. Barnley.

**York.**—The Council of the Philosophical Society of York have decided upon enlarging the museum,



provided the funds to accomplish it can be raised by subscription. From plans and estimates prepared and laid before the council by Mr. Piffet, it seems that a room, 90 feet long, with entrance from the geological and skeleton rooms, may be built at the back of the museum for about 450*l.* exclusive of fittings up. The present idea is to attempt to raise 500*l.* by 100 subscriptions of 5*l.* each.

**Leeds.**—The town-hall committee have made arrangements for proceeding at once with the works at the town-hall, under the direction of the architect, Mr. Bodrick. This step, however, says the *Intelligencer*, will not interfere with any proceedings in Chancery which the assignees of Mr. Atch, the contractor, may take, though too long a delay has occurred to enable the assignees to obtain an injunction prohibiting the committee from going on with the works.

**Scarborough.**—The report of the committee of the Cliff Bridge Company, on the proposed alterations and extensions at the Spa, was read at a recent meeting of the shareholders, and the plans of Sir Joseph Paxton, showing the projected improvements, were received. A rough estimate of the cost of carrying out Sir Joseph's design consisted of the following items:—For the proposed new musical hall or principal building, 4,900*l.*; colonnade, 1,250*l.*; vestibule, 472*l.*; alterations to the present buildings, 350*l.*; addition to the wall north of the Spa, 1,250*l.*; improvements and extensions in the pleasure-grounds, including a proposed new road north of the Spa, 650*l.*; total, 8,977*l.* To this the committee add the estimated cost of lengthening the sea-wall and promenade outwards, 3,500*l.*; and for contingent expenses, 1,103*l.*; making a total of 13,500*l.* In order to raise the required capital, new shares at the rate of 3*l.* each are to be issued.

#### THE COMPETITION DESIGNS FOR LONDONDERRY-BRIDGE.

SIR,—I have been glad to see that the competition for Londonderry-bridge designs has obtained a place in your paper. The manner in which such competitions are conducted, and the results which are obtained by them, cannot receive too much attention.

As to the queries of your correspondent, "C. E." it is well known that Sir W. Cubitt was in a very indifferent state of health, and it is understood that, at the outset, he declared that he would give himself very little trouble about the matter of the competition.

How much attention he subsequently gave to it no one but himself can know; but it is true that he called in to assist him Mr. Charles May, whose services has been, as a partner in the firm of Ransomes and May, almost exclusively that of a manufacturer of agricultural implements and of railway chairs, &c.; and the design of the bridge, which was exhibited at a recent meeting of the Institution of Civil Engineers, and for which Sir W. Cubitt's sanction is claimed, is so entirely opposite to anything that Sir William has adopted in his own practice, that the inquiry, which your correspondent states is being generally made, is, at least, a very natural one.

It is true that the first prize was awarded to Sir W. Cubitt's drawing clerk; it is also true that this gentleman has obtained an appointment abroad.

Those who have seen the design made for Londonderry-bridge, some years since, by Mr. Charles May, say, that though the prize design in the late competition is not identical with that of Mr. May, yet that the resemblance, in some leading features of both, is so close, as to leave little doubt that they are the productions of the same hand.

Mr. Peter William Barlow stated, at a recent meeting of the Institution of Civil Engineers, that he had been called upon to make a design for Londonderry-bridge, under Sir W. Cubitt's directions. This design was exhibited and explained, and in the short discussion which ensued, the principle of construction, — suspension chains, combined with a girder, — was condemned as unsound by Mr. Edwin Clarke, the only gentleman who made any lengthened remark, and he unhesitatingly objected to it.

The only reason now assigned for recommending this mode of construction is economy.

The competitors appear chiefly to complain that the commissioners opened the sealed letters attached to other than the prize designs, when they had distinctly stated in their advertisement that they should confine themselves to the latter only.

They now also complain that 80,000*l.* was originally fixed as the sum to be expended, whereas the commissioners now state that they cannot afford to spend that sum, but must have a design for a structure which will cost less money.

The whole affair is indeed an instructive lesson on competitions generally. Five times as much money will probably have been spent, in ultimately obtaining a design, on a principle condemned by the highest

authorities, as would have been sufficient to have procured a perfectly satisfactory design, and the result will be, that the advantages of being employed as a work professionally wherever these may be, will fall to the lot of a gentleman who, though a competitor for the premiums offered by the commissioners, did not succeed in obtaining either of them.

ANOTHER C. E.

SIR,—I observe that you repeat the statement that the principle of my design was objected to by more than one member, at a late meeting of the Institution of Civil Engineers. Will you allow me to state, that the only member who ventured to question Sir W. Cubitt's opinion in favour of my plan, was Mr. Edwin Clarke, who repeated the theory advanced in his otherwise able work on the Britannia tube, a theory unsupported by a single practical fact, and which has, in my judgment, led to the waste of large sums of money. If any other member expressed an opinion, it must have been given in private. Your informant has, therefore, adopted the unprofessional proceeding of conveying to you for publication, the private opinion of a member given after the discussion, and to which I had no opportunity of reply. As the subject is one of great importance to railways, inasmuch as very large spans are impracticable with a girder, and large girder spans may be crossed by the suspension girder, without greater deflection, or strain on the metal, with one-third, or one-fourth of the weight of material hitherto employed, I propose to read a paper on this subject before the British Association, when I hope the member (if such member there be) who objected privately to my design, will in a matter of so much public interest, also lay before the Association his objections, to enable the subject to be fairly discussed.

June 24th.

PETER W. BARLOW.

#### TOTTENHAM-COURT ROAD ACCIDENT.

SIR,—I beg to inform you that the average number of houses building in St. Pancras, viz. 300, as stated in the leading article in the *Times*, was correct: the "500" in the report, which appeared in the same paper, was a mistake of the printers. You will find, by referring to the superintending architect's report, from which you quote, that the 162 new buildings applies only to fees received, and it appears that there are fees due to about an equal amount. My estimate of 300, based upon the census return of 1851, will therefore apply to 1856.

As the leading article in the *Times* stated my figures correctly, I did not think it worth while to write to the paper about the misprint in the report.

T. MARSH NELSON.

DEAR SIR,—In consequence of the discrepancy between the statement in Mr. Marsh Nelson's report and the actual fact, I have looked into the matter, and I find that the whole number of new houses now, more or less, coming under my supervision is about 100. Probably fifty or sixty are under survey at one time: these are in rows of four to twelve, and the majority of them clustered together within a quarter of a mile. Many are now standing still for want of funds; others are covered in, and require but occasional inspection; whilst in no case is it necessary to waste half an hour on "each house," unless, indeed, it be built by a Johnson. It is clear that one row of twelve four-roomed cottages can just as little stand in need of a six hours' inspection each visit as the row of seven excellent Cubitt mansions building in Gordonsquare can require three and a half hours.

I apprehend that the Returns in 1851, from which Mr. Nelson has taken his data, furnish no clue to the number of houses actually building, but refer to uninhabited houses—those which did not come into rating. It is manifest that the returning officers, who were called upon to report as to the population, would supply a list of empty houses; and it is the aggregate of these which Mr. Nelson incorrectly refers to, but which have no more bearing on the question than his other deduction, that the flourishing period of 1851 is to furnish statistics for the present times of depression.

As you have made editorial remarks, I shall abstain from offering further observation on this very disingenuous report,—its omissions being still more unfair than its wandering assertions and uncalled for dictation. Nor shall I enter the lists against another writer who throws about his ink-bottle in a most reckless manner, determined to make a sensation somehow. He may well dread, in his concluding paragraph, the influence of the Institute, for, assuredly, if he presented himself before that body for examination for a district surveyorship, with no better knowledge of the Act than he exhibits at present, it requires no conjurer to foretell the result. Independently of

merit, or, at all events, of decent qualification, the Institute will not admit as a member any person whose conduct is not founded on truth and ability.

With regard to my part in the unhappy case of Tottenham-court-road, sufficient is it for me to say that I took every possible step in my power to prevent the catastrophe, and to enforce the fulfilment of the Act. The coroner's jury sat six or seven days, inquiring most minutely into every circumstance, and, think you, a district surveyor, of all people, could have escaped censure, could they have seen a one error upon him. So conscious did I feel of having performed my duty, fully and actively, "impossible" as it seems to Mr. Nelson,—that, amongst all the dread array of barristers and attorneys, not one was there "instructed to appear" on my behalf; and when a brother surveyor, who had been summoned on the jury, generously proposed to give his valuable time to the inquiry, if I but expressed a wish to that effect, I perseveringly declined his kindness, though I shall not soon forget it. Thank Heaven! if calumny is allowed to "stunt and fret its hour upon the stage," the unfavourable impression, if any, is transient, whilst ample compensation is afforded by extended and valued friendships, and by the pleasant opportunity it gives one of receiving the good offices of those whose opinion is worth having.

HENRY BAKER, M.I.B.A.

June 23rd. District Surveyor of St. Pancras.

P.S.—Since writing the above, I have received a communication, inclosed, in reply to two letters dated respectively 10th and 18th inst. written by me to the Metropolitan Board, to court their inquiry into the matter. I much regret that they do not grant my request, but I confess I am not surprised at it, as it must be clear to any gentleman that the silence of the jury is entitled to greater consideration than the noise of an intemperate opponent.

P.P.S.—*Scott's Cement.*—I regret that some remarks of mine at the Institute, with regard to Captain Scott's Patent Cement being used at Tottenham-court-road, have tended unjustly to lower the merits of what I now believe to be an excellent article. I have since had the patentee's "instructions for use" placed in my hands, with scarcely one of which did the builder or his men comply. Sung the joiner bought it because it was cheap; and small blame to him for that, although "it was not in the bond;" but his helpmates, Owl Moore and Sparrow Harrison, thought proper to mix seven parts of sand to one of the cement (instead of three or four parts only), and then applied it to make good a rotten party-wall with old brick-bats used dry, again contravening the instructions. No wonder the cement crumbled; and hence the false impression given to the public in official reports that the "manufacturers" are to blame, when the mischief solely arises from the ignoble practices of a cutting builder. You omitted to give Mr. H. Williams's remarks in your report, that he was using Scott's cement in considerable quantity, and that, taking care to see it mixed fairly and applied properly, no material could possibly be better.

H. B.

#### THE HOUSES OF PARLIAMENT.

On the 22nd inst. on taking a vote of 102,861*l.* for works at the Houses of Parliament, the architect was, as usual, soundly abused by various members, without any opportunity of reply. Without going into the question whether or not Sir Charles Barry is culpable in the matter of expenditure, we may give an instance of the hap-hazard statements made on the occasion.

Mr. Drummond is reported to have asked how it happened that Sir Charles Barry had been paid 1,300*l.* for designing and drawing the plate, linen, glass, &c. which had been supplied to the refreshment rooms, and which had been specially designed by the architect, in accordance with the style of the palace. Mr. Wilson explained that the sum of 1,300*l.* was for the articles themselves, and not for the designs; but he probably forgot to add that though the tradesmen's accounts have been discharged, Sir Charles Barry's claim for commission upon them has been disallowed, and that he has consequently received no remuneration whatever for his services in this matter—rather a different story!

In reply to observations by Mr. Kirk and Mr. Henley that the stone used in the Houses was decaying, and that the iron of the roof was rusting.

Sir B. Hall was sorry to say that the right hon. gentleman was not mistaken in his view of the case; for he had made inquiries some months ago as to the state of the roof, and he found on examination that the galvanizing process had ceased to act, and that the rust was coming through, as was almost invariably the case where galvanized iron had been used for structures which were not of a temporary character. All that they could do now would be to cover it over with some chymical preparation, with the view of preventing further mischief; but he was

\* It is right to say that this is denied by Mr. May.

\* Mr. Barlow is surely in error. We have not done any such thing.—Ed.



sorry to say that the rust certainly was showing itself in different parts of the roof. His attention had also been drawn to some of the stone, which was decaying in certain places, and a good many chemical processes had been tried for the purpose of preserving it; but it would be years before the full success of the experiments could be tested.

As respects the stone it seems very desirable that a survey should be made by competent persons, to ascertain if the decay be general and progressing, or merely what might be expected in a building of such an immense extent as the Houses of Parliament, constructed of stone taken from one locality in the course of a few years, some of which was probably sent when the demand was great without much examination. The owner of the quarry from which the stone was sent for the Peers' entrance and apartments recently finished, and from which it is supplied for the works still in progress, is of course greatly interested in preventing a stigma improperly attaching itself to the stone, and has solicited us in justice to state, that the greatest care has been exercised in not forwarding stone from any beds considered doubtful.

#### PENNETHORNE TESTIMONIAL.

THE model having been presented to Mr. Pennethorne, and the account would appear a narrative of the proceedings has been printed and forwarded to the subscribers. The following statement of some of the events in Mr. Pennethorne's professional career may interest our readers:

*Mr. Pennethorne has been appointed, as architect to the Commissioners of the Woods, and also to the Commissioners of her Majesty's Works.*

1820. Mr. Pennethorne, who is a native of the city of Worcester, and came to London in February, 1820, was educated for his profession by Mr. Nash, and, as his clerk, he then began to be known at the Office of Woods.

1828. Mr. Pennethorne, having retired from abroad, became Mr. Nash's principal assistant, and in that capacity was employed and entrusted to a great extent with the Strand improvements, the building of Carlton-house-terrace, the laying out of St. James's Park, and other public works, which required constant communication on his part with the Board of Woods.

1832. Mr. Pennethorne was first employed by the Commissioners of Woods as an independent professional man, and has ever since (now twenty-four years) been more or less employed by them.

1839. Mr. Pennethorne this year submitted to a select committee of the House of Commons plans for the improvement of the Metropolis, which were approved and recommended by them for adoption; whereupon he was appointed, in conjunction with Mr. Chawner, then one of the joint architects of the Board of Woods, to prepare the necessary plans and estimates for carrying them out, Mr. Pennethorne being considered fully qualified by the experience he had obtained in such undertakings under Mr. Nash.

1839. In this year, the plans and estimates prepared by Mr. Pennethorne and Mr. Chawner were approved by a committee of the House of Commons, an Act was passed to carry them into execution, and by the same committee, in communication with Lord Duncannon, the then Chief Commissioner of Woods and Works, it was arranged that Mr. Pennethorne and Mr. Chawner should be remunerated according to the agreement made with Mr. Nash for the Regent-street and other improvements conducted by him.

1840. In June this year Mr. Pennethorne was appointed joint Surveyor of Houses in the Local Revenue Department, in the place of Mr. Rhodes, who retired, at a salary of 1000. per annum, and upon the other terms of remuneration settled in 1825; and upon this agreement Mr. Pennethorne has ever since continued to hold the appointment. From this year Mr. Pennethorne began to decline the private practice of his profession.

1843. In October of this year Mr. Chawner retired, and Mr. Pennethorne has ever since continued to perform alone all the duties of Architect of Works and Surveyor to the Woods and Forests, upon an understanding with the Commissioners that he should from that time entirely abandon his private practice.

1843. In December of this year, by Minute of the Treasury, Mr. Chawner was placed on the retired list of the Department, with a retired allowance of £500. per annum, to take effect from Christmas, 1843. By the same Minute, the Treasury desired that it may be understood, that Mr. Pennethorne was not to be at liberty thereafter to engage in private professional business of any description, and that the retired allowance to be awarded him, when incapacitated for the public service, will have reference to the length of time engaged in the exclusive employment of Government, and to the other circumstances of his service. The appointment of joint architects has been found to be productive of difficulties and dissension.

On the return of Mr. Pennethorne from the survey of the workhouses in Ireland, early in 1844, he was given to understand that he would be continued as sole architect, provided he conducted the very many and important increased duties which would from that time devolve upon the office; and upon this understanding, Mr. Pennethorne has performed the duties alone ever since October, 1843, now twelve years and a half.

*The Public Improvements upon which Mr. Pennethorne has been employed by the Board of Woods and Forests, and the duties performed by him as Surveyor of Houses in the Local Revenue Department, have been the following:—*

1. The four lines of Metropolitan improvements authorized by the Act 3 and 4 Vict. cap. 87, commenced in 1840, in conjunction with Mr. Chawner. The amount of property purchased for these lines was not less than 7,751,000. l. the total expenditure was not less than 1,000,000. l.; and properties were also let or sold of the value of not less than 200,000. l.

2. The Shortwell improvements, yet in hand.

3. The formation and laying out of Victoria-park. The properties purchased amounted to 87,288. l.; the total expenditure was 115,000. l.; and the park was laid out entirely from the designs and under the superintendence of Mr. Pennethorne alone.

4. The formation and laying out of Battersea-park. The properties purchased amounted to 228,800. l.; the total expenditure to the present time has been 281,000. l.; and the laying out of the park is now in a very advanced state, entirely from the designs and under the sole superintendence of Mr. Pennethorne.

5. All the plans and estimates preparatory to going to Parliament for the proposed Albert-park at Islington.

6. The formation of the street from Lower Sloane-street to Chelsea-bridge, and the valuation of properties required for the Chelsea embankment.

7. The Picnic improvement.

8. The laying out of the kitchen garden at Kensington for building purposes, letting all the lands and conducting the whole undertaking from the commencement to the end.

9. The improvements of the town of Windsor, as architect to the Commissioners for the Improvement of the Metropolis, made plans and valued properties, from 1844 to 1850, to an enormous extent. And also as arising out of these, made correct and detailed plans and schedules of the same, to go before Parliament, for the Victoria Park Approaches, the Southwark Improvement, the Covent Garden Improvement, the Carey-street Improvement, the Kennington Common Enclosure, and others.

10. In addition to the above, Mr. Pennethorne has been employed by the Commissioners for the Improvement of the Metropolis, to make plans and valued properties, from 1844 to 1850, to an enormous extent. And also as arising out of these, made correct and detailed plans and schedules of the same, to go before Parliament, for the Victoria Park Approaches, the Southwark Improvement, the Covent Garden Improvement, the Carey-street Improvement, the Kennington Common Enclosure, and others.

*The Public Buildings upon which Mr. Pennethorne has been employed since 1843, have been:—*

1. The rebuilding of the Stables at Claremont, at a cost of 5,850. l.

2. The Museum of Economic Geology in Piccadilly, at a cost of 20,572. l.

3. The Additions to the Ordnance Office in Pall-mall, at a cost of 20,165. l.

4. The General Record Repository in Fetter-lane, at a cost (including fittings) of 78,806. l.

5. The New Stationery Office at Westminster, at a cost of 26,793. l.

6. The New West Wing of Somerset House, at a cost of 81,263. l.

7. The Additions to the Liverpool Post Office, at a cost of 13,120. l.

8. The Offices for the Council of the Duchy of Cornwall, at a cost (including fittings) of 78,806. l.

9. The South Wing of Buckingham Palace, at a cost of 77,655. l.

In addition to the above, Mr. Pennethorne was directed in 1849, to make elaborate designs for an enlargement of the present National Gallery, by building over the whole site of the St. George's Barracks. Also in 1851, to make designs for a new Gallery to be built upon a site in Kensington-gardens. Also in 1854, to make several elaborate designs, to be laid before Parliament, for new Public Offices to be built in Downing-street; including a model of the building, and completely arranged finished drawings of both exterior and interior of the portion thereof intended for the Foreign Office. In 1855, he was directed by the present Chief Commissioner of Works, to make finished plans and elevations, to be laid before Parliament, of new Public Offices for Downing-street, upon a site extending south all the way to Great George-street. And in December, 1855, he was also employed to make designs and estimates for the new War Office then intended to be built in Pall-mall.

Among the private works, executed by Mr. Pennethorne between 1832 and 1840, may be enumerated:—

The Bazaar, St. James's-street, for William Crockett, esq.; Christ Church, Albany-street; Trinity Church, Gray's-inn-road; Lamorby House (enlarged) and Chapel for John Malcolm, esq.; Swinland Hall, Leicestershire, for Butler Danvers, esq.; Dillington House, Herefordshire, for John Lee Lee, esq.; St. Julian's—the Right Honourable J. C. Herries; House at Newmarket for William Crockett, esq.; the design submitted by Mr. P. for the Royal Exchange was one of the five selected.

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Imagine, for instance, one of the stirring scenes in the fourth act of "Richard II." as now represented at the Princess's, a scene in domestic life, or a three minutes' portrait of Mr. Spurgeon in the pulpit thus depicted,—what a gallery of illustrations we should have! what a faithful register of "deeds done in the flesh" would be here given!

Magical as the effect would be, the novelty would simply consist in applying to the discoveries above-named the principle of a shilling toy which was in constant use some twenty years ago. T. C. H.

#### WASTE HEAT USED UP AND SMOKE CONSUMED ON ECONOMICAL PRINCIPLES.

SOME years since we occasionally drew attention to the great waste of heat in many manufacturing processes, and suggested the possibility and advantage of using it up to some profitable purpose. This, it appears, is now being done by aid of inventions patented by Mr. Haas, of Epsom, who has in several instances applied his apparatus to manufactures on a considerable scale, as at Epsom itself, in connection with Clayton's patents for the manufacture of brick. And not only is the waste heat of the kilns used up in drying the articles preparatory to burning, thus facilitating the process of brick manufacture, so as to be available in winter and summer alike, but the furnace-smoke is at same time consumed, without any additional expense beyond that necessary to the saving of the waste heat. The heated smoke and vapours from the furnaces are conducted first through the drying chambers (which, it seems, can be more cheaply constructed in this way), and then back to the furnaces, between which, but not in them, the smoke is then consumed by the furnace heat, which at same time yields the suction power whereby the smoke was forcibly drawn through the drying flues, whether horizontal or in perpendicular descent, but all above ground. Moreover, the heated and consumed smoke, on its way up the chimney (a 30 or 40 feet chimney is said to be sufficient on this plan, in place of one far higher and more costly), with the heat radiating from the furnaces and heating the surrounding air, are made still further available by the conduction of that heated and dried air into the drying chamber to replace its interior atmosphere, loaded with the moisture evaporated from the drying goods, and which is withdrawn through openings in the drying flue, into which it is sucked by the power of the furnace vacuum; thus completely ventilating the drying chamber, and greatly promoting the drying process, while also consuming the smoke. These inventions, it appears, can be either partially or wholly applied to all sorts of furnaces already in action, whether for the consumption of their smoke or for drying processes, or for both purposes together. The economy and saving realizable by such inventions are precisely what we anticipated in suggesting the possibility of using up waste heat, especially that of kilns, which we instanced, at the time, as one of the most wasteful of heat amongst modern manufacturing processes; and we feel it a duty to call attention to any efforts having so useful an end in view as the twofold one of using up waste heat and consuming smoke at one and the same time, and by one and the same economical means.

#### OXFORD ARCHITECTURAL SOCIETY.

ON Wednesday, June 10, on the third meeting of the Oxford Architectural Society, a Paper was read by Mr. J. T. Jeffcock, of Oriel College, entitled "Gothic Architecture, a National Style." He explained his conception of the term "national style."

It was a style adapted to the physical nature of a country, to its climate, to the terrestrial and meteorological phenomena to which it was subject. It was one for which suitable materials to carry it out could be found on the spot, or be imported without too great expense. It was one which could be employed for buildings civil and religious, public and private, large and small. Lastly, it was of no use that it should be proved theoretically suited to a nation, if at the same time the nation did not practically endorse the proof by commonly adopting the style. He proceeded then to show how far Gothic in England came up to this description, and to weigh its claims with those advanced by Classic Architecture. He considered that the climate of England, as contrasted with that of Greece and Italy, demanded an essentially different style of architecture. "Our climate is essentially one which requires damp-excluding buildings; and in such, if light is to be admitted, but not the chill damp air, windows must ever form a most prominent characteristic. An English national style, therefore, must be one in which the windows form a grand feature. And which style, the Gothic or the Classic, is best calculated to employ in windows with beautiful effect? Greece and Rome scarcely had windows at all in our sense of the word; hence they made no



provision for them in their architecture; and, *pace* Sir Christopher Wren be it spoken, none of the Classic architects, in my opinion, have ever introduced windows in their buildings with grace and elegance. Their windows look, as indeed they are, interlopers." In point of materials to be employed, he instanced All Saints' Church, Margaret-street, as making use of brick, tile, marble, and stone, all in one edifice, a proof of the universality of materials allowed in Gothic architecture. He thought that large towns like Liverpool or Bradford might build their public halls of stone, but the poor parish in which clay only is found ought not to be required to expend its funds on the carriage of stone, but should be enabled, so far as architectural style is concerned, to build its church from bricks furnished by the soil itself.

Mr. Freeman (according to the *Oxford Herald*), while expressing his approval of Mr. Jeffcock's remarks, called attention to the difficulties which modern architects had to contend with, in adapting Gothic windows to modern requirements. He alluded at some length to the designs which were now being exhibited in London for the Government offices, and while asserting the superiority of the Gothic designs over the Palladian, he could not but regret that all of them a sort of wild attempt at combining incongruous forms in one design seemed to mar their general effect, destroying that purity which is so remarkable a feature in English Gothic, and especially so at the period when the Perpendicular style was introduced by that great architect—William of Wykeham—into this country.

Mr. J. H. Parker, referring to that part of Mr. Freeman's remarks which related to windows, begged to observe that Gothic windows, by being *played*, in reality gave as much light as Palladian windows with much larger apertures. He also suggested that the difficulty of the mullions intervening was easily surmounted, by having the framework and sashes placed within, and entirely independent of, the mullions, which plan, while no desight, afforded all the convenience required.

These remarks were corroborated by Mr. Bennet, of University College, who cited the new buildings of the Union Society as a case in point. He also, while speaking on the subject of windows, suggested a plan of constructing the building so that the sashes might be made to slide into apertures in the thickness of the wall.

The annual Excursion of the society took place on the 15th.

#### HINTS TO WORKMEN.

##### CAUTIONS TO PAINTERS, GLAZIERS, AND PLUMBERS.

1. To maintain the strictest temperance, particularly regarding spirits, which had better altogether be avoided.

2. To pay the strictest attention to cleanliness, and never suffer paint to stick about their hands; and particularly never to eat their meals, or go to rest, without washing their hands and face, with soap, perfectly clean.

3. A charcoal respirator should be worn when at work. The cost is but very trifling. This would prevent the dry colours reaching their lungs.\*

4. Not to eat or drink in the place in which they work; and much less to suffer any food or drink to remain, unused, even for the shortest space of time, in any part of the room, while painting, or where colour stands; and not to work on an empty stomach.

5. As the clothes of persons in this line (painters particularly) are generally much soiled with colour, it is recommended for them to perform their work in frocks of ticking (*how seldom adopted*) which may be frequently washed, and conveniently laid aside, when the workmen go to their meals, and again put on when they return.

6. Painters, in performing clean light work, where it would be inconvenient to wear gloves, should scrape the handles of their brushes often.

7. All artificers should avoid touching lead when hot; and this caution is especially necessary for printers or compositors, who have often lost the use of their limbs by handling the types, when drying by the fire, after being washed.

8. If any person in the above employment experiences pain in the bowels, with costiveness, he should immediately take twenty drops of laudanum, and when the pain is abated, two tablespoonfuls of castor-oil, or an ounce of compound tincture of rhubarb in warm camomile tea. If this does not succeed, a pint, or two pints, of warm soap-suds should be thrown up as a clyster.

9. As a preventive, two or three spoonfuls of salad-oil, taken in a small cup of gruel, is likely to be of service, if taken daily, and steadily pursued.

Gilders should always put on gloves, and wear

\* Fresh-burnt charcoal, powdered and stitched up in a piece of silk, and worn with a piece of elastic to fasten it over the mouth, will answer the purpose.

either the charcoal respirator or masks furnished with glass eye-holes. They can have no objection to follow the first, and a little reflection will serve to convince them of the propriety of overcoming every prejudice against the last of these precautions. J. B. N.

#### Books Received.

##### VARIORUM.

THE second part of "The Illustrated Historical and Picturesque Guide to Poole and Bournemouth, and the surrounding Country," by Mr. Philip Brannon, architect (Longman and Co. publishers), gives an account of Poole particularly, and of Bournemouth and other islands, as well as of the adjacent county, in this picturesque and interesting district. The capabilities of the Poole district, to which we have more than once pointed attention, are treated of at some length; and we are glad to observe, from an allusion to an anticipation in our columns, that these capabilities are being not only recognised, but to some extent developed by a rapidly-extending demand for the Poole clays for pottery purposes, as well as in the working of the Iron ore of Christchurch. Even the Bournemouth operations, it is expected, will soon be in a more satisfactory position. Bournemouth Castle, the scene of Col. Waugh's speculations, is amongst the engravings by which this little volume is illustrated, and there are various others, such as the Patent Architectural Pottery Works, at Hamworthy, some churches and schools, &c. together with a competent account of all that is, professionally speaking, worthy of note about Poole and its vicinity.—"What to See and Where to See it; or, the Operative's Guide to the Art-Treasures Exhibition," is a brief and condensed tract, by the energetic Mr. E. T. Bellhouse, calling the attention of operative visitors to the principal works of art in the Manchester Exhibition,—a much more effectual way of helping such a visitor to make an intelligent use of the little time he may have to spare than giving him bulky and distracting catalogues or guides, more suitable to other classes of visitors, with more time on their hands, as well as a little more general acquaintance with what ought to attract their attention.—"Hints to Practical Agriculturists. By F. B. FOWLER," of the Royal College of Chemistry and Museum of Practical Geology, is just the sort of brief address which ought to find its way into the rough hands of the hard-working farmer as a friendly guide and index pointing the way to improvement.—"In Notes on Drainage, with especial reference to the Sewers and Swamps of the Upper Thames" (J. H. and J. Parker, London and Oxford), Dr. Henry W. Acland, F.R.S. gives mainly an extract from a larger work of his, now reprinted for the sake of increased circulation in a cheaper form. The subject is chiefly of local interest, but the extract contains some matter of general interest in respect to the value of sewage as manure, including a letter from Professor Voelker, of the Royal Agricultural College, at Cirencester, pointing out the difficulties in the economical application of sewage matter, and moderating the too sanguine anticipations entertained by some as to the profitable disposal of town manure.—A useful little pocket companion for tourists has been published by Lambert and Co. King William-street, Strand, titled the "Vade Mecum for Tourists in France and Belgium." It contains a phrase-book and vocabulary useful on an emergency, with maps of routes and information as to money, passports, hotels, &c. The phrase-book, however, though fertile in the conversion of English questions into French, is rather barren in respect to the conversion of French responses into English.

#### Miscellaneous.

FLUES.—With due deference to your correspondent, Mr. Wyatt Papworth, page 325 *ante*, allow me to propose the introduction of a damper, just under the lower part of the flues in the chimneys represented. Sparks will fall, and ignite the soot contained in the bottom receptacle, and, if it should fire in the night, cause alarm, though no damage might ensue; and if closed every night, or even in the day-time if the soot should ignite, would immediately smother and extinguish it, and prevent any alarm or damage either in the day or night.—T. G.

NEW WEST-END HOTEL.—Sir,—As I perceive the West-end Railway and London Hotel Company are about to erect an enormous hotel in Victoria-street, Westminster, on the principle of the Hotel Louvre, at Paris, I beg to suggest that great care should be taken about the architecture, and not to have anything in the sham plaster style of building as now used in that street, nor to have a building in the meaningless style of the Louvre. Let us have done with shams, plaster, and other abominations.

CH. DE V.

THE LATE MR. CROSSE ON DIVINE INTELLIGENCE.—We have received the following, with sufficient verification, from a known correspondent (who seems to fear that a wrong deduction may be made from our late notice of Mr. Crosse), as portion of a private letter from the late Mr. Crosse to him. The writer adds,—“Mr. C. a gentleman of considerable property, who, I believe had a son in the Church, seems rather to have assimilated his resuscitations to a child entering a cabinet, and working an accidental feat, or a naturalist sowing a seed, which, with its reproductive qualities, he could not have contrived. Whilst the amazing coincidence of remote nations and ages, with moral and historical evidence, might be ample; and whilst the great intellects of Bacon, Newton, and Locke—to whom might be added,—as known believers in the present day—a Faraday and Brougham—have maintained respectful adoration—it is satisfactory to add to them that of the greatest experimentalist ever known—Mr. Crosse.” “I think it would be most ungrateful, as well as presumptuous, in us, when the Almighty has permitted us to see a very small portion of his Great Works, to arrogate to ourselves his Power and Attributes.”

ARCHITECTURAL SOCIETY OF NORTHAMPTON.—At a committee meeting held on Monday, June 8th, the secretary stated that the church of Oakham, one of the finest in the archæological, and which has long been in a state of decay, was about to be restored under the superintendence of Mr. Scott. The munificent sum of 800*l.* was offered, through the secretary of the society, to the vicar, on condition of the work being at once commenced, and of the plans being approved by the committee of the Architectural Society. The offer has been accepted, and a report has been made estimating its restoration, in oak, at 4,640*l.* Plans for the reseating of Market Harborough Church, by Mr. E. F. Law, were exhibited. Plans for the chancel roof of Theddington were exhibited and approved. The Rev. G. Malin, vicar of Higham Ferrers, and T. J. Starling, esq. churchwarden, attended with Mr. Slater, architect, to explain the plans for the restoration of Higham Ferrers Church. They include the re-building of the north aisle of the nave, the re-roofing and re-seating of the entire church, and general restoration of decayed parts; but it is proposed to adhere to existing forms, and to preserve intact the rich stalls and ancient pavement of the chancel. The architect's estimate is 5,000*l.*

INSTITUTION OF MECHANICAL ENGINEERS.—This body was to hold a series of meetings in Manchester this week. On Wednesday a number of papers were to be read at the new Mechanics' Institution, David-street, including the following:—"On a standard decimal measure of length for mechanical engineering work," &c. by the president, Mr. Joseph Whitworth; "On the comparative economy of coal and coke in locomotive engines," by Mr. Benjamin Fothergill, C.E. of Manchester; "Description of a plan for the prevention of smoke in steam-boiler and other furnaces," by Mr. W. B. Johnson, of Manchester; "Description of a vertical steam-boiler," by Mr. Thomas Dunn, of Manchester, &c. On Thursday, more papers were to be read, including a "Description of the large tubular wrought-iron crane, recently erected at Keyham Dockyard, Devonport," by Mr. Wm. Fairbairn; "On the saving of dead-weight in passenger trains," by Mr. Chas. Fay, of Manchester; "On an improved safety valve for steam-boilers," by Mr. Chas. Beyer, of Manchester; "On recent improvements in water-meters," by Mr. Benjamin Fothergill, of Manchester; "Description of a new apparatus for the application of water power," by Mr. David Joy, of Leeds; "Description of a safety escape pipe for steam-boilers," by Mr. John Ramsbottom, of Manchester; and "Description of an apparatus for economising fuel," by Mr. W. C. Craig, of Manchester.

IMPROVEMENT IN PAPER-HANGINGS.—By a recently invented process, paper-hangings are printed in oil instead of water colours.

TRADE STRIKES.—The cabinetmakers and stone-masons of Liverpool have been four weeks on strike for an advance of wages. The stonework at several large piles of extensive offices in the neighbourhood of the Exchange has come to a standstill.—The masons employed at the viaduct and the various bridges in course of erection on the Dumfries contract of the Castle Douglas and Dumfries Railway, have struck work for an advance of wages. Their present wages are 22*½* 6*d.* per week, and they demand an increase of 3*½* 6*d.* making the weekly wage 26*½* 6*d.* The men employed by our local masons and builders, says the *Dumfries Courier*, also demand an increase of wages; the masters have agreed to give 2*½* 6*d.* when employed in town, or 2*½* 6*d.* when engaged in the country. These terms having been agreed to on Saturday, no interruption of work took place among the local builders.



**CARVED WOODEN LETTERS.**—We have some specimens of small projecting letters carved in chestnut, and intended for ecclesiastical inscriptions, altar-pieces, inscriptions for statues, pictures, or ceilings. The producer, Mr. William Nash, says,—"These letters can be carved in any style or hand (plain or ornamental), and that he has been some time projecting the art, and believes that it has not before been successfully attempted to cut separate letters in wood on so small a scale." The letters sent to us are exceedingly well formed, and if they can be produced cheaply ought to come into extensive use.

**ST. LUKE'S, NEW-ROAD.**—The foundations of the new church, dedicated to St. Luke, in the New-road, St. Pancras, were laid some months since, and nothing more seems to have been done towards its erection. All over the town there are iron churches, and services in rooms, and other make shifts to provide accommodation for religious instruction. According to a late report, only 220 churches have been built in the diocese of London in thirty years, and the funds for many of them have been raised with considerable difficulty. In no period of our history have larger fortunes been accumulated than in this century. Those who have wealth and influence should give liberally, that the reproach of having too few places of worship may no longer exist.—H.

**BURLINGTON HOUSE AND ST. JAMES'S PARK.**—On the vote of 608-564, for repairs, &c. of public buildings, and 757-511, for maintenance, &c. of public parks, being proposed in the House of Commons on the 19th instant, some rather fractious discussion ensued, in course of which it was stated, by Mr. Wilson, as regards Burlington House, that the societies now there in possession had only temporary accommodation: Some members objected to wealthy societies being provided with offices at the public expense, but Mr. Tite denied that they were wealthy. In naming the Society of Antiquaries as one of those so located, Mr. Tite, however, was mistaken. The others to whom he alluded were the Royal Society, the Linnean, and the Geological. The chief objection was to the fact of money spent, as Mr. Tite called it, being now asked for as an estimate. The subject on which some members still harped in respect of St. James's Park, was the cost of the very decided sanitary and ornamental improvement of the water, respecting which Sir Benjamin Hall had anew to run the gauntlet. In both cases, however, the discussion was no more than a mere grumble, the money being voted in the face of amendments for its reduction.

**THE GOVERNMENT SCHOOL OF SCIENCE AT DUBLIN.**—The Lord Lieutenant, on the 18th inst. distributed the prizes awarded to the successful candidates at the late examinations, held in the Government Schools of Science applied to Mining and the Arts, established in connection with the Museum of Industry, in Stephen's-green. Sir Robert Kane addressed the assembly on the general character and objects of the institution, and briefly detailed its proceedings for the past year. The several professors gave in reports, and the Lord Lieutenant and Sir R. Kane addressed the meeting.

**THE FLYMOUTE AND STONEHOUSE GAS-LIGHT AND COKE COMPANY.**—The price of gas originally charged by this company was 6s.; it has of late been reduced to 4s. 6d.; and in consequence, the income of the company has been nearly doubled, having increased from 11,000l. to 20,000l. Hence it is that another expense is to be taken off the price, which, for the future, will be 4s. per 1,000 cubic feet.

**NEW CHURCH IN MARYLEBONE.**—The new church in Orchard-street, Portman-square, for the new district of Christ Church, Marylebone, is to be erected upon a site granted by Lord Portman, at Camel-buildings, on the east side of Orchard-street, formerly one of the most degraded parts of the metropolis. The estimated cost, with site, is 11,000l.; of which there has already been contributed upwards of 8,000l. The foundation-stone was to be laid on 23rd inst.

**NEW RAILWAY STATION AT LEWES.**—The new building which is being erected at the foot of St. Mary's-lane, comprises a viaduct and passenger station, the length of viaduct being nearly 300 feet. There are altogether twelve arches, eight of which are 12 feet each; two, 15 feet each; and the remaining two, 18 feet each; making a total of 162 feet: to which must be added the width of the different buttresses; the opening for the Keymer branch, 32 feet 9 inches, with two additional openings (one upon each side of the line) of 24 feet each. The arches will be brick, with stone capping, and the girders over the Keymer branch and its sides of cast-iron. The goods traffic will be carried on, as hitherto, at the old station, the new one being intended for passenger traffic only. Mr. Hood, the resident engineer of the company, is the architect of the works; Mr. Davey, of Lewes, builder of the station; Mr. Fabian, of Brighton, builder of the viaduct; and Mr. Oliver, the inspector of the line, is also inspector of the works.

**RUINOUS BUILDINGS.**—Nothing can be more untrue than the insinuation that any antagonistic feeling exists between the district and police surveyors. The reverse is the case. The police surveyors have relieved the former of a difficult duty, and one they were unable successfully to grapple with under the Act of 1844. The transference of this duty to a body "alone able to act on emergencies," was, I believe, hailed with general satisfaction by the surveyors under the Building Act, although pecuniary lovers in respect of fees. It is generally conceded that Sir R. Mayne and his colleague are fearfully overworked, and that two or three assistant commissioners and surveyors must be appointed, as the talk is of the Board of Health being also brought under the Police, in fact, the "ruinous building department" must be put on an altogether altered footing. Surveyors of experience and knowledge, and an adequate working staff, must be provided by Government. Will you state that in all cases of ruinous buildings, or parts of buildings, in imminent danger, the better course is for the public at once to send to the Commissioners of Police, at 4, Whitehall-place. It is by no means necessary that the information should be given by the surveyor exclusively. Here is a case of a wall in imminent danger from a fire: the surveyor may be absent in his district, or elsewhere, on business, and a delay might possibly occur: all that the surveyor can in any event do, and is required to do, is to transmit any information he may receive. This can be done by any one without incurring a moment's delay.—A SURVEYOR.

**THE CHURCH AT MINSTER (THANE).**—The ancient church of Minster, by some believed to be the oldest in England, and containing many Saxon remains, &c. is going to wreck, and much need restoration. Beams and rafters are reported, by the *South-Eastern Gazette*, as fast decaying; unsightly pews, or rather boxes of various heights and sizes, "grace" the interior; several coats of whitewash "adorn" many of its fine pillars and hide their beauty, and a considerable sum would be required to put the ancient fabric in proper order. The living is said to be over 800l. per annum, and it is proposed that the archbishop should limit the vicar's salary to 500l. per year on the next presentation, leaving 300l. a year to prop up the venerable "Minster" Church. The ancient abbey, once associated with this edifice, is also still not only in existence, but inhabited as a mansion.

**ANTIQUARIAN DISCOVERY AT THE RYE HOUSE.**—An interesting exploration has been made by Mr. Teale, under the ancient gateway of the Rye House Castle. A tradition has been handed down, that a subterranean passage extended from the Rye House Castle to Nether Hall, in Essex. Mr. Teale a few weeks since commenced excavating under the brick-staircase of the tower. After clearing out several cartloads of earth, a passage was discovered, descending round the central foundation of the staircase. At a considerable depth there was found a huge stone. A passage was next found, leading off westerly from the tower, and after proceeding some yards, a cell was discovered, with massive iron door and grating: inside this cell is a seat of brickwork running the length of the interior, 8 or 10 feet. A faint ray of light glimmers in from above. A passage branching off north, under an arched doorway, near the cell grating, has been blocked up for the present; another leading south was cleared out and explored, and an entrance has been made from it into the garden south of the tower. Some curious implements were found, a very remarkable spear, but no human remains. The roof of the passage, near the cell, has large stalactites of a dingy grey cast hanging from the top.

**SALT AND DAMP IN WALLS.**—A correspondent asks for a remedy against salt in a stuccoed and plastered brick wall, the salt continually exuding though the wall was built seventeen years ago, of brick made near the Humber. This is a subject which has been frequently treated of in our columns, the result, if we must use that term, is an opinion that it was very difficult to prevent such exudation. Had we time to refer, however, we think it would appear that a remedy was found and recorded in our columns; but there are different kinds of efflorescence requiring different treatment. Would not Ransome's patent preservative of stone walls be of some use in such a case as that of salt exuding from a stuccoed wall? This preservative consists in washing the face of the wall with a solved silicate of potash or soda, and afterwards going over it with a solution of some such salt as chloride of calcium (or muriate of lime), which converts the soluble silicate into an insoluble silicate of lime, which may perhaps be able to prevent the exudation of salts from a wall. Another correspondent is desirous of knowing how to make a wall of random stone weatherproof, or capable of turning water; and hints that a "salt or solution of silicate" was some years since suggested in our columns as a remedy. Doubtless it was just such an application as that now suggested as a remedy against the exudation of salt, to which our correspondent refers.

**OPENING OF THE NEW PHILOLOGICAL SCHOOL, NEW-ROAD.**—The new school-house of this institution, in the New-road, was opened on the 15th instant by the Archbishop of Canterbury. The style of architecture is a modification of the Gothic. Separate school-rooms are provided for each of the four classes, each room being fitted for the accommodation of about fifty boys. There are a lecture-theatre and two play-grounds—one open, and the other protected from the weather. Although a considerable sum has been subscribed towards defraying the expenses of the new building, the institution is still nearly 1,000l. in debt on that account.

## TENDERS

For additions and alterations to the Middlesex County Lunatic Asylum, Hanwell. Mr. James Harris, architect. Quantities supplied by Mr. D. J. Brown:—

Dennis	£13,900 0 0
Sherrin	83,700 0 0
J. and E. Bird	69,580 0 0
Callis and Co.	59,850 0 0
Smith	58,712 0 0
Goodall	58,600 0 0
Nicholson	56,750 0 0
Peters	56,000 0 0
Piper	53,754 0 0
M'Lennan and Bird	53,270 0 0
Moxon	52,100 0 0
Rowe	50,720 0 0
Lee and Lavers	49,828 0 0
Perry	49,445 0 0
Wilson, John	49,374 0 0
Myers	48,870 0 0
Hill	48,609 0 0

For additions and alterations to Messrs. Welch and Son's manufactory, at Luton, Beds. Messrs. Tiltott and Chamberlain, architects. The quantities supplied:—

Greig	£3,977 0 0
Myers	3,790 0 0
Pritchard and Son	3,650 0 0
Jay	3,475 0 0
Lawrence and Son	3,400 0 0
Rider	3,370 0 0
Smith, Luton	3,345 0 0
Brant and Son (accepted)	3,299 0 0

For Cavalry College, Richmond. Mr. Charles Broadbridge, architect. Quantities furnished:—

Lucas	£3,300 0 0
Myers	3,200 0 0
Lawrence	2,849 0 0
Fish	2,794 0 0
Lee and Lavers	2,769 0 0
Hirst	2,720 0 0
Carless	2,693 0 0

For house for Mr. Bodkin, at Highgate, Mr. Charles Poland, architect. Quantities supplied by Mr. Pain:—

Higgs	£2,228 0 0
Macey	2,159 0 0
Mathews	2,068 0 0
Wheeler	2,013 0 0
Roland	1,823 0 0
Harris	1,820 0 0

For rebuilding the Queen's Head Tavern, 19, Great Tower-street, City. Mr. James Havel, architect:—

Lucas	£1,825 0 0
Lawrence	1,742 0 0
Piper and Son	1,667 0 0

For Lichfield Museum, Messrs. Bidlake and Lovatt, architects:—

Beckett	£1,545 15 0
Scott and Collyer	1,423 14 6
Lilley (accepted)	1,305 0 0

For a new brush manufactory, Great Marlborough-street, for Messrs. Kent, Mr. Dwyer, architect. Quantities supplied by Mr. Strudwick:—

Lee and Lavers	£1,381 0 0
Bird, Hammesmuth	1,295 0 0
Myers	1,247 0 0
Higgs	1,235 0 0
Lucas	1,193 0 0
Macey	1,190 0 0
Fortheringham	1,189 0 0
W. Higgs	1,187 0 0
Barlow	1,181 0 0
Wardie	1,145 0 0

For Schools, Stonebridge, Dalton. Mr. Knightley, architect:—

Hall	£1,280 0 0
Honeywill	1,240 0 0
Harvey	1,224 0 0
Hodges	1,164 0 0
Wood and Sons	1,047 0 0

## TO CORRESPONDENTS.

R.—C. G.—C. M.—W. T.—Mr. P.—J. R.—H. R.—P. B.—T. K. L. (Several means for the removal of salt in dwelling-rooms have been used in our pages, but we are unable to refer to any one of them, as the remedy has already been used and it is not necessary to repeat it. The remedy should be remembered another time.—R. L. R. J. W. N. G. B.—Victor—F. L. J. E. K.—Question on top.)

## ADVERTISEMENTS.


**BRICKS, SUFFOLK WHITE FACINGS.** WANTED, an AGENT, with a connection among Builders, and a staff for loading best Suffolk White and Red Bricks, in the vicinity of Westminster. Apply to A. R. Post-Office, Sudbury, Suffolk.

**DRAFTSMAN WANTED, for a PERMANENT SITUATION.** The qualifications required are, that the candidate should be able to draw to his own hand, and to be able to act on working drawings for buildings from sketches, and to be able to print and work for mechanical drawings. Applications by letter, stating terms and full particulars, to be sent to G. E. No. 3, Victoria street, Westminster.



# The Builder.

VOL. XV.—No. 752.



H A T with pulling down, burning down, and tumbling down, the domestic vestiges of Old London are, with surprising rapidity, disappearing from the view of even the present generation. Roman London rose upon the ashes of the British city: the Danes destroyed and Saxons built, and out of the wreck of Saxon and Roman cities in the Norman times, London still grew in extent and prosperity. Fires and plagues were but the means of effecting improvement. Gain came from loss, as it often does.

In Elizabeth's days, the growth of London alarmed both the Queen and the Government, and in the present reign its increase is like the rolling snow-ball. The row of houses in front of Staples Inn, the old houses near the bottom of Gray's-inn-lane, and other remnants of an earlier metropolis will gradually yield to the course of improvement. We have preserved some of these as curiosities for succeeding generations; and on the next leaf we add another characteristic example of London street architecture before the Fire, which is, we are told, to be shortly removed. The houses there shown form the west side of the well-known and once notorious Field-lane, which for some distance skirted the Fleet. The east side of the lane, with all the adjoining neighbourhood, has been swept away by the Victoria-street improvements.

We described a night peep into some of these houses in earlier papers. Field-lane, before the alteration, was a dark, narrow, but picturesque alley, made as gay in colour as a Turkish bazaar, by strings of pocket-handkerchiefs and other matters. It was difficult to effect a passage through this strait, and resist the blandishments of the fair dealers, who, with many words, and sometimes actual force, persuaded the "gentlemen to buy half-a-dozen real Indian pocket-handkerchiefs, better as new." Many a purchase has been made here by those who must have felt at the time that they were in a way dealers in stolen goods: however, it frequently happened that the pangs of their conscience were removed before they got out of the lane, sharp fingers relieving them not only of their purchases, but perhaps of other valuables, before they had completed the exploration of this region.

In the dark days of Field-lane, persons who went for the purpose of inquiry were looked upon with anything but friendly feelings; and some years since our artist, in the pursuit of his vocation, was saluted by small boys, instigated by those of more mature years, with turnip-tops and other missiles, and made his progress through the place something in the manner of John Bunyan's pilgrim through "vanity fair." A surprising change was effected when the daylight was thrown into the lane: the adventurous artist may now pursue his labours without interruption; and although the little bit of Field-lane which is left is not so gay in appearance, it is certainly much better in both a moral and sanitary point of view.

Changes of the most complete character are going on throughout the metropolis. A volume of much interest, for example, might be written on the inns and hostels of Old London,—those quaint places of resort, which, from the most remote times, have formed a feature of this

great city, for in few departments of trade have the changes been more marked than in the appearance and management of the victualling houses of London.

Some examples, which are left in the metropolis of old inn architecture, still bring to recollection the burly plain-spoken hosts figured in the plays of Shakspeare, and other of the old dramatists.

In Bishopsgate-street portions of two or three of the galleried inns still remain; the most perfect is the Five Swans, the court-yard of which has much the same appearance as it presented when the players were wont to erect their stage, and give performances in the centre of it. The cluster of ancient inns in the neighbourhood of Snow-hill, the back streets leading to Cheapside, Warwick-lane,\* St. Martin's-le-Grand, and other famed places for the reception of travellers, have now but few marks of their original appearance. In Holborn, the quadrangles of some of the large hostels which were formerly places of great resort to pack-horse travellers and carriers, may, with difficulty, be traced. In Gray's-inn-lane all signs of ornamented court-yards have vanished; but behind the now modern front of the "Pinder of Wakefield," are large barn-like buildings, which have, no doubt, afforded accommodation for horses. In Smithfield few of the characteristic features of the old inns remain.

In the suburbs, in various directions, are places formerly much frequented, but which are now, in some instances, neglected, and "mine host" of these days is obliged to resort to the attractions of cheap concerts and other amusements, in order to make up for the change in the current of business. There is a curious old inn nearly opposite to the south entrance of the Knightsbridge barracks, which is worthy of a passing glance.

In the High-street of the Borough, where a long line of well-frequented hostels formerly stood, there is little except the yard of the Tabard to attract much notice. Besides the great inns to which we have referred, and which were chiefly supported by travellers, there were smaller, and perhaps more comfortable places of public accommodation, some of them over against churches, having the signs of the Cross Keys, the Cock, the Mitre, which attracted the permanent residents to meet together, to enjoy that amount of gossip and information which would be sought for before the days of newspapers and useful books.

Inns, both great and small, were swept away over a large space by the fire of 1666, and at present even fewer vestiges of the lesser hostels remain than of those of greater importance.

It is worthy of remark, that in the days of Queen Elizabeth little mention is made of the sale of either ale or ardent spirits in the hostels of England. In the monastic institutions ale was brewed for the use of the inmates and for the refreshment of the poorer sort of travellers; but various wines, "sack" and others, seem to have been in use; and the ale in those old days was no doubt chiefly manufactured by the managing dames at home for the various households, in the same way as at the present day in out-of-the-way places.

The "Blue Boar" of Eastcheap (Dame Quickly's inn) had all those ancient features which would have been in character with Prince Hal, Fat John, and those other boon companions whom Shakspeare has so wonderfully placed before us. The stonesign of the house, boldly carved, is still fortunately to be found in the Guildhall Library. The house built on the site of the old "Blue Boar" was destroyed in making the approaches to new London-bridge. It stood

\* The inn-yard at the back of the south side of Warwick-square has been illustrated in the *Builder*.

about 40 or 50 yards to the south-east of the statue of William IV.

At the commencement of the present century, many of the London hostels were regularly frequented in the evenings by the respectable tradesmen of the various districts, for the purpose, in most instances, of enjoying a moderate potation, and discussing the affairs of the parish or nation. In many cases, the regular frequenters of the tavern parlours read in turn the principal parts of the daily paper. The writer of this knew of a company of old gentlemen who had assembled in this manner for many years: at one time they generally mustered between twenty and thirty strong. One by one they dropped off, until there were but two, who came so crippled that they could scarcely walk, and so dim-sighted that the newspaper was but of little use to them.

The "clubbable" spirit to which we have alluded was at the time somewhat a matter of necessity, for the homes of even the more opulent tradesmen were not so well supplied then as now with means of intellectual recreation: literature of all kinds was scarce and expensive, and music in the families of the middle classes but little practised.

A century or so ago a large number of the publicans of the metropolis manufactured their own ale and porter; and in course of time some, having more skill and enterprise than others, enlarged their premises to enable them to supply other houses, and so the growth of the breweries year by year increased with that of the metropolis, until now private brewing has almost gone out of custom. A member of the great firm of Truman, Hanbury, and Co. stated a short time since, that so many years had not passed over since the principal of the then infant establishment used to drag his brewing on a truck to his customers.

It is curious to contrast this with the present extent of the Brick-lane and other breweries. Huge piles of buildings have risen up, monster vats of such capacity that the bursting of one in the Borough swept away dwellings, and caused loss of life; several hundreds of horses are required for the conveyance of the beer; in some instances artesian wells have been sunk at enormous cost; and steam machinery, which to a stranger seems magical in its operations, moves and crushes the malt, carries or pushes it to its appointed place, and performs work which by other means could scarcely be done.

In Dr. Johnson's days, when his friend Mr. Thrale, the brewer, died, the famous doctor might be seen with ink-bottle in his waistcoat-pocket and pen behind his ear, and with solemn business-like countenance, moving among the casks, and wondering at the extent and value of the interests which he was in the course of examining: surprising increase has taken place since then.

The change which has been made in the appearance of the hostels,—we mean those provided for the use of the resident inhabitants,—is as great as that in the breweries. In old engravings, we find "Hornsey-wood House Tavern," and many other well-known suburban places of resort, very homely indeed in appearance. The "White-conduit House," which is shown in one of the cuts, was a small unpicturesque-looking house, two stories high, with four windows in front, near the ancient conduit. In the old print from which the engraving is copied, only one house appears in the background. Even at the time when this view was made, the necessity of enlargement is shown by the addition of the pent which is built against one side.

Formerly the suburban taverns were not so much resorted to for strong drinks as at the present time. The White Conduit-house, was long famous for hot breakfast rolls and tea; and early in the summer mornings, numerous Lon-





Old London: Part of Field-lane.

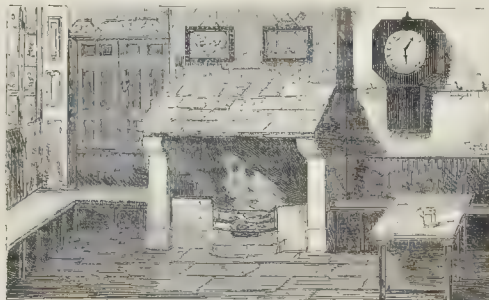
## OLD LONDON INNS.



"White-Conduit House."



A London Tavern of the Last Century.



A: Interior.

donors might be seen there enjoying the fresh breeze and early breakfast. Oliver Goldsmith frequently dined at the Highbury-barn Tavern, and called at the White Conduit to take a cup of tea on the way home.

The third engraving may be regarded as a fair specimen of one of the ordinary London public-houses of about a century ago. The massive window frames painted green, the red curtains, yellow letters, and the chequers on the door-posts give them a quaint appearance, which contrasts curiously with the ornament and glitter of the modern buildings erected for a similar purpose. Before the alteration, a few years ago, that very ancient hostelry, the Cock, in Tothill-street, Westminster, a place mentioned by John Stowe, and which is said to be the house from which the first stage-coach started, had a front very like that shown in the engraving.\* Both of these had a flight of steps leading down from the street, the pavement having been raised from time to time. It is worth while to make a survey of the interiors of one or two of these specimens of old London street architecture. The fittings are of the most plain and primitive description: an array of punch-bowls is shown upon the shelves, and two or three "black jacks,"—the leathern vessel of early days,—and some other relics, are carefully preserved in the sitting-room for customers: there is a spacious fire-place, with a large hood, supported by brackets. In one part is a clock, with black frame, and a very large dial; and round the panelled walls are a few dingy prints of celebrated cock-fights, prize-fighters, and such like subjects. The tenants occupying the unaltered houses are, in some instances, so old-fashioned, and so conservative, that it seems wonderful they have been prevailed upon to allow the introduction of gas-light. They have, usually, in former days, when their premises were more in accordance with the general taste, accumulated money; and they remain, year after year, complaining of the degeneracy of the times, and looking with as much contempt at gaudy opposition on all sides as did Meg Dods at the Hotel at St. Ronan's Well.

In passing along the streets you may notice the shutters of one of these old public-houses closed, announcing the death of the ancient tenant: then hoardings are put up, and in a short time, with the aid of plate-glass, Grecian pillars, and brass work, such a change is made that the hostelry can be no longer recognised by its oldest frequenter.

## THE DESIGNS FOR THE GOVERNMENT OFFICES.†

Nor comparing the principal Gothic designs with others, for such merits as they may appear to possess, and without reference to the numerous and excellent drawings through which they are illustrated,—or without hoping to settle the question of the style or character appropriate to the Offices,—we may say there are few works in the collection lately open to the public in Westminster-hall, that would fairly deserve more attention than the designs numbered 116, 129, and 140—by Mr. Scott, Mr. Street, and Messrs. Pritchard and Seddon. With No. 35, already noticed, these works best support the claim which is advanced for Gothic architecture as alone adapted to the chosen locality and its associations, if not for general use.

Their authors start from this position of superiority; they have before them a defined purpose—an object which they consistently follow. They hold certain opinions—dogmas these may be styled—and on their belief they act. Others scatter rather than concentrate the aims of their art-life,—are not content to learn and gather from numerous sources—but realize least where they would be the most diffuse. We have always endeavoured to maintain that a return to unity of style was an object without which our architecture would not ever gain the high position that may be destined for it. We have believed that the greatest development of art was consistent with the prevalence

\* In this house are (or at any rate a short time since were) preserved some very good carvings, said to have been executed by the Italian workmen employed in the erection of Henry VII.'s Chapel, who formerly lodged here.

† See p. 346, ante. This article was in type last week.



of some one style,—that art is even served by such a condition of circumstances; whilst we have felt confident—from study of the recent history, as of the current progress of architecture—that the public perception and appreciation of the art, on which everything depends, was retarded by changes of style, or by the harsh contrasts, as they appear, between buildings, whether of the same epoch, or the same locality. The choice of a style (of course, for the subservience of art) looking at the question a moment apart from existing circumstances, is, we feel, surrounded with difficulties. These form the cause of the existence of any opposite factions in our profession. The circumstances, however, it is necessary to look at; and the question we put is, whether those who should be allowed to decide the future course—as probably they will at length do, in the face of all efforts.

Therefore, if it is a fair argument with the advocates of the Medieval for the Offices, that no other style would be suited to the character of Westminster Abbey and the Houses of Parliament,—the difficulty being one that has been seen in many non-Medieval designs which we have noticed,—it is equally important to consider whether the architecture of all London could be made Gothic; because, if not, there must be harsh contrast somewhere—fatal to the objects of all parties, and nothing would be gained, but rather the contrast effected would be greater, by the staving off the time of it. The study of Gothic architecture was, doubtless, the very thing needed—to correct the vicious copyism for one purpose, of forms adapted to other purposes, and to lead to due consideration of the properties of the materials used, as part of the question of art. The desired qualities of art, here in view, however are not such as would especially belong to any new development of a style. Much of the able reasoning of those professionally concerned in the Gothic movement, who treat the question with due regard for art, and generally on higher grounds than were once maintained, seizes on our sympathies because it is true of good architectural art in general. By every speciality of application to a style which is not that of our day, the value of these arguments is only lessened. We can conceive no higher development of art than that which would probably result, were some of those who are now cultivating the Gothic style, and who are acquainted with the characteristic details of other styles, to devote their efforts to the very field which they now eschew. This, it is said, is what some of the architects referred to, have in fact done in this competition; and it would be curious to discover, as we think is not unlikely, that these men are the authors of the best Italian designs. Possibly, we might even think also, that modern Gothic architecture had been wanting a little invigoration from without.

The point to which we wished to draw attention, was the position of vantage in which all stand who pursue one course, as well as that it is a matter really of less importance as affecting *intrinsic merit* than is supposed, what style may be chosen. But we proceed to observe that the tendency of the extremes to touch, is one of the most hopeful signs in the architecture of our day. It is effecting a slow, but obvious subversion in the application of Gothic architecture; pending which, something of the distinctive character—and perhaps, for a time, beauty—of the style, is lost; but much is gained in the way of new forms, in combinations suggested by other styles, and in the recognition of modern circumstances and wants,—things all, which are essential to good architecture, as to the beautiful in it also. Our architects of the Medieval school, or the best of them—no longer openly follow, but desire to lead the taste of amateurs; and we can only wish them to do so—being assured that the issue of that path, with their present aims, would be right.

There is a view as to the choice for modern use, of Gothic architecture, founded on its being the national style, which we shall be well disposed to examine. The impression of the peculiar value of the English Gothic has our full sympathy: yet we see no reason to question the statement, that this distinctive English character is precisely what could not be found in the collection of designs at Westminster-hall. But, what more than a mere version of any style, can England lay claim to have produced? She has not the title to the invention of the Gothic that is claimed by France. What style at first would seem to be more distinctively English, than the Elizabethan? yet, that was a style, in the main indebted to other countries. Italy, from the number of its developments, and the constant flow of art from it during centuries, is, perhaps, the only country in modern times which can be safely named as the originator of art. But, whatever their names, general styles no more pertain to particular countries solely, than do works of literature. Like the dramatic poetry of Shakespeare, the same architecture can be appreciated and become naturalized in many countries,—so that it would denationalize or revolutionize more,

to remove what may exist, and to return to what was, than to pursue the existing path, although we may have been diverted into it by foreign influence.

It matters little what was the original nationality; but it matters greatly that the constant invigoration of new life should be maintained. The architecture called Italian is capable of this—as was shown in the production of the French-Italian style; as is shown in the architecture of Paris during our own time; and by designs themselves, exhibited in Westminster-hall. The French-Italian style is one that was formed, we apprehend, on somewhat the same principle of effect as that on which the author of the design No. 112 set to work, as noticed lately. It was indebted somewhat to the Gothic. It is a precedent which we adduce, as leading evidence to our view that a style might be founded upon the general architecture of our day—as so to be appreciated by the public,—and which might use everything whatever in the Gothic that is capable of, and valuable for, modern application.

The Gothic designs in the collection at Westminster-hall must, however, be judged on other grounds than those which some of their advocates claim for them, or which others feared might lead to their rejection. The very character in design No. 129 to which our attention is directed by more than one valued correspondent—the “beautifully broken up” appearance, the “truly Gothic” effect, “this exquisite breaking up of straight lines, these glorious bays, nooks, &c.”—the *picturesque* according to the common rendering of it, all understood phrase—to us seems far more Gothic, than consistent with modern associations, or with the idea of the effect consonant with such a building, the purpose of which would suggest to some extent a monumental character. The “picturesque” effect which there is in drawings cleverly shaded in pen and ink, is not that of which an impression would be derived from the work itself, or, at least, not after the reason and the judgment had come in to aid. We doubt whether even it is good Gothic architecture, to design so determinedly, irregularly: at least, there was no such character in the chief municipal buildings, such as those which are remaining on the continent. The merit in No. 129 we might find great, nevertheless.

The design, No. 116, illustrated in thirty-two drawings—many of them elaborate, and to a large scale, and which include several well-executed perspective views—may, on the whole, be considered the chief of the works which were assumed to protest against a supposed foregone conclusion of the Government, or the Office of Works, against Medieval architecture for the intended buildings. It bears the motto from Horace (*De Arte Poetica*):—

“Nec minimum meruere decus, vestigia Græcæ  
Ausi decurrere, et celebrare domestica facta;”

and the drawings include a large plan of the streets extending to a considerable distance, a block plan also showing in some of the proposed improvements southward, and designs for the War-office and Foreign office in buildings of similar character, joined by archways. To the War-office there are two sets of drawings, illustrating alternative arrangements marked A and B. In many respects, we believe the design No. 140 would be quite as worthy of examination as any of the designs which we are more especially attending to; but, unfortunately, the exhibition closed too early to allow our giving the careful examination which was necessary to do this work justice. The design No. 116 is interesting on many grounds in addition to its merits. Its well-known authorship by one who has offered the best of the arguments put forth in favour of the views which have been adverted to; its careful treatment; and the grasp of the subject which it evinces, would alone demand for it particular attention. Still, in the lengthy “explanatory remarks” accompanying the drawings, well written though they are,—as also by the author of No. 129,—some assertions are ventured on, which we cannot wholly acquiesce in. We do not assent to the statement of facts, and the precise inference drawn, as to the comparative value of the “Classic” and the “Gothic” styles. We do not think that “our public buildings, with the exception of the Houses of Parliament and a few others, have become proverbial as failures.” Such an assertion—to be supposed of any value—must be taken shutting out the existence of a St. George’s Hall, and of the best works of Sir Charles Barry—as the Reform Club and Bridgewater House (which have essentially the character of public buildings)—for the present argument, and shutting out the facts as to the growth of architecture of a high class in our provincial towns. This unquestionable progress has been contemporaneous with the increasing study of the Gothic style,—which style, we may say, as the question is of facts, has not, during the same time, produced any considerable works except churches, and some of a particular class, and except the Houses of Parliament. These latter buildings—recollecting the circumstances under which they were designed, and

before the mediæval current had set in—should not be considered as the result of any diffused mediæval taste. They show that much may be effected in their style by a true artist; but this is not the point in doubt. On the other hand, we volunteer the admission that it is not proved by their case that beautiful effect in Gothic architecture requires extravagant outlay; but all the assertions to that effect, lately made, have no application to the present point.

Our architecture, as we have already contended, is not now “either Greek or Roman,” or “modern Italian,” but is our own: “our architects learn their profession among the debris of a former world, in another climate, and among another race,” but only as they ever must follow certain branches of their study, and just as those who would study Gothic architecture, must learn from the relics of manners and times equally foreign to our own. The choice of a style by “a noble duke,” our argument by no means requires that we should excuse or defend. We did before quite the reverse. It has been urged that the best model to be followed in the present instance, would be Inigo Jones’s design for the Palace of King Charles I.—but, we think, only by one not an architect, in a proposition respecting which in October last, we doubted “whether existing architectural talent could not produce something equally good in art, original, and more appropriate.” Yet the style of even that building we cannot hold is one incapable of artistic treatment; and we have named some designs in the present collection, which could be as fairly adduced on the one side, as the Gothic designs could on the other.

We deprecate, however, the adoption of style preceding, by whatever date, and different to, what is actually prevalent. There is a strong argument for Gothic architecture for ecclesiastical purposes, and the style may be considered as having been never wholly abandoned in traditional acceptance, and in many points of observance, such as are found even in churches which have no Gothic details. But it is very far from being the prevalent style in the general buildings of towns; and even used in town churches, it does not stand in the most favourable position for its own effect, or the general harmony.

This bazaar of the Whitehall Palace, seen by the authors of Nos. 116 and 129, is one of their own raising; no one whose opinion is worth a grain, desires more than the symmetrical duplication of the “fragment,” on the Whitehall site; and when the author of No. 129 refers to the “one reason, and one only, in favour of any other style” than the Gothic, *for the Offices*, he utterly mistakes the case against him. The reason, whatever its value, is, not the existence of a fragment at a distant spot, but that all the architecture on the same side, as everywhere else the Westminster buildings being excepted—is in one or other version of a family of styles which are not Gothic.

The author of No. 116 would disclaim the designation—Italian-Gothic—for the style of his design; he has sought not the style of any particular country, but Gothic in the abstract, and gathered from the works of all countries. It so happens, however, whether from the circumstance that Italy contains many Medieval buildings not ecclesiastical, or from some proper endeavour to avoid incongruity with our existing Italian buildings, or other cause, that the character of his design, as of others, is more Italian, or at least Continental, than it is English.

What reason can there be, whatever our style, that we should not at it to every want? Need we even conceal structural features, as the author of No. 129 allows it to be implied that we must perforce do? Why should we not expose to view the metal beams of an interior,—thus shaping a “design to suit the construction,” and add enrichments and foliated brackets in brass-work, and, as it is admitted by the author of No. 116, “has been beautifully done in another style, in the New Museum at Berlin.”

The special value supposed to exist in the Gothic style has become attributed to it, in great degree, from the mistakes that have been made during the “dark age” of English taste in architecture generally, and to which we have recognised that the mediæval principles were the fitting corrective. The only question as to the Classic or the Gothic, is what style should be taken as the point of departure. Now, supposing professional and architectural skill—equal, for example, to that of the authors of the best Gothic designs—together with conscientious effort, given to the Italian style, can any one believe, from the evidence on both sides at Westminster-hall, that any special fertility or art, arising from style, would be apparent. The real question to be decided is simply,—what is the style of the day? On that we must advance.

#### AWARD OF THE JUDGES.

The following is a list of the artists entitled to premiums under the award of the judges of the designs lately exhibited in Westminster-hall. The names are







Venier, has boldly used another method, and nothing, perhaps, on that site could be happier in effect. He resists the apparent thrust of the dome by huge consoles, which he renders ornamental by making them pedestals for statues. In another great work of his, the Redentore, there is a curious perspective effect. The dome is stilted up for about a quarter of its height, without any moulding or set-off, and the result is that, both in reality and in drawings, it appears to bulge very much at the springing.

Wren, in his St. Stephen's, Walbrook, has produced a church of striking originality and beauty, and no form, perhaps, of the style, could be better used for our churches. We may too, in London, boast of two modern domes,—at the Cal-Exchange and at the Museum,—whose novel construction in respect to material has been very successful, and whose outline, mode of lighting, and decoration give them a high rank. At Rome, the churches of SS. Trinità dei Pellegrini, S. Andrea al Quirinale, by Bernini, and S. M. Laureana, by Sagallo, deserve attention. In more modern times, the Basilica of Sta. Francesca, at Naples, by Bianchi, has been crowned with a dome of 15 feet greater diameter than St. Paul's. At Paris, the French may boast of the iron roof of the Halle-au-Bled, of the domes of the Pantheon, the Val-de-Grace, the Invalides, and the Sorbonne. But, except that of the Pantheon, they are not remarkable for elegance. Russia lays claim to more attention, and the recently erected church of St. Isaac, at St. Petersburg, has a dome treated in a novel, and seemingly successful, manner.

I must now notice a few specimens of eccentricities, merely to put them on record. In Sebastian Serlio's work there are several designs for domes, oval on plan, and, in several places, the idea has, unfortunately, been worked out. The most notable examples are the Cathedral at Pisa, and the two churches at the end of the Corso, in Rome. At Pisa, from the situation and accessories, the defect is not so much noticed; but, in the twin churches at Rome, each presents,—except when seen directly in front or at the side,—a different outline from the other, and the result is as unsatisfactory as can be imagined. Internally, the effect is not so bad, and, in several instances, quite the reverse. At the church of Ara Coeli, at Vicenza, for instance, the plan works out well; and there is one at Rome, I think, by Borromini, equally satisfactory. As curiosities, or monstrosities, as you like, I may instance the Eastern domes of the mosque at Tabriz, the Taj Mehal at Agra, and a dome at Isfahan, where the bulbous form of the exterior swells out beyond all concord with the interior, and every principle of construction, and, I think, of beauty, is sacrificed to a wish for novelty. To go into all the varieties of form would be a useless task. They range from the steep-like dome of S. Leonard, at Frankfurt, to the flattened top of the Four Courts, at Dublin, a building which, by this false outline, has just missed being one of the most pleasing and picturesque in the kingdom.

A few words as to lighting and decoration. I cannot but think that, however well a dark and gloomy effect may harmonise with the object of the church, yet, if the building itself be well lighted, the dome should be so too. To arrange this, I know no way more simple than the central light of the Pantheon. But other methods have been successfully used, and, as at the Minerva Medica, or better at Nocera, and best at Serbistan, the light has been admitted through many small openings in the dome. To leave the dome in darkness is to lose its whole effect, and to make it of no more value than the roof that I remember in a country town in Italy, where, at the springing of an unfinished dome, that flat roof was so hidden by being painted black, that it had all the appearance of a dark vacancy. A very picturesque way of lighting may be seen in the small semi-dome behind the altar of St. Sulpice, at Paris, where the light enters from behind a large cornice, whose projection conceals the source. A large cornice of this sort is introduced, with excellent effect, in the church of Monte Berico. This church offers, too, one of the most notable instances of slight piers that I remember.

For decoration, I know nothing to equal in effect the old mosaics. Their richness of colour, and the splendour of the gilt grounds which give grandeur without gaudiness, make them unequalled, and the treatment of the figures and scroll-work is never such as to break up the general outline. The whole seems to form part of the general design, and not to break the sweep of the dome in any way. This art is certainly not progressive. At St. Peter's, indeed, the modern mosaics tell extremely well, but they are of the most simple kind, and where elaborate effect is tried, as at St. Mark's, the result is painfully inferior to that of the old. These later artists put in pictures, when what was asked for was decoration. In later times still, some perhaps of the most successful attempts have been made in the beautiful Genoese

churches, where the artists have, as it were, identified themselves with the architect, and produced work which harmonises with his. But whatever the style of decoration be (and I say it with all the diffidence becoming a junior member of the profession), I am sure that any style must fail which, carried out like Thornhill's at St. Paul's, breaks up the beautiful contour of the dome with columns and arches, and other forms utterly foreign to its outline.

In reviewing the whole subject, the most inveterate admirer of the Middle Ages (and I confess to being one myself), must, I think, admit, that the dome owes much of its grandeur to the moderns; and, admiring as I do the picturesque effect of the Greek churches, I cannot help thinking that I would scarcely exchange the majestic dome of St. Paul's for theirs. I know its waste of space—I know that one-half of it is, inside, a dark mass, encumbered with timber and with brickwork, and I know that the others are small because they tell their story truly, and show without what they are within. But the peristyle, the lofty dome, and its grand lantern, have a look of majesty that defies its rivals, and almost reconcile us to all its faults. And in the days of old the architects found at St. Mark's the same want that Wren did, and supplied it in the same way.

One word more.—Of all these glorious works that we have reviewed, who were the authors? When we know and glory in, and Angelo, Brunelleschi, and the architects of Sta. Sophia are household words to us. But of the multitude of other works which are spread over the land, who were the workmen? whence came they, and where did they learn their craft? It was no common skill that poised the stones at Mycenæ to last 3,000 years; that raised the fragile coil of pipes that has crowned S. Vitale for thirteen centuries; and that spanned the Pantheon with a dome not yet surpassed!

But of all the thousand pilgrims who gaze delighted on these works, how few give a thought to their authors! They were of us—proud may we be to say it—and well could I wish that the glance of modern serenity, that has searched so deeply into the cloudy past, could open out to us the names and history of its guiding spirits, and let us know somewhat of the workings of our brethren of old, who have left behind them only their great works—

"Footprints on the shores of time."

#### MR. WIGHTWICK AND THE CLASSICISTS.

SIR,—The notable argument from the "requirements" of the sash-window is a fair sample and highly characteristic of the working of our system of supposed "competition," both artistic and commercial. Still more and more omissions, to save either the elbow-grease of competing contractors, or the brain-grease of competing artists, create more and more "artificial wants,"—afterthought necessities, that need not have been necessities at all, to be miserably patched up with palliatives whose "barbarism," the architects that cause them, but cannot supply them, are the first to complain of. Designers may of course omit from their plans and show-drawings whatever is so essential to the finished work as to be sure to be added somehow, whether designed or not. Such things you may leave to the consideration of mankind in general; as Sir J. Paxton did his diagonal ties, foundations, gutters, wet awnings, and in general all things necessary to make his building stand, or keep out wet, or sun, or let in air, or be made, or put together, or insured, or taken down. On this principle it is well understood that in Renaissance designs, as the smoke, for instance, after they are built, must be got rid of somehow, the chimneys may assume on paper any form deemed conducive to effect of "sky-line," or be omitted entirely, as not "required by the genius of the style." Hence, in the dark ages before photography, foreigners doubtless supposed, and may still suppose, till some eccentric photographer has a fancy to take Somerset House from the river, or Nash's mortar palaces from the south-east corner of Waterloo-place, that those marvels of British art rejoice in the sky-lines contrived by Pugin and Lewis. Well, now the next step will be to argue à la Wightwick, that a style like the Northern Gothic, of which "the genius requires" tall, rounded, detached, and spreading-capped shafts over every smoke-flue, is extravagant, and not to be named by "common sense," beside the convenient Italian that requires nothing of the kind, while admitting any range of fancy in the name of chimneys, from urns to lions, chaste curlicues of the "box-model," or dragons and hydras and chimeras dire.

Greek porticoes must be, according to Mr. Wightwick, so supremely useful, that I wonder they are ever removed from buildings that have once enjoyed the luxury. A shelter projecting some fifth or fourth part of its height from the ground, must be so greatly

protective to "coming and departing visitors" (especially when on the level of the first floor, and having itself, as at the Custom-House, or the Gower-street College, no floor), and with its columns set at the "Eu-style" distance of 2½ diameters, it cannot, of course, darken "the vestibule and the room above" (though why the latter should be included under it at all I cannot see) in any degree worth noticing, compared with an "arcaded structure" that may have its pillars 10 diameters apart, and its whole arcuation taken out of the space that would be filled up by the Greek entablatures and pediment; of which the former alone must, as Mr. Wightwick is well aware, occupy from a fourth to a fifth of the whole height from the ground, to be enduringly Vitruvian. Indeed, the whole expression of all Classic architecture, whether columnar or fenestral, is so inseparably dependant on the height of mass above the apertures, that it is easy to see the relative praise awarded to the "proportions" of our buildings is simply proportional to their superfluity of matter so situated; that is, to the extravagance and baneful capacity of their stagnant-air reservoirs. The Reform Club-house yields to its minor neighbour simply for want of this; and the Conservative and New United Service owe their superior dignity to nothing else. Instead, therefore, of the Classic opening admitting, as Mr. Wightwick leads his reader to suppose, as much light at every part of its width as an arched one would under its key; the luttled aperture (whether window or intercolumn) can hardly, in a given total height of masonry, be continued up, without losing all classicity and dignity, any higher than the springings of an arch might be. And as for lateral abutments, they are as much wanted in Roman as in Gothic if you build for posterity; and a little wasted in Gothic as in Greek, if you tie with iron, as in all the Italian Gothic, and all our Renaissance, Classic or Gothic, from St. Paul's to the Houses of Parliament.

But how can this question be argued till we are sure in what sense we use terms? Mr. Wightwick and I may, all the time, be meaning by "Gothic," totally different things. He appears to make Gothicism consist in (1), silly imitations of archwork, as at Pisa, and the new toy for Constantinople; (2), buttresses or pseudo-buttresses; (3), universally arched openings, even in a granite cow-shed; (4), stone mullions; (5), roofs steeper than a certain angle of pitch, which he does not define. None of these, and still less the parapet (which he tells us is "invariable in all first-rate Gothic structures") can I regard as at all essential to Gothicism, in the sense the term is now taken by the educated, and which, I believe, has altered considerably in a few years. Eight years ago, I observed that almost every characteristic feature of English Gothic, the only Gothic I knew,—in fact, every one that was more than minute detail, and quite everything that our restorers had then copied, grew up (or down), simply from the working out of the problem to vault a church, and were without sense or connection in an unvaulted building; so that all our modern Gothicism, as well as the Tudor realities, things (as Mr. Wightwick says), "of walls and flat roofs," were as mere pseudo-architecture and child's play as Palladianism itself; and that Pugin and his school were simply repeating, under the disguise of another style, all that he (and all non-professional writers on it before him), had satirized and laughed at. This (which I believe no one else had pointed out, though Dr. Robison, in his "Essay on Roofs," before the Gothic revival was demented of, had announced the same of the Medieval woodwork, and notably of Westminster-hall),—this remains as true of our 1857 Gothic, as of poor Pugin's or Rickman's; but not so the principle laid down plainly by Dr. Robison, and tacitly, but implicitly I admit, in my reasoning of that time, that Gothic was exclusively a stone style, or one for vaulted building. In the wider, and yet more strictly artistic, and at the same time ethnologically correct use of the term now becoming general, chiefly through Mr. Rickman's most careful and analytical chapter on the "Nature of Gothic," we see that there is no peculiarly Gothic style of construction. So wide a range of race can only apply with strictness to an engineering problem. Indeed, not to a solution of an engineering problem, certainly I might have seen that a misal border, which certainly (if containing no line of architecture), has nothing to do with vaulting, may yet be as Gothic or Ungothic as a cathedral or town.

Mr. Wightwick goes a great way into very peculiar circumstances, those of the granite districts that do not cover a one-hundredth part of England, to find in a granite cow-house, something that he thinks will be most effective and serviceable in a non-Gothic form. I utterly deny that the cow-house he describes, either is of any other style than Gothic, or could fail to be Gothic except by being carelessly and wrongly finished. An unaffected mason, who aimed only at making a good cow-house, and not at mimicking things seen in modern towns, would, if he had any



mind and applied it to the work, not square the pillars, but chamfer their edges, stopping the chamfer in some neat way, upward and downward: the lintel-course he would not lay at once on their tops, but on bracket-capitals, to diminish the width of bearing; and these would have their offensive corners removed, as would the rafters if they overhung; and if there were coping, it would be bevelled to a ridge, and the whole would be recognised by every one to be what we now call "Gothic," but what, in the Middle Ages was called nothing, because nothing else was built. If engineering works, intended to be in no style, are not now Gothic, it is because they are not true engineering—not really considered and thought out.

Of course, fictions and affectations (as high roofs with parapets, that retain the snow on them, or pointed arches where round would be better) are not Gothic. They are mere blots and blemishes in any style. I define Gothic as the unaffected style of the Gothic nations, when unmixt with imitations of human work for ornament. Now the quality of being unaffected excludes all imitations of any form for a better (i.e. more utilitarian) form of the same thing. It is ungothic, therefore, to make your roof-pitch either so high or so low that it would have been better (in a utilitarian sense) a inch lower or higher. It is ungothic to give a window a round head, because that can have no structural advantage over a pointed one, and, as a Goth, you love pointedness, and that quality of form which Ruskin calls *rigidity*, which is present in a pointed, and absent in a round arch. But it is not ungothic to give it a lintel and no arch, if that be, in the locality, the cheapest way of covering it. Again it is ungothic, because affected, to make the middle arch of a carriage bridge pointed, because there a single segment is structurally better, as the Middle Ages men themselves knew and practised. For the same reason, a real Medieval would have made the arches of the St. Martin's Schools round, if obliged to arrange them as at present, centre over centre; but if not so obliged, he would, for the sake of using pointed ones, have arranged them two arches above one, and the pier over its point. Thus, either the present arrangement of them (throwing a mass over every weakest part, and a void over every strongest), or else their being pointed is an affectation.

A cause must be reduced to a desperate strait for arguments, ere it can concoct such a one as Mr. Wrightwick supposes drawn from Oxford. The Radcliffe Library is the "coronal pride" (Anglic), the biggest round building of that town. So is, by-the-bye, at Jerusalem, the Mosque of Omar, which Stanley says is the sole, yet all-sufficient dignifying feature in every view. It is a curious parody of a domed building among rectilinear ones, and deserves to be investigated. But, of course, it matters not whether the "coronal" building be as Gothic as the Pisa Baptistery, and the other Greek temples, or vice versa. However, the triumph thus secured for whatever may happen to be the style of the Radcliffe over that of Merton Chapel, is evident. I wonder Mr. Wrightwick did not take a wider area for this compeous mode of comparison. Dares any one deny that St. Peter's is the "coronal pride" of Europe? Is it likely, then,—is it "commonsense"—to suppose that such an univalued work could "happen" to be in any but the very best style of Europe? Of course not: the Goths are annihilated.

I borrow a happy expression of one of your correspondents, who complains that I fall foul of buildings only for "happening to have" Classic decoration. "Happening!"—only think. What a curious phenomenon this decoration must be, to happen upon buildings; and to happen to take so very much labour, and happen to double or treble their expense. I wonder whether it ever happened to decorate them well, or to be in a good style. E. L. GARBETT.

P.S. In his last letter, Mr. Wrightwick has quite broken off the consistency he hitherto maintained, by taking up the view of your correspondent, "A Mediavalist," on "the question of association with existing buildings," namely, "that it lies at the root of the right solution" of the problem (not of general form and grouping of masses in the new work, but of decorative style. In his former paper he was praising rightly enough (as a merely picturesque merit worth preserving where we have no higher), the contrasts of style presented at our universities, the quaint juxtaposition of a Tudor chapel and Corinthian senate house, or a round of Wren between Wykehamite colleges and Elizabethan schools. He is now for a "compromising harmonization," that requires us, it seems, when building between such monuments as the Abbey and the Treasury,—to find some style a little truer than one neighbour, but fatter than the other, and adjust, with nice gradation, what some writer for the *Critic* calls "a chain of sequent passages of art." (Those "guides of public opinion," the penny-librarians, by the way, who, on an occasion like this, have to get up, at an hour's notice, something to pass for architecture, are, if possible, a more baneful tribe than even percentage architects themselves, with whom they share the peculiar curse of inflicting by every blunder, often by every act of their life, permanent injury on the generations of mankind.) Now, I had studiously avoided resting any piece for Gothic office on this broken-reed of "association," and it is astonishing to me how the industrious author of No. 129 ("A vaillant cœur rien impossible") could be so mistaken as to make

this the base of his printed "Apology." To say nothing of its being a two-edged sword, that will serve our adversaries far oftener than our friends, the principle is plainly an utterly inconsistent with any pretence even that "there is such a thing as truthfully dealing either in materials, construction, or in any other principles of art," so that Mr. White and his fraternity, were such a principle once admitted, might soon wind up their search.

The cant about this "harmonization," however, seems so current at present, that I must crave your leave to submit a few propositions on the matter, which I am prepared to defend, and which I think might save us from the most gross and ludicrous blunders on this point.

1. Whatever is *truthful* or *unaffected* in style is in harmony (or "keeping") with all true things in the world; all nature and all true art.  
2. Whatever is *false* or *affected*, can never be in harmony with anything but its own particular form of falsehood.  
3. The most admired groups of buildings in the modern world (or world of affect of architecture), are where there is no attempt to assimilate one building to the style of another, but rather to bring together the most trenchant contrasts. Our universities and St. Mark's place, at Venice, are notable examples.

4. Where the existing buildings are all or chiefly affected, or mimic, the greatest contrast of this kind would result from the introduction of true or unaffected architecture.  
5. The real harmony of a building with its neighbours depends solely on general form and distribution of masses, and not at all on decorative style. Of course this is hereby at present, before actually scouring the notion as that of a "monomania," pray observe that it was that of all the fathers of your orthodoxy, all the models of your mimicry, Medieval or Renaissance. Without going beyond this very Abbey, you may see that the beginnings of such a work were regarded for three centuries as absolutely fixing and governing the general form and dimensions of every addition, but never affecting its style; and M. Q. de Quincy, in his lives of the "Renaissances," says that all who built round the Piazza and Piazzetta of St. Mark, were bound by the heights and main proportions of opposite and adjacent works, though each working out as new a style as he could.

When this cant of "harmony of style" has been heard in Parliament, as in the question of assimilating a new bridge to the New Houses, it has been newly remarked, that "the style of the New Houses must leave off somewhere." To be sure it must, if only a mask and a sham, and this is simply confessing it to be nothing else. If they were real architecture (that is, their style a real style), it need not leave off anywhere. The degree of enrichment would leave off, but not the style. British senators well know that no ancient capital ever had a Senate-house whose style had to "leave off" the style of the real "Palace of Westminster" in its day,—the styles of the Hall, and Abbey, and Chapter-house, and Cloisters, in their days (namely, before brick was burnt, or the forests used up) left off anywhere, but continued over London and England. Thus is the broad difference between truth and a lie, that every lie, every fiction, every play, must come to an end, or "leave off somewhere." E. L. G.

#### DESTRUCTION OF MURAL PAINTINGS IN ITALY.

LAST week, in connection with the Arandel Society, Mr. Layard gave some account of the condition of many of the fresco decorations of Italian buildings, and of the efforts made by himself in conjunction with Mrs. Higford Barr, to preserve tracings and drawings of them, some of which the Arandel Society are about to publish.

At Borgo San Sepolo a Mr. Layard found some of the finest frescoes of Pietro della Francesca, headed by Vasari "as too beautiful and too excellent for one man," from which Raphael acquired his finest ideas of chiaroscuro, in a room now filled with pledges to the Monte di Pietà of the district. To this room there were five keys, one for each director of the Monte di Pietà, and these five gentlemen happening to be at loggerheads, it may be conceived that some diplomacy was necessary to obtain the five keys. And then there was the room to clear of corn, wool, cloth, oil jars, and lamps, and then the windows having been bricked up candles had to be brought in, till at length was discovered, traced, and recorded in a faithful drawing, one of the most impressive representations of our Lord's Resurrection. Another and scarcely inferior fresco of the same painter was shown, representing that sleep of Constantine in which the victorious cross was revealed to him in a dream—the very fresco so praised by Vasari in his life of the painter as having given an impulse to the art by its light and shade. While Mr. Layard was tracing this fresco the workmen were breaking through the wall above it, and a brick falling struck away half the head of the page who is watching the Emperor. When Mr. Layard remonstrated, "Half his face gone?" was the reply, "*Per Bacco!*" then we will paint him another!" Mr. Layard described how when, by Mr. Kirkup's efforts, the contemporary portrait of Dante, by Giotto, was brought to light on the wall of the Bargello, at Florence, it was discovered that a nail had been driven right into the eye of the poet. So the Grand Duke employed a painter to paint in a new eye; and then the old face was repainted to harmonize it with the new eye; and then, as the red of Dante's hood and green of his dress were the colours of Italian unity, the obnoxious tricolour was replaced by a harmless chocolate. Mr. Layard found the chapel of St. Cecilia, at Bologna, used as a cavalry stable, and the frescoes of Francia and Costa destroyed as high as the soldiers could reach. One of the finest frescoes of Fra Bartolommeo is in a cart-shed at Florence. This Mr. Layard

found full of water, and was obliged to extemporize a drain before he could begin his work. At Spello are the masterpieces of Pinturicchio, the contemporary of Perugino, and friend of Raffaele.

Mr. Ruskin afterwards addressed the meeting in aid of efforts for the preservation of records of a time when art and literature were the only exponents of men's best thoughts and noblest energies.

#### ST. JAMES'S PARK AND PALACE.

No one can have forgotten the Parliamentary discussions about the entrances to St. James's-park, and particularly the new one from Pall-Mall. Not a little was said as to the desirableness of removing the German chapel, which not only interferes with the line and width of the carriage way, but also with suitable approaches to Marlborough House, very shortly to become the residence of the heir-apparent to the throne. If the building is to remain, I would suggest the great improvements that would result from putting it back in line with the other walls. To those who might be inclined to demur to the idea of reducing the area of the chapel, it may be well to say that the congregation assembling there for public worship averages about fifteen persons, as I have repeatedly witnessed: I think I once counted as many as twenty. Between the outer door and the chapel proper, there intervenes a considerable space, or vestibule, affording ample facilities for the object I am proposing, without any interference beyond, so that a handsome portico, or ornamental front, might be raised in lieu of the present unsightly one.

It would seem that a plan is in prosecution for throwing away money in patching up the drawing-room entrance to St. James's Palace, by some outer exerecence, as an attempted remedy for the existing inconveniences, which no other Court in Europe would have ever tolerated at all. But why not follow the suggestion I have seen in your columns for completing Buckingham Palace, by the erection of a new wing on the north side, in correspondence, as to the garden front, with that recently completed next Piccadilly? In this way all the requisites for State occasions are obtainable on any desired plan or scale, contiguous to the residence of the Sovereign; whilst the parks and royal garden would afford the means of ready access, and departure for carriages, entirely independent of the streets. St. James's Palace might then become available for national and scientific objects,—the depository of pictures, &c. of which we stand in such need. H. T.

#### STREET ARCHITECTURE: COLOURED BRICKS.

TAVISTOCK—CHAMBERS, SOUTHAMPTON—STREET, STRAND.

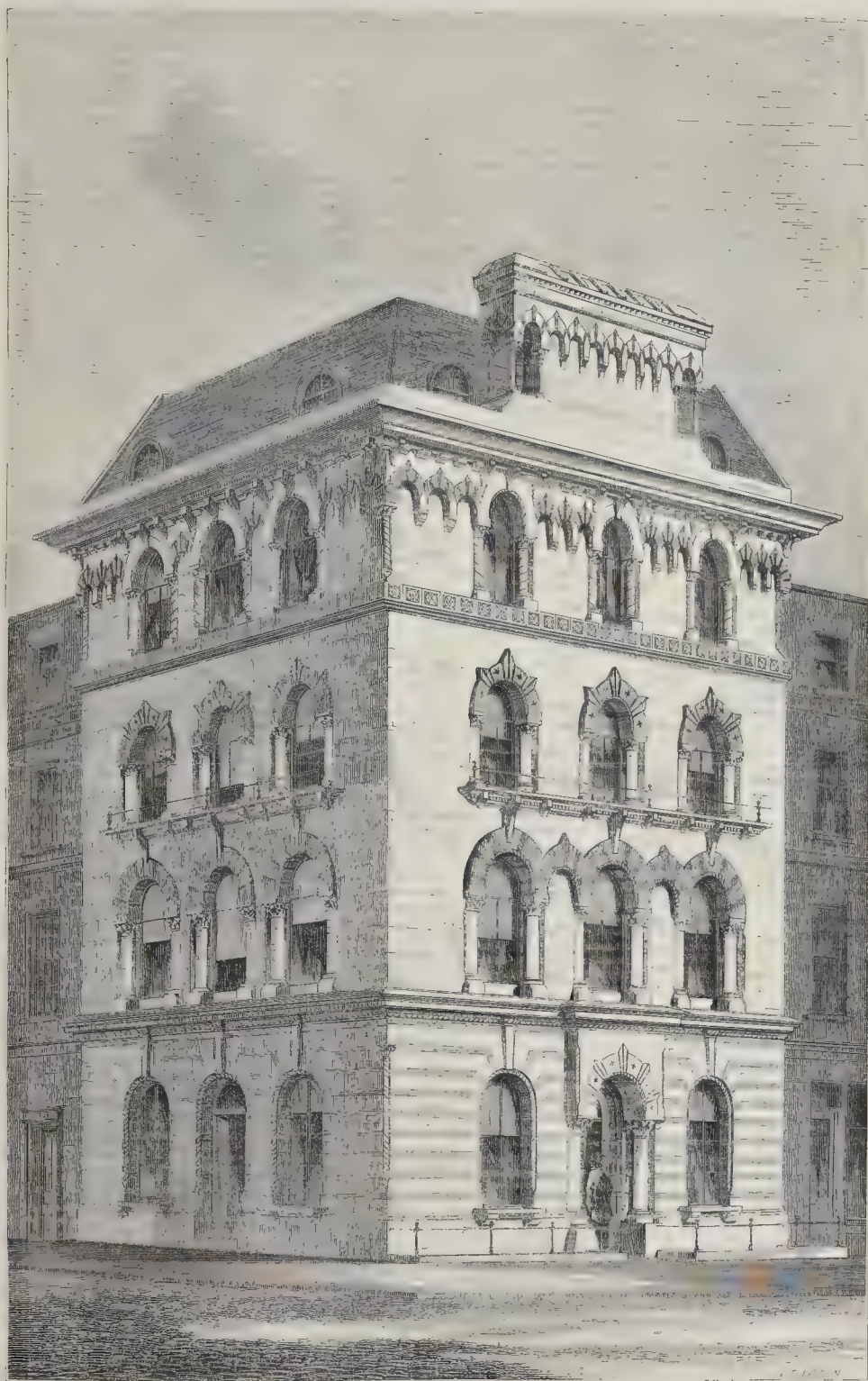
This house has been recently rebuilt from the designs of Mr. Charles Gray, architect, of whose special adaptation of brickwork in street architecture we have before now spoken.

The fronts are faced with yellow malm bricks, and the gauged arches to the windows, cornice, and other parts are executed in red and black bricks. The ground-story throughout is built of red and yellow bricks, constructed in alternate courses. The string course to the third story is ornamented with Minton's porcelain tiles, and the whole of the dressings to the windows, the porch, entrance, shafts, and caps of columns are executed in Bath stone.

A noticeable feature in the building is a stack of chimneys carried up above the main cornice: this is executed in red, yellow, and black bricks, and the design is of an ornamental character; and although this chimney-stack presents rather too heavy an appearance in the position it occupies, yet it is noticeable as having been a subject of thought by the architect, and has not been neglected by him in his design, as is too often the case in modern buildings. We refer to this, as too often designs, otherwise good, are spoiled by the unsightly appearance the chimney-stacks present when they occupy a prominent position in a building; while, at the same time, a little attention and thought would convert this necessary adjunct in a building into an ornamental feature.

We may add that we have the assurance of the architect that the total cost of the ornamental brickwork and stone dressings of this building did not exceed in amount the ascertained cost of covering the building with stucco with the cement decorations generally put on a building of a similar class. This fact ought to produce a more general use of ornamental brickwork than is at present found.





TAVISTOCK-CHAMBERS, SOUTHAMPTON-STREET, STRAND.—MR. CHARLES GRAY, ARCHITECT.



### THE STONE AND IRON ROOFS OF THE HOUSES OF PARLIAMENT.

PUBLIC attention having, by a recent discussion in Parliament, been directed to the condition of the iron roofs and the stone of the New Palace at Westminster, the following information respecting them may not be unacceptable to your readers, and may serve to remove any misapprehension that may exist on the subject.

Metal roofs were not contemplated in the original design; they were resorted to upon the adoption by the Government of Dr. Reid's plans for warming, ventilating, &c. by which they were required to contain, as they now do, the main smoke-flues of the building; and therefore it became necessary that they should be constructed entirely of fire-proof materials. A coating of zinc, in preference to paint, for the external plates was adopted, upon the strongest testimonials from the French Government, and other sources, as to its long and successful use in France, where it still continues to be employed extensively, particularly in the dockyards of that country. Since its adoption at the New Palace at Westminster, it has also been extensively used, both in public and private works in this country, and is still being used by the Government in our own dockyards. Experience, however, has proved that it is not capable of offering a long resistance to the deleterious effects of a smoky and impure atmosphere, and the roofs of the New Palace at Westminster have consequently become partially covered with an oxide of iron or rust. As regards their stability and weather-proof qualities, however, they are none the worse on that account. No difficulty, moreover, exists in resisting all further oxidation, by covering them with one of the anti-oxide compositions now in use, which may be done at a very moderate cost. Several of these compositions have been in course of trial, in various parts of the roofs, for some time past; and I have reason to believe that I have discovered one that may be said to be almost imperishable.

The choice of the stone adopted was the result of the labours of a commission, consisting of two of the most eminent geologists of the day, an intelligent mason, and the architect, who, in the year 1838, visited every quarry and locality in the kingdom likely to furnish building stone. The stone at Anston, in Yorkshire, was selected and adopted by the Government, and every precaution has been taken to obtain a supply from the best beds of it. Upon the whole, it has turned out to be at least as good as any stone hitherto employed in London. Portions of it, in particular situations and under peculiar conditions, have doubtless yielded to the deleterious effects of a London atmosphere; but the proportion of the parts affected to those which are perfectly sound is infinitesimally small; and it is remarkable that the decomposition is almost exclusively confined to the plain faces, the moulded and carved portions of the work being generally as sharp and perfect as when first executed. To say, therefore, as has been recklessly asserted, that the stone is perishing in all directions, conveys a most unfair and exaggerated impression relative to its actual condition. Various economical means, however, are available for arresting all further decomposition of the parts affected, and experiments have been in course of trial for years, with a view to determine upon the most effectual and unobjectionable process to be employed; and it is to be hoped, therefore, that ere long all further decomposition will be successfully arrested.

CHARLES BARRY.

### UNIVERSITY OF METROPOLITAN SCHOOLS AND COLLEGES.

Or the phases of our time and generation, the most remarkable is the progress of education. Within a short period two universities have been founded, and most successfully carried out, in London, and three in Ireland, besides many provincial colleges. In addition to this advance, all the great towns have instituted schools of art, of design, and of general instruction, for the masses inhabiting these emporia of trade; but the most palpable sign of advance is discernible in the more liberal admission to the old universities of extern probationists for literate degrees. The "*Alma Mater*" have at length opened their bosoms for the tutelage of the population at large, and learning is no longer confined to the cloister.

In such a position of affairs, an allusion to the chartered schools and colleges of the great metropolis may not be out of place. There are many nobly endowed foundations, with capacious buildings and distinguished teachers, within the busy and fuliginous precincts, which originally were placed advantageously for the

education of youth, where they stood apart from the haunts of commerce and the turmoil of busy millions. The site of these colleges was in those days comparatively valueless, but now surrounded by houses, heaped together in unhappy proximity, the ground they occupy is of inestimable worth, being as indispensable to the requirements of an improving city, as it is unsuited and improper for the residence and education of congregated infants.

Educational conferences show the tone of public opinion; and the zealous perseverance of Royalty in the promotion and culture of sciences and arts predicts that schools of instruction shall be hereafter more effective in spreading widely that intelligence which ennobles a nation, and that knowledge which is the essence of power at home, and the foundation of wealth in the colonial dependencies.

To clear away the curious masses of deformity in which the busy trade of London heaps its wealth is not possible for any Government less absolute than that of imperial Augustus. The whole estate of the corporation could not suitably lay open St. Paul's; nevertheless, by degrees amendments may be effectuated in the surrounding fabrics of that and of many other structural objects, which enrich, but do not grace nor dignify the City, as they ought. But there are foundations, possessing also inherent architectural merit, which are unnecessarily built about and blocked in, notwithstanding that there was ample space of ground for their proper allocation. Christ's Hospital is the most remarkable instance of this kind: the church, the hall, are scarcely visible from Newgate-street. The former, like many others of the civic sanctuaries, is shrouded about with lofty dwellings, which conceal all except the steeple: the hall is certainly (temporarily) discernible through an opening left by the demolition of the Compter. But had though the location is for architectural exposition, it is inconceivably worse as regards the objects to which so much wealth has been dedicated.

Founded (as the colleges at Oxford or Cambridge were) at a time when the population was under a fifth of the present amount; when open fields bounded it without; when the atmosphere was comparatively pure, with a space of  $4\frac{1}{2}$  acres, this college, in the days of Edward VI. might have been a proper alumnar establishment for the children of needy citizens (*for whom it was intended*); but now that a swollen metropolis has grown to an extent of 7 miles in a radius drawn from any side of it, such a position is equally unsuited to the morality, the health, or the education of the pupils.

Increasing with the endowment, this school now nurtures, educates, and lodges, 1,000 boys: they are wholly domesticated within the precincts, save during the periodical vacations: there is no playground but that paved yard in which their gambols afford amusement to observers through the iron railings, extending 100 feet along the pavement; therefore, when on furlough, their migrations, if not in the deserted pens of Smithfield, must be altogether within the bills of mortality; and yet the estates belonging to the founders' trust have many farms and broad lands, convenient to the metropolis, whereon colleges might be founded capable of accommodating the whole number; while the buildings now in their occupation, if sold, would yield a revenue not only sufficient to erect suitable colleges for 1,200 boys, but to add immensely to the original endowment.

In the present constipated state of the public thoroughfares, in the paucity of situations for public establishments,—when, from the enormously enhanced value of building room, the labouring population is driven farther from the centre,—under the absolute impracticability of obtaining any *locus standi* for institutions of inestimable social value,—is it not worse than stolidity to retain, in the heart's core of the metropolis, noble buildings with ample space, which are perverted to purposes destructive of the very objects for which they were destined?

But there are other chartered schools, other buildings, and other sites, which are equally ill-placed as regards the nurture and education of youth. Merchant Tailors', which educates 260 boys, situate in a retired lane (Cross-street, off Canon-street), an old, tottering, clumsy pile;

central to the busiest mercantile traffic and storage,—had in its vicinity,—in its air,—in its deficiency of lodging and dormitories; but great in its scholastic reputation, as in its inflated rental, the Mercers' endowed academy of 150, and the City of London school, with its rapidly-advancing fame; there is St. Paul's school, close under the shade of the cathedral, backing Old Change, without any playground but the "fornices," as called in from the pavement of Paul's-cham; and, lastly, there is the Charter-house, with its 44 boys on the foundation, its 130 boys externs (but boarders with the salaried masters!): this same charity also lodges and pensions 80 poor brothers, retired tradesmen, gentlemen, and officers, and possesses, or ought to realise, a revenue of 60,000*l.* per annum! And yet all these noble institutions, possessing profuse incomes, established for the comfortable and healthful abodes of the young and the old, are suffered to remain in the centre of the City's tumult, solely because the governors and the masters retain the antiquated notions of their order; and because they are the recipients, and the auditors, and the disbursers of incomes which anywhere else might attract observation, but which the world's capital and its commerce bury in silence.

That the right institutions are here in the wrong place is as clear as that the right buildings and situations of London are grossly misapplied.

Communism of feeling and principle, in matters of public utility, is fast over-reaching old habits of educational prejudice. Oxford and Cambridge are admitting the necessity of embracing a more extensive admission to the tests and examinations of university diplomas: the extension, if not the generalization of their alumnar influences is recognised. May we not, then, hope for the advent of some congenial spirit amongst civic scholastic preceptors, which might adopt and universalize the same system, so that the princely revenues so piously dedicated might effectuate the most good, in the best possible manner?

A university, for example, founded on some of the Christ Hospital Charter-house estates,—a university of several colleges and schools, for infants, adults, and juvenescence, founded in a rural district, not very remote from town, the land and buildings occupied to be paid for and raised out of the separate estates of the various great schools, for their separate use, the various foundations in London to be sold, and remitted to ready and willing purchasers of the overcrowded city, but strictly under limitation for scholastic purposes,—that is, as to the reinvestment of the purchase moneys, by which might be realized vast sums.

Such withdrawal from London would, like bloodletting from a plethoric patient, relieve the pressure that impedes a redundant circulation: it would be more in conformity with the objects which the founders had in view, as it must be more conducive to the health, comfort, and progress of those children and pensioners who are now incarcerated in urban slums, not as beneficiaries, but prisoners!

Fancy the central area of the Charter-house, with its noble and convertible buildings, as available for one or more public institutions; or St. Paul's site cleared wholly off, together with the western range of the Old Change (of which it forms one-half); or the commercial value of Merchant Tailors' rightly applied. But Christ's Hospital, as a central position, would realize over 200,000*l.*; and so on of the other endowed schools. This clearance would leave room for emendations eagerly sought after, but impracticable, so long as the central seats of trade are thus occupied or retained: such ancient ascriptions of right to private boxes in the grand theatre of commerce are inconsistent with the requirements of the day, whilst the benefits these city locations confer can be of no value to those whose habits and discipline relate to sciences and things wholly disconnected from the performances before and around them.

The academic groves are always best removed from cities. There ample scope can be secured for study or for recreation;—there new edifices on approved plans can be more economically erected;—and there the genius of architecture may find a new field for the exercise of those



talents which are now in evidence before the public. The Gothic may appropriately revel there in every shade or tone of fancy; and a fresh impulse, corrected by experience, will assuredly bring to light plans and conceptions worthy of the academy of 1858.

There are estates, in school-trusts, of many hundreds of acres, in Hertfordshire, Surrey, Kent, Essex, and even in Middlesex, upon which a university of schools might advantageously be founded. Perhaps it would be necessary that an Act of Parliament should sanction the removal of statutory trusts: if so, there is no deficiency of philanthropic and literary M.P.s to pilot such a measure through the House. The removal of individual schools has been urged by the writer before now, but the withdrawal *en masse* as an *aggregate university* is broached for the first time.

Out of 3,000 resident pupils enrolled in the metropolitan first-class schools, there are not 300 whose parents or guardians reside within the limits of population. How much better, and happier, and healthier would they be in a rural college? Day-schools on a limited scale should certainly remain for the benefit of the small minority; but such establishments need neither the extent of ground nor scope of house room that is indispensable for large numbers congregated in a fixed domicile; neither would they require the staff of visitors, governors, masters, bursars, chaplains, servitors, auditors, and the hosts of other high salaried and feed *employés* with hard and obsolete names.

It is a known fact that one-third part of the endowed revenues of great schools is expended on salaries and other modes of disbursement not educational; and the formularies of antiquity with regard to these are not essential nor applicable to the usages of our time. London University retains none of them: this noble foundation completely educates and accomplishes 600 non-resident students: conceived in the great spirit of reform, it has germinated in our time, and the patron, Lord Brougham, took care that a suitable position and ample space should be reserved for ulterior enlargement. The Queen's College is also illustrious for an improved curriculum, but it is too much cramped, and most unhappily situated: that university might occupy more appropriately one of the vacated foundations, in which there is abundant room; and the halls of Christ's Hospital, if vacated, would be certainly more *à propos* to its objects.

Universities there must be in London: they have taken root, and are germinating with luxuriance: educational schools are also indispensable; but residential asylums, whether for the aged or for the rising generation, ought to be transferred to situations where study should be free from the seduction of vice, and where the breath of Nature might inspire the hearts of those who study Nature's laws.

#### QUONIAM.

#### GIGANTIC DRAINAGE OPERATION.

It is a rare thing to find private enterprise and intelligence operating upon so extensive a scale as in an instance which we are about to cite; and we cannot allow the opportunity to pass of commending the enlightened policy which prompts the outlay of capital in a direction which promises no early return, but of which the future results will be incalculably beneficial, not only to the spiritual landowner, but to the neighbourhood generally. The work we allude to is a drain of four miles in length, which is being constructed by Samuel Brooks, Esq. the banker, on his fine estate at Sale, in Cheshire, within six miles of Manchester. The cost of the entire length, we are told, will be about 30,000*l.* and one-half of the drain has been completed during the last twelve months. The drain is built of brick, and is 5 feet 6 inches in internal depth, and 3 feet wide inside. The bottom of the drain is 10 yards below the surface of the ground, where it discharges into the river Mersey (near Carrington Moss). During the progress of the work considerable difficulty was experienced owing to the water from quicksands, through which the operations had to be carried on; but this difficulty is decreasing, as the drain is now being put in further from the river, and consequently at a higher level. Already do the inhabitants find an improvement in the salubrity of the climate, owing to the removal of the dampness of the atmosphere in this level locality, and this case may be pointed out to landed proprietors,

as an encouragement to improve the value of their property by grappling at once with the drainage question in the same practical and enlightened spirit which has been shown by Mr. Brooks.

Nevertheless, while awarding this praise, we cannot resist inquiring if so large an outlay was absolutely necessary; whether, in other words, the object might not have been achieved at less cost in another way. We speak, however, without having full information.

#### THE QUESTION OF STYLE.

One very great argument for the adoption of the Gothic style for modern buildings is, that it will admit of buttress, of any kind of arch, and occasionally of short lintels; of vaults and domes of all kinds; of roofs, high, low, or flat, hipped or gabled; that it will admit of any mode of construction whatever, the mode in any particular case depending on the particular circumstances. As well, every kind of material is suited to it, properly used. Now these are things that can be said of no other style, modern or ancient.

The reason of this I ascribe to the fact, that from the early ages of the art, architecture has made a progress, interrupted at intervals,—as after the fall of Roman and Medieval art,—but still a progress. First, from the massive but unscientific art of Egypt and Greece, which, though unscientific, contained, without a doubt, the best science of the time, to the use of the circular arch in the mighty piles of Rome, and with its use, to a general lightness of the proportions of the members. The art of this time, in some examples, as mentioned by Mr. Petit, had some tendency to the final progress, which, however retarded by ages of darkness, resulted in the rise of Pointed Architecture, and the use of the pointed arch, and still further reduction of the mass of materials,—a progression which, if it did not continue to the fall of the art, at least must have continued until the general use of the low arch, in situations in which a loftier one would have been better.

The works of the revival of classic art are frequently truly beautiful, but those which are the best and finest in construction are found to be after the Gothic mode. How often are the city campaniles referred to Gothic construction, though dressed in classic mouldings, and with classic proportions? Buttresses in the guise of columns and pilasters; pointed arches that should be, at greater cost of material, turned into round; flying buttresses; pinnacles in the shape of vases and statues (often, however, no structural necessity); and spires undisguised. The antiquated lintel is a great source of trouble in such erections, where it is always imperative, by concealed arches, to relieve it of all but its own weight, and at St. Paul's too weak even for that: the architect, Dr. Robinson says, it was found necessary to truss. Though minor openings are allowed to be arched, yet the generally greater span of the entablature it is considered necessary to endow with the appearance of being covered by a lintel.

If classic architecture (which, as used, is usually that of a time less scientific than the Gothic period) is to be the style of the nineteenth century, it should be worked out to accord with our advanced state of science, when I believe it will be found to have become Gothic, except in mere detail. For instance, in many cases the superior science of the pointed arch, of necessity prevailing over others, will implant in it one of the most conspicuous features of the Pointed style, and so, doubtless, with others.

In modern Gothic I am afraid the frequent error is to slight construction for mere form,—fashion. For instance, in an arch of considerable span,—as to a bridge,—unless the versed sine of the arch be greater than half the span, why should a pointed arch be used? For in a low arch it appears evident that the thrust of a pointed arch would be more horizontal than that of a segmental one, consequently worse construction.

And now for an argument which the opponents and the advocates of the Gothic style, as well as those who favour both it and the Classic, have used in their several ways.

The first absolutely deny the style for modern buildings anywhere: the second absolutely would have it used everywhere; while the third, denying its propriety for towns, admit its accordance with the country, on the ground of its irregularity.

If it were granted the style is irregular, which it is not, should we slight all its science and cast it aside? By no means: our problem would be to mould it to our use, and, where regularity was required, to make it so.

But I think it will be found that simple buildings, as a church or a hall, will be found to have a regular symmetrical plan, or at least a symmetrical front; of course, additions must be set aside. Of symmetrical fronts, the number is so great as to require no examples.

In more complex forms, as dwellings, I place the

disregard of this symmetry, not to perfection or imperfection of the style, but to the imperfection of human design, which could not, as in the infallible design of nature, comprise, in one outline, regular, symmetrical, beautiful, all the necessary features,—the utilities. The classic architect, considering external symmetry not to be dispensed with, always designed it; but most frequently, from human imperfection, many inconveniences result in his buildings, as interior ugliness and want of symmetry, badly lit passages and rooms, &c. to which the Gothic architect justly considered external symmetry to be subservient.

The Gothic architects copied nature by imitating her principles. Of all their utilitarian constructions, as buttress and pinnacle, window and chimney, they made most exquisite beauties, and, where possible, arranged them with symmetry. It is scarcely necessary to point to the human figure, and mark the beauty of the parts, the eyes, the mouth, &c. or to point out the symmetry and regularity in the arrangement of the whole.

In fine, it is the identical principle of utility made beautiful, and arranged by symmetry, that gives rise to the feelings with which we view a Grecian temple, a Gothic cathedral (the Parthenon and Freiburg Minster), or a finely proportioned human figure. It is the science of the second building, and its aspiring beauty, that give it the pre-eminence.

It is for us now to work out a progress in the Pointed style—to make it the true "style" of "57."

#### CHURCH-BUILDING NEWS.

**Oxford.**—We are informed that the church built at Wheatley, near Oxford, is not Italianised Decorated, as stated in an Oxford paper, quoted by us, but is pure Early English in style.

**Aylesbury.**—The cemetery buildings and works at Aylesbury are progressing. The designs were obtained by public competition, and, out of about thirty sent in, those of Messrs. Poulton and Woodman, of Reading, were selected, and these gentlemen are carrying out the designs. Mr. Strong, of Windsor, is the contractor for the chapels, and Mr. Sharp, of Aylesbury, for the boundaries. The two chapels are in the Decorated style of Gothic architecture, and each is to have a bell-turret of similar altitude and character.

**Core's End.**—The chapel at Core's End is about to be repewed and otherwise improved, and schools erected over the vestry, on plans provided by the architects of the Aylesbury cemetery.

**Nottingham.**—The following tenders for building a new chancel and other works at St. Mary's Church, Ratcliffe, near Nottingham, were given in:—

Mr. James E. Hall, Nottingham...	£970	0	0
Mr. William Lee, Retford .....	687	0	0
Mr. C. C. and A. Dennit, Nottingham .....	605	0	0

Quantities not supplied. Mr. Charles Baily, Newark, is the architect employed.

**Kirby Muxton.**—The church here has been restored to some extent, at an outlay of 500*l.* to 600*l.* and a school in connection with it is being erected on plans in the Gothic style, provided by Mr. Butterfield, of London, architect, and entrusted to Mr. Herbert and Messrs. Lindley and Firth as the builders and stone-masons.

**Blackburn.**—The cemetery approaches completion. The chapels are on an eminence fronting the Whalley new road. In the centre is the Church of England Chapel. The plastering of the interior of this edifice is only just commencing, the masonry not being quite finished. On the left is the Dissenters' Chapel, which is almost finished. On the right is the Catholic Chapel, rather larger than that of the Dissenters, but not completed. Each building has a spire, the apex of which is crowned with a cross. A bell will be placed in the spire of each chapel. Mr. Walsh is the architect. The laying out of the grounds was by Mr. W. Hopwood, the surveyor of the board.—The parish church is now being repaired and newly decorated. It is proposed to put up a Decorated window on the south side of the church, in memory of the late vicar, the Rev. Dr. Whittaker. Messrs. Bailie and Co. of London, who furnished the memorial window in St. John's Church, in memory of the late Mr. Robert Hopwood, have sent down a design. The three lower divisions are occupied by representations of the Annunciation, the Last Supper, and the Raising from the Dead of the Daughter of Jairus. The upper are fitted with tracery of a geometrical character. The designers have also furnished a list of corresponding designs for the remaining five windows on the south side.

**Garstang.**—The first stone of a new Roman Catholic church was laid at Garstang on 15th inst. The church, when erected, will accommodate about 600 persons, and will be dedicated to the Virgin Mary and St. Michael. The architect is Mr. E. G. Paley,



of Lancaster, who is also engaged in erecting the new Roman Catholic church at Lancaster. The building consists of nave, 77 feet by 26 feet 6 inches, divided by an arcade of five arches from a north aisle the same length, and 18 feet 6 inches wide; chancel, 23 feet by 26 feet 6 inches; Lady Chapel (separated from aisle and chancel by an arch), and western tower, 22 feet 6 inches square, and 61 feet high to the top of the battlements. It is in the Geometric style. The building on plan and without the tower is a parallelogram, 100 feet long by 46 feet broad, and is divided by columns and arches. A window of five lights, filled with tracery, occupies the east wall. The church and presbytery will be wholly built of freestone, from quarries in the neighbourhood, and the contracts have been taken for about 3,000*l.* by Messrs. Harris, Wilson, and Walker, of Lancaster, and Mr. Watehouse, of Garstang. Schools and master's house will be built at a little distance from the church, and will consist of two principal rooms, each 40 feet by 18 feet, with entrance porches, open roof, &c. They are to be chiefly of brick, with stone dressings.

**Edinburgh.**—The restored parish church of Old Greyfriars, Edinburgh, has been opened for public worship, after an interval of twelve-and-a-half years. The church was accidentally burnt down in January, 1845, the walls alone remaining; and, though restored outwardly on the same model, it still exhibits some improvement. In the interior a complete change has been effected. The galleries and pillars have been removed, and the entire area opened up like a large hall, spanned by an oak roof. The windows (nine in number), have been filled in with stained glass, being almost the first appearance of this ornament in the parish churches of Scotland, at least Glasgow Cathedral (which is one of the parish churches of that city) will shortly exhibit this novel feature in a still more magnificent manner. The central window is erected by the congregation, and illustrates several of the parables. The other windows have been privately gifted to the church, and are intended as memorials of Scotch worthies and former pastors.

**Elgin.**—The Parochial Board of Elgin having offered by advertisement a premium of 10*l.* for the best design for laying out the new parochial cemetery ground, six plans were offered in competition—some from Edinburgh. The premium has been awarded to Mr. Thomas S. Hutcheon, C.E. The ground is to be enclosed with a high wall, and all around the spaces next the wall will be laid out as tombs. The main avenue, or principal entry, is by a large gateway on the north side, fronting Elgin; on each side of the roadway within that is to be a line of lime-trees, and the intersecting walks will be so arranged as to admit of a horse to each grave-stance. The walks are all to be bordered with odoriferous shrubs and flowers, and at intervals the cypresses and yew, with patches of other appropriate evergreens, will diversify and beautify the ground. In the centre of the site, a space is reserved for a chapel, with vaults underneath, &c.

#### MINTON TESTIMONIAL COMPETITION.

In reply to advertisement twenty-nine designs were sent in, and these were exhibited five days before the decision was arrived at. A sub-committee selected five, especially pointing out those having the mottoes of "To be or not to be," and "Sub Cruce," although they decidedly gave the preference to the former. The others selected were under the mottoes "Hope," a Geometric motto No. 11; and Stonehenge A: the three first were from architects residing out of the neighbourhood; the two last were from architects in the neighbourhood. The decision of the committee was all but unanimous in favour of "To be or not to be," which was found, on opening the letter, to be from Messrs. Pugin and Murray, of London and Coventry. The architects guarantee to carry out the design for the sum specified in the advertisement, namely, 2,500*l.* The style of the selected design is described to us as "Venetian Gothic."

#### THE SOCIETY OF ARTS EXAMINATIONS.

The one hundred and third anniversary of the Society of Arts, held last week, was full of interest and encouragement. Last year was the first in which the Society's examinations were thrown open to pupils of the evening classes of Mechanics' Institutions throughout the country. The results of these examinations have been very satisfactory: the number of competitors has increased four-fold in the second year of its trial, having mounted this year to upwards of 200. On the 24th ult. the conference of the delegates from the Mechanics' Institutions was held in the Adelphi. There are nearly 800 of these Institutions in the kingdom, 360 of which are in connection with the Society. Several important subjects were discussed at the conference. Mr. George Dawson addressed the meeting on a scheme of providing good

lectures at a penny per head for the audience. Proposals to request the trustees of the British Museum to permit portions of their duplicates to be taken by a professional teacher into the provinces, and to recommend the purchase of the Snijlages collection by the Government, were rejected. The meeting was unanimous in favour of confederal visits of the Society to Institutions in union with it.

The following are the names of the candidates to whom prizes were awarded at the recent examinations in London:—

*For General Excellence in the Examinations.*  
Thomas Brodribb ..... Crosby Hall Evening Classes.  
Henry Cullum ..... " "  
William Dawson ..... Boston Athenæum.  
William Evan Edwards ..... London Domestic Mission.  
Thomas Howard Evans ..... Crosby Hall Evening Classes.  
John William Fletcher ..... Derwentport Mechanics' Institute.  
Nathaniel Frankenstein ..... Clarendon House School, Lambeth.  
John Fretwell ..... Crosby Hall Evening Classes.  
Harry George ..... Bury St. Edmund's Commercial School.  
Daniel Leggett ..... London Mechanics' Institution.  
Frank Marshall ..... Crosby Hall Evening Classes.  
Joseph Mayhew ..... Bury St. Edmund's Commercial School.

Robert John Pearce ..... " "  
Edward Philip Ploymann ..... Philoæ Literary Institution.  
Joseph Benjamin Russell ..... Clarendon House School, Lambeth.  
Henry Gordon Shea ..... " "  
Charles Aspinall Wells ..... Leam's Mechanics' Institution.

*In Agriculture.*  
Joseph Pollard ..... Blithen Mechanics' Institution.  
*In Freehand Drawing.*  
Robert Slingsby, jun. .... Lincoln Mechanics' Institution.

Mr. B. Waterhouse Hawkins, the examiner in practical drawing, states, in his report, that candidate 149, the chief one recommended to notice, is apprenticed to a carpenter in Lincolnshire, and has continued constantly to work at his trade, having devoted all his leisure, part of his meals' time, and allowed holidays, to the study of drawing; and that although he could give but one hour to the mechanical drawing, he had employed it most satisfactorily by drawing each object as dictated. He had acquired the theory of perspective from books, testing and applying its rules to natural objects. An addition of useful books to the money prize was therefore suggested.

#### UNIVERSITY COLLEGE, LONDON.

DISTRIBUTION OF PRIZES TO THE STUDENTS IN ARCHITECTURE AND CONSTRUCTION FOR THE SESSION 1856-57.

On Wednesday, the 1st of July, the annual distribution of Prizes in arts took place, the Right Hon. Sir John Shaw Lefevre, Vice-Chancellor of the University of London, in the chair. We would call attention to the importance of these examinations to the young students in architecture. They are not mere matters of course; they are the result of a year's earnest, persevering study on the part of the student, who, during that period, must have passed through a methodical series of instruction from his professor (Donaldson), and accumulated a considerable mass of most useful information, available in his after professional practice. It is the best preparation for the competitive system, now often acted upon, as it prepares a young man for the searching trial through which he will have to go, and the several topics embraced in the examination of the district surveyor. The production of a prize or certificate, carried off by these intellectual exercises, produces a most favourable impression, as a guarantee that the individual has already done something meritorious to deserve such a distinction, and that he has gone through a certain degree of instruction and mental training.

*Architecture.*—*First Year.*—Prize and first certificate, Frederick Judge; second certificate, John S. Babb; third certificate, Walter Smith; fourth certificate, George Molesey.

*Second Year.*—Prize and first certificate, George Mills; second certificate, John Thomas Daintree.

*Construction.*—*First Year.*—Prize and first certificate, John S. Babb; second certificate, Walter Smith; third certificate, George Molesey.

*Second Year.*—Prize and first certificate, John T. Daintree; second certificate, George Mills.

#### EXCURSION OF THE LIVERPOOL ARCHITECTURAL SOCIETY.

On the 27th inst. the members of the Liverpool Architectural and Archaeological Society visited Ince Blundell and Sutton Church. Ince Blundell is being restored, under the direction of Mr. Scoles, and the *Local Daily Post* comments on the confusion which reigned there:—

"The prevalence of brick and mortar in the house certainly accounts in a great degree for the confusion and apparent neglect of these gems of art; but we could not but feel pained at seeing tapestries covering the stairs, and covered in turn with lime and brick dust, and the other annoying attendants on the builders' handicraft." Mr. Weld Blundell, the present possessor of Ince Blundell, explained every object of

interest within the building, and exhibited a knowledge of art, betokening an appreciation, which would go to prove that the fault is none of his that the treasures have not been better cared for. "From the mansion we were conducted to the Pantheon, a circular building, terminating in a dome of fine proportions, and well lighted from the top. Here, too, neglect and dust and dirt were painfully apparent. Scattered about—some on pedestals—others lying on the floor shattered and defaced, and others exhibiting tasteless attempts at restoration, were to be seen specimens of sculpture which at once attest the master hand. An incursion of a furious bull to the Pantheon has made accountable for much of the damage; and if we did not feel that high art would be desecrated by even a smile at such profanity, we could scarcely forbear laughter at beholding Jupiter bandaged as if for a compound fracture of the thigh; Minerva decorated with the order of the Garter for the same reason; and Apollo exhibiting a hand that certainly formed no part of the original sculptor's canon."

The party afterwards dined together, Mr. J. M. Hay, vice-president, in the chair, when there was some pleasant and pertinent speaking.

#### ARCHITECTURAL ASSOCIATION.

The following gentlemen have been elected to serve as officers for the ensuing session:—

President, Mr. G. J. Wigley, A.I.B.A.: Vice-President, Mr. J. Norton, A.I.B.A.: Honorary Treasurer, Mr. J. A. Bunker; Registrar, Mr. S. C. Capes, A.I.B.A.: Honorary Secretaries, Messrs. J. A. Bunker and B. A. C. Herring; Ordinary Members of Committee, Messrs. A. Allom, A.I.B.A. B. J. Benwell, S. C. Capes, A.I.B.A. J. H. Christian, R. Druce, A. Graham, S. B. Hewitt, G. W. Lloyd, E. Mallandaine, W. J. Penfold; Auditors, Messrs. C. Lockin, Curators, Messrs. B. J. Benwell and W. Hale. Class of Design.—President, Mr. R. N. Shaw; Honorary Secretaries and Curators, Messrs. C. T. Leves and E. Mallandaine.

#### LIGHT AND ACCESS.

**GLAYE V. HARDING.**—This case was tried at the Court of Exchequer, on Thursday, June 25, before the Chief Baron. The plaintiff is the tenant of Nos. 555 and 556, in New Oxford-street, and the defendants are the tenants of a building at the rear, which was originally intended for an arcade, and was opened as such by the projector. In a short time the arcade filled, and after a while the defendants entered upon the premises, which, together with the two approaches from New Oxford-street, they altered and converted into one extensive furniture shop and warehouse. The complaint of the plaintiff was that the defendants in carrying out their plans had interfered with certain rights of light and access to his houses acquired from the original and common lessee. The defendants denied the plaintiff's right of that portion of the complaint of the plaintiff which applied to the obstruction of light, and denied their liability in toto as to the residue. The cause, which turned in a great measure on the construction of the leases, occupied the greater portion of the day, and terminated in a verdict for the plaintiff, the jury awarding to him 25*l.* ultra the sum paid into court for obstruction of light, and 75*l.* by way of general damage.

#### ART-UNION OF LONDON.

Works selected by Prizeholders since June 6th.

*From the Royal Academy.*—Shades of Evening, H. J. Dollington, 120*l.*; Tynmouth, T. Webb, 75*l.*; Interior, A. Pross, 60*l.*; Crossing the Common, A. W. Williams, 35*l.*; Interior, G. Karl, 35*l.*; Druid's Circle, H. W. B. B. C. Hardy, 30*l.*; The Bride, A. J. Simmons, 30*l.*; A Quiet Part of the Thames, G. A. Williams, 30*l.*; Little Market-woman, E. J. Cobbett, 30*l.*; Little Gleaner, C. Richards, 25*l.*; "Ruse," A. G. Vignol, 25*l.*; F. C. of the Sea, J. R. Hardy, 25*l.*; In the Welsh Mountains, A. W. Williams, 25*l.*; Going to Market, N. O. Lupton, 25*l.*; On the Road to Langley, V. Cole, 21*l.*; A Group in Belgium, H. Weeks, jun. 20*l.*

*From the Royal Hibernian Academy.*—A Gipsy Party of Other Days, J. D. Wingfield, 20*l.*

*From the British Institution.*—Leith-hill, Surrey, G. Cole, 80*l.*; Lane Scene, October, T. J. Soper, 35*l.*; English Interior, D. W. Deane, 35*l.*; The Wood Pickers, T. Karl, 30*l.*; Blackberry Gatherers, G. Wells, 25*l.*; Mineral Spring, J. Collinson, 25*l.*; Dartmouth Castle, H. R. Taylor, 25*l.*; Farm Yard, G. Cole, 20*l.*; On the Meadows, J. Stark, 20*l.*; The Unexpected Visitor, A. J. Stark, 15*l.*

*From the Society of British Artists.*—Return from Jack Pining, J. Tennant, 150*l.*; Evening on the Lugwy, J. P. Pettitt, 75*l.*; Tern Carling, G. Cole, 65*l.*; A Village, A. F. Patten, 35*l.*; Rest on the Way, E. J. Cobbett, 35*l.*; Crossing the Brook, J. Hengall, 30*l.*; Una Hips del Sol, P. H. Calderon, 30*l.*; Old Farm House, Vale of Usk, A. Clint, 30*l.*; Puffin Island, J. B. Pyne, 30*l.*; The Mouse in Danger, V. Clator, 30*l.*; Scarborough Castle, J. Darby, 25*l.*; Scene on the Mendips, P. Pearson, 25*l.*; Day after the Gale, E. Nieman, 25*l.*; On the Beach in Hastings, W. Shayer, 25*l.*; A Mountain Spring, J. Hengall, 25*l.*; A Nook in the Conservatory, Miss L. Rimer, 25*l.*; A Rocking Chair, E. Cockburn, 25*l.*; Calm, E. A. Ingledale, 20*l.*; Crossing the Village Ford, A. F. Rolfe, 20*l.*

*From the National Institution.*—A Village in North Devon, H. B. Gray, 35*l.*; Fishermen's Children, Bell Smith, 35*l.*; On the Lugwy, W. Williams, 35*l.*; On the Coast of Genoa, H. B. Horley, 30*l.*; Haymaking, J. E. Meadows, 25*l.*; Evening on the Thames, G. A. Williams, 25*l.*; A Scene in Knowle-park, H. B. Gray, 20*l.*; Cottage Door, H. H. H. Horley, 20*l.*

*From the Water-Color Society.*—Bed of the Conway, W. G. Smith, 35*l.*; Children in the Wood, Mrs. H. Criddle, 25*l.*

*From the New Society of Painters in Water-Colours.*—At Ralausa, T. L. Rowland, 100*l.*; Artists' Life, J. Absolon, 26*l.* 6s.; Florence, W. Evans, 21*l.*



## STAINED GLASS.

**Halifax Parish Church.**—A memorial window has been erected in the Holdsworth Chapel of this church. The subject which fills the window is the "Raising of Lazarus," designed by Mr. Alfred Bell, and painted on glass by Mr. Laver, of London, from full-sized cartoons, under the superintendence of the artist. The moment chosen by Mr. Bell is when our Saviour beholds, stretched in the sepulchre, the emaciated form of Lazarus. On the right of the Saviour stands St. Peter. On the left, in the third light, are two figures of Martha and Mary. The subject is placed under canopies, and each light, beneath, is arched. Two other windows are in course of erection, in the lateral chapels of the choir, from the same artist, but carried out by different establishments.

**Bolton Parish Church.**—The committee appointed to erect a testimonial window in the parish church, Bolton, to commemorate the long services of the Rev. James Slade, as vicar of the parish, have commissioned Mr. John Hardman, of Birmingham, to execute the work, from a design selected by the committee.

**St. Mary's, Chester.**—An obituary window, the cost of which has been defrayed by voluntary subscriptions, has just been placed at the east end of St. Mary's Church, Chester, to the memory of the late rector, the Rev. W. H. Massie. The principal subject is our Saviour delivering His commission to the Apostles, just before His ascension. The figure of Christ occupies the centre, and the other compartments are filled with the eleven Apostles. Above the figures are angels holding a label. In the higher compartments are angels bearing legends inscribed with extracts from the "Te Deum," and along the foot of the window is the inscription. Mr. Wailes, of Newcastle-on-Tyne, was the artist employed.

## RECENT BUILDING PATENTS.\*

2688. JOHN ROCK DAY, and THOMAS RUTTER, Birmingham.—*Metallic Tile for Roofing or Covering Buildings.* Dated 14th November, 1856.—This invention consists of a rectangular sheet of metal, one of the edges on the longer side being turned up at right angles to the plane of the sheet. The opposite edge is turned up at right angles, and the extreme edge turned down again so as to form an inverted trough-like figure running along the side of the sheet. A series of inverted V formed or curved elevations are raised across the sheet of metal by stamping, pressing, or otherwise.—*Not proceeded with.*

2706. JOHN BILLING, Abingdon-street, Westminster.—*Chimneys.* Dated 15th November, 1856.—In constructing a stack of chimneys, the top of each chimney is made of a conical or pyramidal form, of straight or curved contour, with or without a level or inclined base or surface on each side of the top of the stack. A vertical partition is placed between each chimney-top to prevent the smoke from one chimney descending into an adjoining one.

2713. ALEXANDRE MARIE JOSEPH BECKMAN LILLE, France.—*Mechanical Bakery and Cookery.* Dated 17th November, 1856.—What is claimed as new in this invention is, in so far as it relates to ovens, the application of several moveable baking floors placed one above the other, revolving by the action of a common central vertical shaft, for the purpose of baking bread and other articles of food with the same fire; which oven may also heat apartments.

2727. WILLIAM BRINDLEY, Moorgate-street.—*Treatment and Application of Papier Mâché for Covering Floors, Roofs, and other like useful purposes.* Dated 19th November, 1856.—The patentee first prepares the papier mâché by putting it into a wire or perforated metal sieve or frame to obtain sheets of any required thickness, according to the usual process of manufacture, and ornament such sheets while in a soft state by embossing or figuring the surface by raising figures thereon, which is effected by means of metal, papier mâché, or other stencil plates or like means. Another preparation of sheets of papier mâché consists in covering one or both sides with fabrics made of wool, hair, or other suitable fibrous materials, previously perforated or otherwise; or such materials may be placed between two or more sheets of papier mâché, rendering such manufactured articles noiseless when trod on. Sheets of papier mâché may be corrugated by pressing them between corrugated metal or other moulds.

2638. RICHARD ARCHIBALD BROOMAN, Fleet-street, London.—*Cutting and Dressing Stone, Marble, and similar Materials.* A communication. Dated 8th November, 1856.—This invention relates to stone cutting and dressing machinery, the object being to imitate hand cutting as near as possible.

2662. JOSEPH ECCLES, Blackburn, Lancaster.—*Machinery for Making Bricks, Tiles, Pipes, and other Articles made of Plastic Materials.* Dated 12th November, 1856.—Firstly, this invention relates

to machines for making bricks acting on the principle of that for which a patent was granted to James MacHenry on or about the 20th day of July, 1852; and the present invention may be considered as supplemental to that for which a patent was granted to the patentee, No. 2283, and dated the 26th day of October, 1854, which was for making hollow bricks in machines acting on the principle of the one above referred to.

## PASSAGE OF DAMP THROUGH STONE WALLS.

In a paragraph of your last number relating to damp in walls, a question is put, how to make a wall of random stone waterproof. If the stone be so porous as to admit wet to go through it, perhaps the remedy you suggest may be the best, as it does not alter the aspect of the facing-work. But I rather think there is no other efficient remedy than rendering the outside surface with cement.\* Generally the wet penetrates through the mortar joints, and not at all through the stone. Often this arises from the mortar being bad or poor, or the joints not being well flushed up, and the great quantity of mortar incident to such walling. But I am of opinion that if the front of the beds and joints were set in good Portland cement, to the depth of a couple of inches or so, it would effectually prevent the entrance of wet. The too frequent absence of projecting strings is another cause of the penetration of wet; for the water, instead of being thrown by the throating or mouldings off the walls, runs down the whole face, and is sure to get into the joints, and thus be absorbed into the body of the work through to the inside face.

T. L. D.

## Books Received.

*Christian Memorials: being Working Drawings of Headstones and Tombstones, designed by Professional Members of the Worcester Diocesan Architectural Society.* London and Oxford: J. H. and J. Parker.

To aid in meeting the want expressed for characteristic designs for simple graveyard memorials, Messrs. Male, Truett, W. J. Hopkins, C. R. Clarke, and W. White have contributed examples which will be found available. The junction of metal and stone, as proposed by Mr. Clarke, is not advisable.

## VARIORUM.

"The Carpenter and Joiner's Assistant," of which Part I. is before us, published by Blackie and Son, of Edinburgh and London, is intended, according to the address, to supply to the workmen, in a compendious form, "A complete and practical course of instruction in the principles of carpentry and joinery, with a selection of examples of work actually executed to serve as illustrations of the state of these arts at the present time, and guides in preparing new designs." The plate showing the bent-timber roof of a shed at Marze, near Bayonne, by Col. Emy, is a valuable illustration.—The 23rd Part of "The Royal Gallery of Art" (Colnaghi, London; and Agnew, Manchester), contains "The Prison Group," by Bouvier, very well engraved by Devachez; a sparkling portrait, "The Beauty of Albano," by Riedel, engraved by Stocks; and Leitch's Landscape, "The Birth of Belphæbe and Amoretti," from Spenser, engraved by C. Cousen. The work fully maintains its excellent character.

## Miscellaneous.

**CONSECRATION OF A NEW IRON CHURCH IN LAMBETH.**—Another iron church was last week consecrated by the Bishop of Winchester. This church, which is of very considerable area, was manufactured and erected by Mr. S. Hemmings, the temporary and portable building manufacturer, of Old Ford, Bow. It is placed in William-street, Regent-street, Lambeth-ward.

**DRAWING IMPLEMENTS.**—Messrs. Stanly and Robinson, of Great Turnstile, have arranged a T-square, so as to be applicable for protracting angles and reversing angles, enabling the draughtsman to complete both sides of a roof, pediment, spire, or the horizontal lines of isometrical perspective, with once setting the instrument. It takes the reverse of the angle it is set to, by merely turning the square over. When the place is put close down on the cushion formed by the tongue, it may be used as an ordinary T-square. The construction being simple, it is sold at about the price of a common T-square, and will be found a useful addition to the draughtsman's "toolbox."

\* By adopting, during the construction, a brick lining, and covering the back of each stone with pitch, the necessity for so objectionable a remedy may be avoided.—Ed.

**TEACH THEM A TRADE.**—Dear Mr. Editor,—It is my province to read aloud many parts of your valuable paper. We were all much interested in your leading article on Reformatory Institutions (p. 313), which had reference to the employment of youth, particularly applying it to ragged boys who are destitute of regular employment. My father often refers with evident satisfaction to the time when he was bound as an apprentice to a mechanical trade, and laments that there are not now the same means of apprenticing youth to distinct branches of business that there were in his early days. It is, no doubt, well known to yourself, that owing to the system somewhat recent, of merging all the minor trades into the hands of a class now termed contractors, that there are not the same means, as heretofore, of training that there were when distinct branches of trade were recognised. If you would offer some suggestions on this subject, by which the leviathans could be induced to require their foremen to instruct a few apprentices to learn the different branches in their several departments, by which means respectable as well as ragged youths could obtain situations, it would be the means of effecting a very desirable object, and would, no doubt, excite attention amongst those who never appear backward in subscribing their funds to the support of many benevolent objects which are advocated in your paper; and this, in my opinion, would contribute more to the good of society, and to the promotion of their own real interests, than any contributions from their funds.—JULIA.

**ARCHITECTURAL PHOTOGRAPHIC ASSOCIATION.**—This association is now in shape, and the committee have issued a report setting forth their objects, showing what they hope to do, and inviting subscriptions. The report says,—“Basing their estimates upon the statements of individual photographers, your committee consider that at least three copies of the largest ordinary size—viz. 21 inches by 17 inches—might be issued for a guinea subscription, whereas one of them is now ordinarily sold for about 25s. Smaller sizes might be issued in considerably increased numbers, and they are informed that probably from thirty to forty stereoscopic views might be given for a similar subscription. But it is obvious that an association, having a large and definite number of copies to provide, almost all of which will be issued; having no vendor's profits to pay; and possessing many other advantages not accessible to individuals, may greatly enlarge the issue beyond the number which estimates upon present data would afford. An additional object to architects may probably be attained by enabling them to ascertain, not only the relative proportions, but also the actual sizes of buildings, and their details; as would be effected by simply measuring and noting the distance from the station of the instrument to a fixed point on the object.” The proposition has been received in a very cordial manner, and there seems no doubt as to its successful realization. Mr. Hesleth, of 95, Wimpole-street, is acting as honorary secretary.

**THE BRITISH ARCHEOLOGICAL ASSOCIATION.**—The Congress of the British Archeological Association will be opened at the Guildhall, Norwich, under the presidency of the Earl of Albemarle, F.R.S. August 24th, and be continued until the 29th inclusive. The entire week will be devoted to the examination of the antiquities of various portions of the city of Norwich and the county of Norfolk, embracing also a part of Suffolk. Excursions will be made to Caistor Castle, Burgh Castle, Great Yarmouth, Thetford Priory, Ely Cathedral, Lynn, Castle Rising Castle, Binham Priory, Walsingham Priory, Barham Hall, &c. The cathedrals of Norwich and Ely will be examined under the guidance of Mr. H. H. Barnell and Mr. C. E. Davis; the sculptures and monumental effigies, under the direction of Mr. J. R. Planché. The charters, deeds, and municipal documents, inspected and commented upon by Mr. W. H. Black. Papers relating to the various objects visited will, as far as circumstances permit, be read on the spot, and subjects will be discussed at the evening sittings and *conversations*. The members and visitors will be conducted over the Castle of Norwich by Mr. Robert Fitch; and parts of the city will be inspected under the direction of Mr. W. C. Ewing and Mr. Fitch. The remains of the Benedictine Priory and Convent, inspection of ancient houses, &c. at Great Yarmouth, will be subjected to the able guidance of Mr. Charles Palmer.

**QUERY AS TO PAINTS.**—A solution of yellow soap (with a certain portion of glycerine) is a preservative to red, yellow, and black paints, when ground in oil, and put into casks, as they acquire no improper hardness, and dry in a remarkable manner when laid on with the brush, without the use of the usual drying articles. This surprises me, that soap, which is so well known to be mixable with oily substances, or at least the alkali of which it is composed, has not already been brought into use in the composition of oil colours with glycerine.

J. B. N.

\* Selected from lists in the *Engineer* journal.



**THE SOANE MUSEUM, LINCOLN'S-INN-FIELDS.**—We are glad to hear that Mr. Wentworth Dilke has been elected the Society of Arts Trustee of the Soane Museum, and we commend to his attention an early consideration of the inquiry whether or not this important collection may be made of real value to the community in general, and architects in particular, as an educational institution. Under present arrangements the fact of its existence is gradually dropping out of men's memories. The time during which it can be examined should be extended, and ready means of access and study given.

**METROPOLITAN ASSOCIATION FOR IMPROVEMENT OF DWELLINGS.**—The thirteenth report of this society states that the average rate of mortality in their buildings at Albert-street, Albion-buildings, Ingestre-buildings, Nelson-square, Pancras-square, Pelham-street, Pleasant-row, Queen's-place, Metropolitan-chambers in Albert-street, and Soho-chambers, Old Compton-street, has this year been about one-eighth less than that of the rest of the metropolis; but, taking an average of the last three years, it has been little more than one-half. While the receipts from the buildings since December, 1847, have been 36,893*l.* 1*4s.* 8*d.* the bad debts have not amounted to 160*l.* The net profits for the year are stated to be 388*l.* 0*s.* 10*d.* more than last year, Nelson-square being better occupied; but the chambers for single men have been unprofitable. The society have erected sixteen cottages in Pelham-street, Mile-end New-town, and have resolved not to proceed with the dwellings for 100 families at Westminster. The Brighton branch proposes to pay a dividend of four per cent. again this year, and reorganize themselves under the Limited Liability Act. The Bristol branch has nearly completed accommodation for sixty-one families in all.

**INSTITUTION OF MECHANICAL ENGINEERS.**—The annual session of the members of this society, for the reading and discussion of papers upon engineering topics, commenced in the lecture theatre of the Mechanics' Institution, Manchester, on the 24th ult. under the presidency of Mr. Joseph Whitworth. A number of papers were read by the secretary. Of those that were to be read we have already given a list. The first paper, by Mr. William Fairbairn, was a description of a large tubular wrought-iron crane, which has recently been erected at Keyham Dockyard, Devonport. The crane is built on the principle of a tubular bridge, and the peculiar advantages of this mode of construction, according to Mr. Fairbairn, are the security and facility with which the greatest weight can be raised to the top of the jib without the slightest risk of failure. It would require a weight of 65 tons to break it, and with a weight of 20 tons the deflection of the jib is only 3*7*/<sub>8</sub> in.; its actual strength is thus, it is said, much greater than is ever required to be used. The Government has taken the initiative in adopting these cranes by having six erected in the New Keyham Docks at Devonport; two more have been ordered for Devonport, and one of colossal dimensions for Keyham.

**THE BOTHY SYSTEM IN SCOTLAND.**—The disgraceful accommodation still provided for farm servants on many farms in Scotland came under notice at a Justice of Peace Court at Montrose lately, in a charge of desertion of service brought against George Mason, farm servant, by Mr. John Smith, of Haughs of Kinnaird, the defence turning on the unfitness of the bothy and loft for human accommodation. The loft or sleeping-place for six men consisted of a corner of the stable-loft, 6 feet 6 inches in height, but sloping down on one side, 6 feet 6 inches in breadth, and 14 or 15 feet in length. The bothy proper, or day apartment, was circular, and about 12 or 13 feet in diameter, and 6 feet in height, and had no window or other opening for ventilation, except the door and the chimney. A conviction was not pressed for under the circumstances, and the justice adjourned the court till an inspection was made by impartial medical men.

**HOT-WATER APPARATUS.**—The Birmingham Patent Tube Company have introduced an improved description of stove and hot-water apparatus, by which one ordinary fire is made to heat several chambers. The heat is generated in a coil of tubing placed behind the grate; the water in the coil becoming warm, begins to ascend and follow the travel of the piping, transmitting the heat obtained in the coil through to any length of piping. The peculiarity in the grate consists in its having a double back, so that if it be required to increase the heat, the register is shut, and the heated air passes through the coil and up between the backs; while to decrease the heat, it is simply necessary to throw back the register, when the chamber between the backs is closed, and the heat ascends the chimney in the regular way. The improvement in the arrangement of the piping consists in having the ends open, whereby accidents become impossible, and the inconveniences generally attending the use of hot water for heating are removed. The apparatus may be usefully applied.

**NEW COUNTY-COURT, DUDLEY.**—A paragraph appeared in your pages some time since, stating that the contract was for 3,775*l.* instead of 3,400*l.*, as you had been informed. Allow me to state that the contract had nothing to do with the tenders as they were delivered. Your informant was perfectly correct when he stated the tenders as follows:—Nelson and Co. 3,400*l.*; Millward, 4,150*l.*; and Peacock, 4,260*l.* "Your informant" has been "informed" that a mistake was discovered in the lowest tender, notice of which was sent a week or two afterwards to the head quarters, and that being allowed, the contract was therefore for the larger amount. The respective amounts were well known two or three days after they were delivered, and the difference between the three well canvassed. It is not for your informant to impute motives, but the mistake, curiously enough, was some time in being found out. Here are the facts, as collected by—YOUR INFORMANT.

**STATUES.**—The inauguration of the bronze statue of James Watt, in front of the Royal Infirmary, Manchester, took place on the 26th ult. in presence of a great concourse of spectators, including most of the members of the Institution of Mechanical Engineers, who have been holding their annual conference at Manchester, and very appropriately went in a body to the inauguration of the statue of their late "Grand Master." Mr. Fairbairn, as chairman of the Statue Committee, handed over the property to the care of the mayor and corporation. Mr. John Steell, the Edinburgh sculptor, is employed in the formation of a statue of Allan Ramsay, in freestone, to be erected on the new terrace at Ramsay-gardens, Edinburgh. The block is 11 feet long by 4 feet square, and weighs between 15 and 16 tons. The figure will be 10 feet high, and the pedestal 18 feet. Ramsay will not appear either as a Greek or a Roman, but as a Bion of the last century. The O'Connell statue, by Hogan, for Limerick, has now reached that city, and has been placed on its pedestal at the Crescent, where it will be hoisted up and enclosed till the day of inauguration.

**COMPENSATORY SANITARY ARRANGEMENT.**—Near the Observatory of Washington, says the *Mechanics' Magazine*, there has existed, on the banks of the Potomac, a malarious swamp covered with parasitic herbs, the exhalations of which have, on many occasions, produced fever in the neighbourhood. It occurred to Lieutenant Maury (whose name is honourably known in connection with numerous public services of great merit) to oppose to these noxious exhalations plants possessing a considerable power of absorption. He accordingly had planted a quantity of the *helianthus grandiflorus*, and these have been completely successful in absorbing the dangerous gases, and altogether averting the fever visitation from the spot where it had periodically occurred for years.

**THE LATE MYSTERIOUS DEATHS NEAR WHITEHAVEN.**—On the 24th ult. the coroner's inquest into the circumstances attending the mysterious cases of poisoning at Cleator Moor, was brought to a close, after several adjournments. Professor Taylor, who had been sent down by the Home Secretary, presented an elaborate report. Our readers are aware that the cottages in which the mortality occurred are built upon a heap of slag, or *débris*, from the blast furnaces of the Whitehaven Hematite Iron Company. Dr. Taylor was of opinion, based on a series of experiments, that the deaths resulted from the generation of sulphuretted hydrogen in this slag. The jury found that "the cause of death in all these cases had arisen from the inhalation of sulphuretted hydrogen gas, generated from the slag underneath the houses in which they dwelt, and from the adjoining heap of the same material. In returning this verdict, the jury recommended that the houses at Bowthorpe-row, built upon the slag from the Hematite Company's works, should be sufficiently drained, and that all communication with the adjoining slag heap through the foundations be effectually cut off; and the jury are further of opinion that the houses so circumstanced cannot be safely occupied until this be done." It ought to be remembered, that although every dwelling is not erected on such a pestiferous basis, wherever there are stagnant drains or cesspools, there sulphuretted hydrogen is just as surely generated as if it arose from slag; indeed, much more surely, for the sulphur may remain in its sluggish prison, but in stagnant cesspools or insufficient drains there are no such fixatives as those which keep it down in slag; at least till moisture heat and rot the sulphur, and liberate the poisonous "hydra."

**OPENING OF ST. THOMAS'S CHURCH, WESTMINSTER-ROAD, LAMBETH.**—This newly-erected church was consecrated on the 24th ult. by the Bishop of Winchester. It was built from designs by Mr. Teulon, and contains three galleries, with accommodation for 1,033 persons, and 809 free seats. The estimated cost is 4,375*l.*; and that of the parsonage, 1,046*l.*; there remains a deficiency of 630*l.*

**THE SUPERINTENDING ARCHITECT'S REPORT: BOARD OF WORKS.**—We have received a communication from Mr. Mathews, denying the accuracy of the Superintending Architect's report, on his application for leave to build over a shop in Leicester-square (p. 354, ante), and discussing the justice of his decision, but we are unable to print it. He says in conclusion:—"Would it not be only fair for this officer, to give each applicant a copy of his report prior to laying it before the Metropolitan Board, that the reasons and opinions assumed or alleged may be contrasted with the facts in such case?" "We want a professional board to which to refer matters in dispute."

**EMERY PAPER.**—The *Moniteur Industriel* mentions an ingenious method of obtaining fine emery paper for polishing metals. Slips of paper coated with fresh starch-size are hung on ropes at different altitudes in a small room which is afterwards carefully closed. A quantity of fine emery is then blown in by means of a ventilator through an aperture left for the purpose, by which means a dense cloud of emery-dust fills the room, but only the finest particles rise in the air to a sufficient height for them to be deposited on the upper slips: those of the second row receive a somewhat coarser sort, and so on, while such particles as are too heavy, and therefore too coarse for delicate polish, fall to the ground at once. Thus emery-paper of different degrees of fineness may be obtained by a single operation, and sorted with mathematical certainty.

**EXPEDITIOUS POSTAL COMMUNICATION.**—SIR,—We get gas and water through pipes: why not our letters? I think it might thus be effected. Supposing there are twenty great thoroughfares, more or less, strictly forming radii, having for their centre the General Post-office: let iron tubes, in sections, quadrangular, be laid in the ordinary way under these lines of route, and as nearly as possible in a right line, and all meeting at the great postal centre. Each line of tube must be supplied with an "endless band," but of rather curious configuration, the sides being raised to reach the top of the tube, and the under surface supplied with a number of small wheels, to counteract friction. This "everlasting band" would form a continuous carriage stretching under our principal streets, and receiving letters, while in motion, the moment after leaving the hand of the poster, at the letter-box placed above the "band." The motion would be communicated by carrying the band over drums, connected with steam-machinery. The apparatus already briefly described provides for the collection of letters dropped over the band through pillar letter-boxes. The distribution of the letters might be performed (to stations) simultaneously, and by the same band. At convenient points on each line of tube let subterranean chambers be formed, through which the tube might pass, which, being partly open, would admit of parcels of letters being taken off the moving band for distribution in the vicinity. Parcels of letters would be placed upon, and carried by, the band in the following manner: the band passing over a drum of large diameter at the General Post-office, would give ample convenience for the clerks to place parcels of letters upon the retiring portion of the band, which would carry them upon its back until taken off at the desired stations.—O. H. H.

**SLAUGHTER-HOUSES.**—I was glad to see your remarks on the cruelty shown to animals; but you have only given a very faint outline of the barbarity that is practised in slaughter-houses. I am in the habit of working at a slaughter-house and the adjoining building, and I can assure you the cruelty I have witnessed has made me shudder. I am sure many would not allow real to come to their tables if they knew half the torture the poor animal had suffered. I will now give you the particulars how the calves are murdered, for that is the correct name. \* \* \* There is a great deal of cruelty practised in the slaughtering of sheep, &c. I do hope you will do all in your power to expose the horrid work. I am fearful of giving my name, as my work would be at stake, so I will subscribe myself

A JOBBING CARPENTER.

**ROAD WATERING CARRIAGES ON RAILWAYS.**—I have heard lately many complaints from travellers of the dusty state of several of the railways, and that on many roads dust forces its way into the closed carriages of the first-class kind. I conceive that this nuisance might be easily remedied by attaching a watering carriage, or carriages, to each train,—or, perhaps, a special train of water carriages might pass from one end of a line to the other at an early hour in the morning, before the ordinary trains of the day begin their journeys. At any rate, some remedy should be found for the annoyance: the expense could not be very great, and if it were, is of much less moment than public comfort and convenience.

SUBSIDIARY.



# The Builder.

Vol. XV.—No. 753.



THE germ of the modern railway system struck root and sprang up in our northern colliery districts upwards of 200 years since. Wooden rails were first laid down by a Mr. Beaumont, near Newcastle, in 1602. They were found so useful that they rapidly spread throughout the colliery districts; and in 1745 General Cope made use of a line near Prestonpans, in Scotland. An intelligent French traveller, named St. Fond, who visited Newcastle in 1791, speaks in terms of great admiration of the colliery waggon-ways of that place and time, and urges them on the attention of his countrymen. Improvements had been gradually made in them; and in 1776 a cast-iron railway, nailed to wooden sleepers, was laid down at the Duke of Norfolk's colliery, near Sheffield, by Mr. John Curr, whose son claims for him the invention of the cast-iron railway; but the first iron lines are believed to have been laid down at Whitehaven as early as 1733. Mr. Curr must have had few predecessors, however; for so new and unprecedented did his iron way appear to the labouring people connected with the colliery, that, believing it in their ignorance to be somehow injurious to their interests, they kicked up a riot, tore up the rails, and poor Mr. Curr had to fly into a wood, where he hid himself for three days to escape their fury. In 1800 Mr. Benjamin Outram, of Little Eton, in Derbyshire, used stone props in place of timber for supporting the ends and joinings of the rails, and such roads, according to Mr. Smiles, in his very interesting volume on "The Life of George Stephenson," became at length known as "tram-roads," from a contraction of the word "Outram." There seems to be some little difficulty in this statement, however, through which we cannot clearly see our way. The word tram is one connected with the carriage of goods in more ways than one: we have the trams or shafts of a cart in Scotland; coal-waggons themselves have long been known as trams in some parts; and thus the track-plates or rails of wood laid to receive these were called tram-ways. From the time of Outram, at all events, tram-roads or railways rapidly extended, till at length they were generally adopted in the mining districts, and canal proprietors looked askance on them with a sinister interest, as "snakes in the grass," the Duke of Bridgewater remarking, when congratulated by Lord Kenyon on the successful issue of his inland "navigation" scheme, "Yes, we may do well enough if we can steer clear of these deuced tram-roads: there's mischief in them."

Improvement, thus far, was confined almost entirely to the road. Railway waggons still continued to be drawn by horses, the power of which, however, had been thus greatly economized. Railway improvement had almost reached its limits unless mechanical agency could be made applicable to the purpose of railway traction, and inventors and projectors were not long wanting. One suggested sails to drive the waggons along the line before the wind, much as it now does a train occasionally at no little speed without any sails at all. But the

most favourite project was the application of steam power on the high pressure principle to railway traction, and not only to railway traction, but to traction on the common road without rails,—a still more favourite and early project. Savery proposed a method of propelling carriages along ordinary roads, and the subject was shortly after (in 1759) suggested to James Watt by Dr. Robinson, at Glasgow College, and Watt even included it in the specification of his patent of 1769. About the same time, one Moore, a London linendraper, took out a patent for moving wheel-carriages by steam, but it was not till 1763 that the first actual model of a steam-carriage is recorded, and that was constructed by a Frenchman named Cugnot, who afterwards built an engine on the same model for the French king,—but its very power led to its suppression, for when set in motion it projected itself onward with such force that it threw over a wall and was at once set down as too dangerous an apparatus for further use. This identical engine is now in the *Conservatoire des Arts et Métiers*. In 1772, an American, named Oliver Evans, invented a steam carriage for common roads, but with no practical result. In 1786, William Symington, the steam-boat inventor, had a working model of a steam carriage constructed, and he exhibited it at Edinburgh; but the roads there were far too bad at that time to enable him to do anything with it. The first English model of a steam carriage was made in 1784, by William Murdoch, the assistant of James Watt. It was on the high-pressure principle, and went on three wheels, by help of a spirit-lamp, and though only a foot high it ran away from its inventor one night, and almost terrified the pastor of the parish out of his senses, the rev. gentleman imagining it to be a fiery "imp of Satan." Trevethick, an eccentric genius, a pupil of Murdoch's, followed, with his steam carriage for common roads. Coleridge narrates how Trevethick's engine, too, while tearing away like mad along the road to Plymouth, breaking into gentlemen's gardens, and with other playful tricks by the way, so astonished and horrified a tollman that he threw open his toll-bar like magic, feeling assured that he had the Devil to deal with, and refused to touch any of the red-hot coins which he doubtless imagined his strange customer was about to offer him. The management of these common road steamers appears to have long been a difficult point; and it was not unusual for such a machine to land its passengers safely in the middle of a hedge by the wayside, half-way home to its own proper terminus. Trevethick's engine was exhibited in London; but he wanted perseverance, and, indeed, was very probably then on a wrong scent, since not even yet have such carriages for common roads proved successful; but Trevethick did endeavour to apply the steam carriage to the railway, and constructed a special engine, in 1804, for the purpose, which actually dragged ten tons of bar iron in waggons at the rate of five miles an hour; and, had he persevered, the locomotive might have had another history than it was destined to have; for he was on the verge of a great discovery. As it was, all this projector's endeavours turned out to be practically a failure, and he abandoned the locomotive for more promising schemes.

The final success of the locomotive was much retarded by an imaginary difficulty,—namely, the erroneous supposition that if any heavy weight were placed behind the engine, the "grip" or "bite" of the smooth wheels of the locomotive upon the equally smooth iron rail must necessarily be so slight that the wheels would slip round upon the rail itself, and consequently that the machine would not make any progress. The wheels of Trevethick's engine were provided with rough projections, in order to obviate this supposed difficulty, and probably

this was one of the main reasons of his want of sufficient success to induce him to persevere.

The first locomotive line of railway was one between Leeds and the Middleton collieries. On this line, a length of three miles and a half, locomotives, invented by Mr. Blenkinsop, of Leeds, began to run in 1812, and continued to do so for many years. But still the erroneous idea prevailed; for Blenkinsop's engines had toothed wheels which ran in a racked or toothed rail. To obviate the same imaginary difficulty, other patents were taken out; one for a chain to extend along the line, with a twist of it round a barrel-wheel on the engine; another for a locomotive to go upon legs!

Mr. Blackett, of Wylam, made persevering efforts to employ the locomotive of Trevethick, and others, on the Wylam waggon-way, one of the oldest in the north of England. Now, it so happened that an old colliery engine-tender, of the name of Stephenson, lived in a small cottage by the side of this tramway, and that the man, his son, who was destined to mature the locomotive and the rail, and to become the true "railway king," was born in this same cottage at the fitting time, so as to have the work of his life set, as it were, before his very eyes, so soon as he had become capable of benefiting by the experiments of Mr. Blackett. Had this latter gentleman experimented only a few years sooner, or had he not begun till a few years later, in all probability the railway system would have still remained to be elaborated. It is a singular fact, too, as we may here observe, that at one period of the life of the chosen man on whom so much of the future progress of his country depended, he was on the eve of starting for the United States as an emigrant, so small did his prospect of good fortune in his native country appear. This was a crisis in the fate not only of an individual, but of a country, which stands out in curious coincidence with a similar crisis in the life of another individual with whom Stephenson may be happily compared, namely, in the fate of James Watt, as well as of his native country too, at that period; for Watt, as we not long since noted, was at one time on the eve of emigrating to Russia, whither the long-headed Russians were very anxious to attract such a prize.

The first engine placed on the Wylam waggon-way was one of Trevethick's, in 1812. When the cumbrous machine was set in motion, it would not move an inch,—at least till it flew all to pieces. The next was built by Mr. Blackett himself, and it proved more successful than its predecessor. Still it was on the cog-wheeled principle, and the way laid down for it was racked. It crept along at a snail's pace, and was constantly breaking the cast-iron plates of the railway. At length it became so cranky that horses were regularly sent along with it to pull it out of the scrapes into which it was constantly getting, and at last it was voted "a perfect plague," and was dismissed the service. Before he placed another locomotive on his tramway, Mr. Blackett, by means of a frame and windlass, proved that the adhesion of wheels on smooth rails was quite sufficient to enable him to work a locomotive without slipping. Thus was the fallacy which had heretofore prevailed on this subject completely dissipated, and rack rails, toothed wheels, endless chains, and legs, were all alike proved to be unnecessary for the efficient traction of loaded waggons upon a moderately level road.

George Stephenson now comes on the railway stage with his improvements. He had frequently witnessed Mr. Blackett's experiments whilst tending his colliery engine at Killingworth, near Wylam, and he made himself intimately acquainted, not only with the merits and the defects of the locomotives there at work, but also of those at Leeds, which were of a much superior description. Stephenson had

\* "The Life of George Stephenson, Railway Engineer," by Samuel Smiles, with Portrait, John Murray, Albemarle-street, 1857.



already made himself respected by his employer, Lord Ravensworth, and, though a humble engine-man, he had frequent conversations with his lordship, and at length persuaded him to supply the means of forming a locomotive, which, with great difficulty, from the want of fitting mechanics at that time, he at length effected, following to some extent the plan of Blenkinsop. It proved to be the most successful engine yet constructed, and was capable of drawing eight loaded carriages of thirty tons weight at the rate of about four miles an hour. "Blutcher" was, nevertheless, a cumbersome and clumsy machine, and the result was anything but decisive, when Stephenson at this juncture applied the steam-blast, and thus at once doubled the power of the engine. Without the steam-blast, by which the intensity of combustion was kept up to the highest point, and the evolution of steam thus rapidly effected, high rates of speed by means of the combustion of coke could not have been attained, and locomotives might still have been dragging themselves unwillingly along at the rate of not more than five or six miles an hour. It was by means of the steam-blast, in conjunction with the multitubular boiler, that he afterwards secured the triumph of the locomotive on the opening of the Manchester and Liverpool railway. Numerous other defects were remedied in subsequent constructions, and, in 1815, Mr. Stephenson, by dint of patient and persevering labour,—by careful observation of the works of others, and never neglecting to avail himself of their suggestions,—had succeeded in manufacturing an engine which included the following important improvements on all previous attempts, namely,—simple and direct communication between the cylinder and the wheels rolling upon the rails; joint adhesion of all the wheels attained by the use of horizontal connecting rods; and finally a beautiful method of exciting the combustion of the fuel by employing the waste steam which had formerly been allowed uselessly to escape into the air. "Although many improvements in detail," says Mr. Smiles, "were afterwards introduced in the locomotive by Mr. Stephenson himself, as well as by his equally distinguished son, it is perhaps not too much to say that this engine, as a mechanical contrivance, contained the germ of all that has since been effected. It may in fact be regarded as the type of the present locomotive engine."

Our immediate purpose having been simply to show, in a brief sketch, based on Mr. Smiles's very interesting volume, how the locomotive and the rail came together, and from what beginnings the more matured system was developed, we shall not lengthen our sketch by any further recital of what followed; all the more prominent subsequent procedure being more familiar to our readers and the public in general than what preceded the first manifestation of the public astonishment when incredulity was no longer possible, and men of science and mark became ashamed of their false predictions.

To all who desire to know what followed, as well as, far more fully, what preceded the grand opening of the Liverpool and Manchester, we can only say,—read Mr. Smiles's excellent book, and they will not only be satisfied in that respect, but amused and instructed in many others.

#### THE DESIGNS FOR THE GOVERNMENT OFFICES.\*

In our last article, we referred to the principal Gothic designs—to the authors of which, premiums have been awarded—and adverted to some interesting questions which were connected with them. We also mentioned what was the general scope of the design No. 116. The author of this work, as it will have been seen, like all those who have received premiums—unless Mr. Hastings, the author of one of the block

plans, should prove an exception—viewed the three subjects announced for competition, as not admitting of the separation pre-supposed, and which, by the awards, has been assumed as though really kept up. Mr. Scott, indeed, considers that the *general street plan* and the *block plan* of the Offices, have not necessarily any connection with one another; but he says the *block plan* and the detailed designs for the *Foreign-office* and the *War-office*, manifestly ought to be the creation of one mind. The *street plan*, he thinks, might readily be prepared without reference to any particular plan of the Offices. This is going on the assumption that the site of Westminster-bridge is, as he contemplates it, retained; but the question of the bridges really opened the whole extensive problem. The level of the embankment, also, needed to be considered. Mr. Scott, however, prepared all the drawings required, and has been awarded a premium (of 300*l.*) ostensibly only for the *Foreign-office*. His two Offices are in separate buildings, or joined only by archways; but one of the two would hardly harmonise with the work of another architect better than would the design by Mr. Dwyer (126), for the *War-office*, which is merely one portion of a general building. Leaving the question of the awards for any separate notice that may be called for—recollecting, however, that we have already spoken at some length of the mistakes which have led to the difficulties of the adjudication—we proceed with our notes.

In the general plan in design No. 116, the three bridges are provided; and as to Westminster-bridge, after giving the arguments for the present site, the author "cannot conceive of a bridge better placed." Besides the Charing-cross-bridge, he retains Hungerford-bridge as a foot-bridge, properly holding that if the two bridges would be near together, that would be much better than placing the new bridge wrongly. The principal new line of street which he provides, extends from Buckingham Palace to the bend of Victoria-street, and then takes in Great College-street, in preference to following the direct line to the Victoria Tower, which, as in some of the plans, would intersect the Abbey precincts. His line he thinks, in fact just as good as the other. He would then open out and restore the Chapter House, and having removed the houses in Abingdon-street, would form a wide double cloister—to receive the incongruous monuments of Westminster Abbey, and new monuments of statesmen—extending to the corner of College-street, and returning round the College-gardens to the Dormitory of the Westminster-school. He advocates in terms which should receive attentive consideration, the retention of the site of St. Margaret's Church. He anticipates the removal of the Law Courts;—but, at least, next Bridge-street, thinks Sir Charles Barry's work should not be completed quite as proposed. In the general arrangement of the Offices he would leave the Board of Trade, and would add to it at the back, but has laid out the whole remaining ground, providing for one grand arrangement of Gothic buildings. With us, he remarks on the obvious incompleteness of the site without the ground now occupied by Richmond-terrace. On the river side he has a grand public terrace entered under lofty towers, and having a covered cloister from end to end. To Parliament-street he would give a width of 150 feet, placing along the centre a paved space, somewhat like that in the *Unter den Linden* at Berlin, on which might be raised statues; and at the southern extremity, at a centre from which the lines of different roads would diverge, he would erect a monument to eminent statesmen. The principal design A, has the buildings of the Offices together surrounding an oblong court. The design B exhibits a modified arrangement, with the *War-office* plan turned round, so as to have a court and screen of arches next Parliament-street. The design A is that which the author prefers; but the screen is one of the best features in the designs. The general arrangement in each of the plans—whether for the *War-office* or the *Foreign-office*, is similar. An entrance in the centre leads to a staircase-hall, square at the ground-level. In the glazed covering, a clever attempt is made to adapt the dome to Gothic architecture. The corridors which lead out, are in some cases lighted from internal courts, and in a few others by borrowed lights. These lights, in the form of ornamental window-tracery, fill in the arches along the upper part of the corridors—which are groined. In some cases, mezzanine stories are provided, both stories approached from the same corridor,—the upper story, by means of a small gallery. In the design B, besides the screen of arches, there is an arcade on the remaining sides of the quadrangle. In the decorative design, all the external and internal features are studied with care, and display both novelty and beauty of ornament: but the general effect in the *War-office*, is, we think, impaired by the form and proportion of the truncated roof to the centre tower; and it is open to consideration whether the wings in design B, which

are symmetrical with each other, should not also be symmetrical as to the parts of themselves; as at present they have the appearance which is suited to small buildings of a different class. The arches generally have the pointed form, as most suitable to a building of the first class: the heads, however, are filled in generally, and are enriched or pierced. Crocketed gables; parapets corbelled out, and made to extend across the gables; square and octagonal angle-turrets and pinnacles; wide window openings, with shafts, and balconies; statues in the front, under canopies, and borne by shafts; broad piers, with ornamental impost mouldings; occasional square-headed windows, with a central shaft, and ornamented chamfering to the jambs; surface enrichment in diaper, and scroll-work; coloured voussours to arches; pateras, and foliated spandrels; and the coloured materials, in general use, as marble in shafts; with a considerable amount of carved work, are amongst the details deserving of examination. Buttresses are systematically avoided as parts of the design.

Within the courts there are entrances with semi-circular arches; and some of the porches have marked Italian Gothic features. The principal doorway to the *Foreign-office* is almost the only part of the design which has any ecclesiastical character. Staircases are placed in octagonal spire-capped portions of the building, with the stepped or raking lines showing as external decoration. One detail drawing, with the internal finishings, would claim careful inspection, on account of the successful application of novel and rich decorations on good structural principles. As to the use of coloured materials, with the exception of the granite and serpentine shafts, or similar small features, the author of the design, with proper judgment, contemplates only slight shades of difference. The best brown Portland-stone, the Anston-stone, or what he would much prefer, the Mansfield Woodhouse, first used at the Houses of Parliament, where it has stood the best; and the Mansfield red stone—an excellent material, as shown by the manner in which it has endured in the pavement in Trafalgar-square—are what he has named.

Of the drawings, under the number 129—hung opposite to those last noticed, and already referred to—some further particulars may be given in this place. They bear the motto, "A vaillants cœurs rien impossible," and include a general plan and block-plan, and a design for the *War-office* and the *Foreign-office* in one building. There are twenty-two drawings, elaborately shaded as mentioned, and amongst them are several perspective views and details at large. To the author, Mr. Street, has been awarded one of the premiums of 100*l.*; this, as it is set forth, is given for the *Foreign Department*. It may be noticed that the Gothic designs generally have been put under the same division; the only exception being the design, No. 140, by Messrs. Pritchard and Seddon, one equally comprehensive—as to the two offices—and which stands in the list of designs for the *War-office*. In his general plan, the author of No. 129 has preserved the site of Westminster-bridge, adding a bridge at Charing Cross, with an approach obtained by the removal of Northumberland House; and he also shows that he would remove Dover House, to get a new entrance to the park, and houses opposite in Whitehall to form a garden. But the design having been prepared in the manner of protest against the choice of any other style than the Gothic, its author has given his chief attention to the two principal offices. Like others, the authors of Gothic designs which have been chosen, and like some who are not in the list, he has, however, felt the necessity of considerable modification in the style, to render it consistent with modern wants. Indeed, the identity of the opinions which are put forth in reports is sometimes very remarkable.

The distinctive character of No. 129 arises from its apparent greater admission of irregularity as consistent with, if not serving the general effect. The *War-office*, in the front next Parliament-street, has a recessed centre and a fore-court enclosed by a wall, and has the entrance at one side. The west front of the *Foreign-office*, where is the residence, has a similar plan with an inclosing railing, and the addition of a loggia of arches to the entrance. A groined passage traverses the two Offices from east to west, whence access would be had to all the staircases and corridors throughout the buildings. Gateways, and a carriage-way from north to south across the quadrangle of the *War-office*, are also provided. The rooms are arranged in all cases, on both sides of corridors, which run the full length of the wings. The rooms for the Secretaries of State are placed, in each Office, as near the centre as possible: that for the Minister of War has access by means of an open corridor or cloister (as well as by the other corridors) to all parts of the buildings. The entrance to the *Foreign Minister's* residence for the official receptions, is in the centre of the park front, where there is a large hall communicating with both the private

\* See p. 370, ante.



portion of the residence and with the state dining-room. Two staircases lead to the suite of reception-rooms, which run from north to south the full length, and return along the other fronts—where they are less in height than on the west, to allow of bed-rooms over them. A courtyard for stables is obtained between the residence and the eastern wing of the Office—entered from Charles-street. A central tower, square on plan, with pyramidal and lantern capping, is shown attached to the War-office. It would be used as a ventilating and smoke-conducting shaft.

The ground-story is raised eight feet, so that the basement is lighted without areas; and generally, height has been sought for, as conducive to effect,—the author supposing that the limitation to three stories must have been felt by most architects as a serious impediment in the way of a really grand pile of buildings. He avails himself, however, of what he says, a Gothic building, as well as our climate, requires—namely, a steep roof. In this he has generally avoided gable-ends—following the continental rather than the English principle—on the ground that, with many gables, it is difficult to secure the “repose” required in such a building as that projected,—whilst in old English works, the scale being generally less, he says “it is more possible to think of the picturesque than of the grand in effect, which it need hardly be said would be wrong in this case.” The “picturesque,” however, we have said, it was not our opinion that he had escaped. Much of the effect which we referred to, results verily from the extent of the variation in the features, such as windows; and which variation the author believes his design shows “with not the less, an appearance of general uniformity. The windows are not placed over one another, and are, he says, “varied according to the use and size of the several rooms;” whilst, “the entrance is placed where most convenient; and, in short, there is, with a general regularity of effect and outline, a high degree of natural and justifiable irregularity in almost all the parts.” “This,” he observes, “it should be remembered, is the invariable practice of the best Gothic architects;” whilst the “neglect of it,” he considers “is the one great blot on the New Houses of Parliament, as on all revivals of Classic and Renaissance architecture.” Many of the windows have a Venetian character, and the majority are of continental origin. Especially, like the author of No. 116, he adopts the shaft—often of coloured marbles—in place of the mullion; he owns that mistakes have been made in modern Gothic houses, as in the provision of openings too small for the admission of light, and he provides wide openings with sashes and plate glass. The contrivances to reconcile the character of decoration with modern requirements display considerable skill. The uses of the apartments being kept in view in the design of the windows, a number of them of similar character in several cases range together; and the upper story becomes an arcade. Some of the turrets and pinnacles corbelled out at angles, are the least pleasing portions of the design. One of the lateral fronts has a recessed centre with a screen of arches somewhat similar to that mentioned in the notice of No. 116.

#### THE AWARD OF THE JUDGES ON THE DESIGNS FOR GOVERNMENT OFFICES.

The Report of the Judges appointed to make the selection is not yet in the hands of members of the Houses of Parliament. It will be accompanied with two large plans, and these have caused the delay. The judges are understood to say in their report:—

“In examining the designs, which are 218 in number, and which embraced nearly 2,000 drawings, our first object was to ascertain how far those competitors whom we deemed most worthy of notice had or had not sufficiently complied with the instructions issued by her Majesty’s Government. In their detailed examination we obtained the assistance of two gentlemen of great experience and of high professional character, namely, Mr. Angell and Mr. Pownall; and we are anxious to bear our testimony to the valuable services of these gentlemen. Of the block plans, we desire to remark that we would not be supposed to approve of all the extensive alterations and demolitions recommended in the selected designs, which we, nevertheless, believe to contain many valuable suggestions.

“With regard to the design for the Foreign and War Departments, a difficulty presented itself, in consequence of several of the competitors having sent in one building more or less unfitted for sub-division for both the public offices, for which distinct prizes have to be awarded, whilst others have either confined their efforts to one of the buildings, or have given separate designs for each. It will be evident that those united designs compete under considerable

disadvantage with the single designs, and that unless a united design should be superior in both departments to all its single competitors, it could not receive a prize because one portion of it could hardly be executed without the other. We have been obliged to meet this difficulty by treating the lower prizes as marks of distinction for merit rather than as indicating special selection of the designs as fitted for separate construction. We desire to express our great admiration of the unprecedented collection of designs submitted to us, of the artistic genius, manual skill, and patient labour which have combined to produce it, as well as of the eminent ability which so many of the competitors have displayed in dealing with internal arrangement, and in adapting the required accommodation to a definite area of ground, and to record our opinion that the collection reflects the highest credit upon the architects, foreign and English, who have so liberally responded to your appeal (the Chief Commissioner of Works). We cannot conclude this report without expressing our regret at the loss of the assistance of our colleague and chairman, the Duke of Buccleuch, who, being unexpectedly called away from London by business of pressing importance, was compelled to resign his seat amongst us at our second meeting, and almost at the close, when, as we believed, only one more day would be required to complete our task, a domestic calamity of the most grievous kind befel our colleague, Lord Eversley, and deprived us of his most valuable co-operation in our final awards.” The report is signed by Lord Stanhope, Mr. Stirling, Mr. Roberts, Mr. Brunel, and Mr. William Burn.

SIR,—The following information received from a friend at head-quarters is at your service:—

The judges went carefully through every design, and gave the matter great care and consideration; Messrs. Burn and Brunel being at the Hall as early as six o’clock in the morning. They measured every plan, and after several prunings reduced the number to twenty, as deserving of more consideration. All the other designs were then picked up and put on one side, and the twenty selected re-hung, and ultimately, the seventeen premiums given, as already published, leaving the following:—No. 64, by Mr. John Philpot Jones; No. 112, by Mr. Robert Kerr; No. 144, by Mr. Cockerell.

All the authors of the above twenty sent in for more than one design, but the judges decided to give no competitor more than one premium, so their second design was put by.

There were only six block plans selected; the three that have got prizes, and one by Mr. G. G. Scott, one by Mr. J. P. Jones, and a third whose author’s name I have forgotten. I enclose my card, and am,

A LOOKER ON.

#### THE GROTTOS OF ST. BENEDICT AT SUBIACO, AND ITS MONASTIC INSTITUTIONS.

In our report of the proceedings at the Ordinary General Meeting of the Institute of Architects, on the 18th of May, it was stated that Mr. Digby Wyatt made some observations on the Grotto of St. Benedict, at St. Subiaco, and its Monastic Institutions, to which we promised to refer on another occasion. He commenced by reminding his hearers that St. Benedict was as completely the patriarch of the Western Monks, and the founder of all the properly organized monastic systems of Europe, as St. Paul, the proto-hermit, St. Anthony, St. Basil, and St. Jerome, had been the precursors of those of Africa and Asia previous to his advent. During the first three centuries of the Christian era, numbers of the persecuted occupants of the Catacombs fled to the rocky fastnesses skirting the Campagna of Rome, and there led lives of seclusion analogous to those of the Fathers of the Desert, and many such still dwelt in similar shelter, and in more or less complete isolation, in the days of St. Benedict, nearly two hundred years after the adoption of Christianity by Constantine. It remained, however, for that worthy saint to introduce the bond of union and of common charity among such recluses, thereby insinuating the system of mutual protection and good offices which lent that power to the regular clergy which enabled them to make head against the turbulence of a wild and rude age, and ultimately to attain an unprecedented influence over men and manners, history, literature, and faith, throughout the whole of the Middle Ages.

The monasteries of Subiaco, Monte Cassino, San Calisto at Rome, and numerous others in Italy, and other countries of Western Europe attest, at the present day, the extensive influence exercised by the Benedictine order,—the proverbial protectors of such learning and science as were compatible with the rude energies of Mediæval life. From the great fountain head numerous branches germinated in later times. St. Bruno (1030-1101) became the founder of the Carthusians, and St. Bernard (born 1091) of the Cis-

tercians, which latter body possessed Fountains Abbey (so worthily preserved through the zeal of the noble President of the Institute), and many of the fairest domains in this our native country.

The Grandmontines, Clugnians, and Premonstratensians, lived also under the rule of St. Benedict, though under a somewhat different discipline. In this country the possessions of the Benedictines were immense. With the exception of Carlisle they owned all the cathedral priories, and most of the richest abbeys. Even at the period of the dissolution of monasteries, Bishop Tanner, in his “Notitia,” enumerates no less than 186 important religious establishments still in their hands, despite the active competition which existed between them and the Dominican and Franciscan Orders. Until the end of the twelfth and the beginning of the thirteenth centuries, when the founders of these two last-named orders flourished, the Benedictines were the presiding rulers over architectural and all other art, and it can surely, therefore, be no uninteresting duty for us to trace out the vestiges they have left of their skill and taste, profusely scattered around the spot hallowed beyond measure in their hearts by the unquestionable presence and love of their admirable founder.

With the age of St. Francis, great changes of every kind in faith, manners, and art, were introduced, and one of the most interesting studies of the comparative anatomy of architecture which can be made is between the great monastic establishments founded by him at Assisi, and that established at Subiaco by St. Benedict. St. Francis was born in 1182, at the former place, and in its church Giotto has represented the most remarkable events in his life, in a well-known series of fresco paintings. An analogous series of frescoes, representing the leading incidents of St. Benedict’s life, and to which we shall hereafter refer, is to be met with at Subiaco.

This romantic spot, venerated by the Catholic as a shrine, and by the artist as one of the loveliest spots upon the face of the earth, is grandly situated in a gorge of the mountains, about forty miles eastward of Rome. Its name is a corruption of Subiacum, derived from its position below the artificial lakes formed by Nero in the grounds attached to his villa, by damming up the course of the Anio, a stream which ultimately falls into the Tiber above Rome. It was in this splendid villa that the scene so tersely and yet vividly depicted by Tacitus took place, when the lightning from Heaven dashed the golden cup from the tyrant’s hand as he was carousing, and yet spared his execrable life. These artificial lakes existed for centuries, till on the 20th of February, 1305, a sudden flood burst the barriers, the traces of which catastrophe may still be seen on the sides of the mountain gorge. Fragments of the remains from the emperor’s villa may be detected appropriated to strange and modern uses in the adjoining conventual and secular buildings.

The whole of the scenery about Subiaco is most wild and picturesque. The road to it from Tivoli, after following awhile the ancient Via Valeria, is carried along the very verge of the gorge: the town perched on a height, the monastery embowered in foliage, and the magnificent ravine, by following the windings of which, on a strangely artificial path, it can alone be reached from the town, are subjects familiar to, and endeared to the memories of most tourists and artists. At the distance of about two miles from the town of Subiaco the gorge contracts, and the mountains on either side rise almost vertically to a height of little less than 2,000 feet from the valley, along which the rushing Anio cleaves its noisy way. On the left hand side, at about 1,000 feet from the stream, there are several small caves, and a little table of land, dark with flocks of immemorial growth, accessible only, before the formation of an artificial footway, at imminent danger. Far above these grottoes the cliff rises precipitously to another table of land at its summit. It was to one of these caves that St. Benedict fled, at the early age of fourteen or fifteen years, from the world and such allurement as the semi-barbaric age in which he lived could offer.

Born of noble parents, respectively of the Anician and Claudian families, at Norcia, in the Dukedom of Spoleto, in Italy, A.D. 480, he was taken to Rome for education, where he became disgusted at the vicious courses of the inhabitants, in whom the graces of Christianity had at that period but imperfectly expelled the sensual traditions of Paganism, and fled, first with his nurse, and ultimately alone, to the deserted spot above described. Here it was that he was supplied with food by the generosity of Romans, a monk of a neighboring monastery, whose only communication with the youthful recluse was effected by letting down a string along the face of the cliff from the upper table land to the grotto in which he had taken up his abode. The life of St. Benedict, by Pope Gregory the Great, the special patron of the order, who was removed from its founder by but one generation, does not fail to depict the temptations



which the saint encountered from the Evil One in various shapes in this retreat, and the world way in which they were executed. Subsequently he was induced to become the abbot of the curious rock-cut monastery of St. Colanato in the vicinity; but the strictness of his rule occasioned so many plots against his life, that he returned to his former solitude.

His fame having now extended far and wide, numbers flocked to him, and through the liberality of the faithful, he was enabled to erect twelve monasteries on the rocks surrounding his retreat. Having, with the assistance of his affectionate disciples, St. Maur and St. Placid, established and confirmed, in regular order, these religious establishments, the saint went on to Monte Cassino. There he met with a set of inhabitants still profoundly imbued with Paganism, and worshipping Apollo in a sacred grove. These misguided people he converted, and having induced them to cut down their sacred grove, and to desecrate their temple, in the year 529 he laid the foundations of that monastery which, vastly increased in after ages, grew to be the greatest and richest of the order, and became for many centuries the depository of all that was most advanced in the art and learning of the Dark and Middle Ages. Here it was that the saint expired in the sixty-third year of his age.

Of all the twelve monasteries established by St. Benedict at Subiaco, little trace is to be met with in the present day. Lombards, Saracens, turbulent feudal chieftains, and dishonest administrators gradually swept away almost all that there was of the primitive institution, and scarcely anything but a few fragments in the neighbourhood, and the foundations of portions of the monastery of St. Scholastica attest the importance of the original institutions.

This last-mentioned noble structure consists of an entrance courtyard, surrounded on three sides by a wall, and on the fourth by buildings; to which succeeds a cloister of modern date, erected on two sides. Beyond stands the oldest portion of the monastery ascribed to the year 1052, irregularly disposed to suit the site and formation of the ground, and much modified by insertions of later date, among the most important of which is a striking arch of "flamboyant" character. The refectory is situated between this cloister and one built by Abbot Lando in the year 1235. The ambulatory of this last is formed by bays of stilted semi-circular arches, supported on slender marble shafts, with capitals and bases, in the Byzantine style, the whole bearing a strong resemblance to those to be seen in the cloisters of S. Saba and of Sta. Sabina at Rome. Large pointed arches of construction are seen in the refectory and in the church. The latter was built by Benedict VII. in 981, with a campanile of the usual Early Christian character, but covered with a low pyramidal roof. At a much later period, in 1769, a new interior, in modern Italian taste, with a wagon-headed ceiling, was built within the outer walls, they being left almost undisturbed, so that the whole of the interior now visible is modern, with the exception of the apsidal choir end, which was not much altered. The exterior has been recently decorated in doubtful taste. The finely-painted chapel of St. Michael and All Angels, in the crypt, is said to contain the body of St. Bede, but Bishop Ullathorne (R.C.) has recently proved, at once eloquently and learnedly, that this is not the Venerable Bede, our countryman, originally interred at Jarrow, and stolen from thence to enrich the sanctuary of St. Cuthbert at Durham, but another personage—St. Bede the younger, a saint of Italian origin, and rather later date.

The mosaic work in the arcade of Bishop Lando's Cloister is attributed to the Cosmati family, who were much employed as architects, sculptors, and mosaicists at Rome, Orvieto, and elsewhere in the Roman territory. Seroux d'Agincourt, who gives careful plates of this cloister, and of the other buildings at Subiaco ("Architettura," tavole xxix and xxxv.), supplies a copy of the original inscription testifying to the above fact in the following words (the abbreviations being supplied).—"Cosmas et filii Lucæ Jacobi alii Romani eives in memoriam arte periti hoc opus expleverunt Abbatia tempore Landi." [The architectur[al] and room] are peculiarities of this cloister, which are of remarkable interest as compared with later works of the Cosmati in the Pointed style at Rome and elsewhere, were very fully illustrated by Mr. Wyatt's drawings. Saint Scholastica, whose name is attached to this monastery, was the beloved sister of St. Benedict, and a virgin dedicated to a holy life. She was the foundress of the important order of Benedictine Nuns, the annual revenues from whose temporalities in this country at the date of the dissolution of convents, &c. amounted to very nearly 8,000*l.* a great sum at that period.

About a mile and a quarter distant from Sta. Scholastica, by a lovely path winding along the precipice, and supported for the most part on buttresses clinging to its face, are the monastic buildings connected with the "Sagro Speco," the cavern in which

St. Benedict is stated to have taken refuge, and the picturesque situation of which has been already fully described. The approach to them from the entrance gate is under a grove of *Ilex* trees, the impenetrable shade of which upon a sultry day never fails to be most refreshing to the pilgrim after his toilsome walk along the somewhat rugged mountain-path. The peculiar nature and position of the cavern have given rise to the form and arrangement of the monastic buildings and chapels grouped about them. A huge portion of the rock, that over which St. Romanus is related to have lowered the cord with food for St. Benedict, overhangs the monastery in a manner so obviously and imminently dangerous as to afford occasion to the monks to adduce its position as a proof of direct divine interposition in their favour. The scene on entering the upper church is most striking. The rays of light from its single west window fall everywhere upon surfaces glowing with colour. With the exception of the time-stained marble pulpit and its curious coffered ornaments, evidently imitated from the fragments of the lacunaria of the Villa of Nero, all is fretted with an endless variety of hues. Even the fine old pavement of Opus Alexandrinum ministers to the brilliancy of the general effect. The largeness and simplicity of the early pointed forms, the size and severity of the painted figures and groups, and the grand unity of aspect in shade produced by the admission of a flood of light at one point only, effectually prevent the slightest approximation to frittered or meretricious grace. Behind the high altar of the Upper Church, a descent of a few steps, on either side, leads to the chapel of Sta. Scholastica, from which a long descent of steps passing under the high altar of the Upper Church communicates with the Lower Church or crypt. On the lowest level of this church, and between the side work and the living rock is the grotto of St. Benedict. Following the sinuosities of the precipice onwards, steps still descending lead to the chapel of St. Lawrence, and over it is the chapel of St. Gregory, to which access is given from the lower church by a species of mezzanine gallery. At the lowest level of all is the so-called Rose Garden (one filled with briars till the advent of St. Francis), with various other grottoes cut in the rock.

The Gothic of the churches in the Sagro Speco may be described as good Italian Gothic—decidedly distinct from our western styles—and more similar to that found in Sicilian buildings of like date, than to any other examples of early pointed work to be found in the north of Italy. It is, however, to the vast amount of coloured decoration on the walls, especially of the upper church, that the peculiar interest and charm attached to the building are to be ascribed. [Mr. Wyatt had seen before he left England the effect which a partial use of colour would produce, in the church which the late Welby Pugin had constructed at Nottingham in this kingdom, and in other buildings by that accomplished architect, executed prior to the year 1846; but it was not till he visited Subiaco, he said, that he realized the satisfactory result of an ecclesiastical interior entirely covered with coloured fresco paintings and ornamentation. It was more especially on this account that he was induced to make elaborate studies of the interior in most of its parts—accurate representations of which, done upon the spot, he exhibited to the meeting.] With their richness of tint, strange diversity of plane and level, singular contrasts of brilliancy and sobriety of lighting, every step produced some new picture—some fresh and happy combination; and he felt that there was in them sufficient work for months of an artist's time, rather than for the happy week or ten days only he had been enabled to devote to them.

The chapel of St. Gregory contains a fresco portrait of St. Francis, dated 1223, the time apparently of his visit to the convent—which from its representing him with the cowl of his order, instead of the aureole of canonization, might be assumed to be a faithful representation done from the living man. In the lower chapel, the establishment of the community of the Sagro Speco, by Pope Innocent III. and the donation of the Bull to the first prior, John Tagliacozzo, in 1213, are represented in large frescoes, in which the probability of portraiture is again apparent. Such a faithful mode of handing down historical events pictorially to posterity might, Mr. Wyatt observed, be worthy of attention in the present day, as decidedly more instructive and rational than portraying imaginary Cæsar de Lions and Jans of Arc in our houses of legislature. Another fresco of great beauty and of later date (1489) in the chapel of the Beato Lorenzo Loricato, signed by Stamaticeo, is a highly-interesting example of the state of the art of that time.

The fresco decorations of Subiaco possess much

\* An engraving from a careful tracing of the head of the saint will be found in D'Agincourt's great work (Pittoria, tav. c.).

greater interest in the history of painting than has been generally ascribed to them. They are unquestionably of at least four distinct and highly characteristic periods.

The first or earliest specimen in the rude manner of the artists of the catacombs, which is roughly painted against the side of the lower grotto, less difficult of access than the upper one, and in which it is said St. Benedict first received those who came to receive his admonitions and attend his ministrations, may very possibly date from the age of that saint, *i.e.* from the commencement of the sixth century.

The second set of examples is in the stiff and severe Greek style which preceded the manner of the great Florentine innovator, Cimabue. To this belong many of the paintings in the lower chapel, first built to protect the Sacred Grotto; and among them may be noticed especially the Representations of the Establishments of the Community, by Pope Innocent III. (1198-1210), the Conservation of the Church by Pope Gregory IX. and the Virgin and Child supported by Angels. This last is to be especially noted as to be identified by the inscription "Magister Convolus pinxit hoc opus." This Magister Convolus was a Greek, and authorities (Lanzi and Bishop Ullathorne) are agreed in considering that he worked at Subiaco as early as the year 1209, thirty-one years before the birth even of Cimabue. It may not be unimportant, in connection with this date, to observe, that many Greek monks, who had been driven away from their monastery at Grotto Ferrata in 1165, by the wars which at that time took place between the Albanians and Tascians, were residing at the Sagro Speco, to which they had fled for refuge. Through them it was that the establishment at Subiaco became possessed of that most interesting relic, evidently of great antiquity, the black camel's hair cowl, said to have been the capuche or hood of St. Basil, and to have been brought to Italy by his friend St. Gregory Nazianzen, by whom it was presented in the year 378, to the then abbot of that very monastery of Grotto Ferrata. Under the auspices of such a body as these Greek monks, it seems anything but unreasonable to suppose that the skill of Convolus must have been fully developed. In 1066, we know from Leo Ostiensis, that Desiderius, abbot of Monte Cassino, desiring to rear a noble church in honour of St. Benedict, had sent to Greece for skilful workmen in mosaic; and their works mainly contributed to give that great stimulus to pictorial art which led to the ultimate formation of the South Italian School.

The third set of paintings, those for the most part in the upper and middle chapel, giving touching and spiritual representations of sacred subjects and legends from the lives of St. Benedict and his sister Scholastica, have evidently been wrought by one carefully tutored in all those changes in religious art which were introduced under the auspices of the Franciscan and Dominican monks. They apparently date from about the year 1400, and as we know that Subiaco had an artist about that period, who wrote the following inscription (copied by Dr. Ullathorne) on a picture still preserved in the old church of St. Eustace, not many miles distant:—"M. Bartholomew, of Subiaco, painted this church with good faith in 1424.—'Oh Lady, help me; I ask no reward but this,'—we may be not very far wrong in supposing that some of these works may have been from his hand.

The last set are those in the exquisite little chapel of St. Lorenzo Loricato, in which a considerable degree of beauty, both of form and tender colour, are blended with a singularly archaic treatment of form, shown more particularly in the draperies. This severity of treatment is extremely unusual at so late a period as the better half of the fifteenth century, when naturalism had already acquired a great ascendancy over the artist mind; and if the painter of the principal subject over the high altar the Virgin and Child surrounded by Saints—was not attested by his nearly adjoining signature of "Stamaticeo Greco pictor perfect, A.D. 1489," one would naturally antedate the picture by nearly one hundred years. As it stands, this series of frescoes curiously illustrates the clinging of the Greek artists at even so late a date, and despite great improvement in feeling, form, and composition, to their old rigidity of action and arrangement.

#### "E. L. G." AND THE GOTHICISTS.

ALLOW me to say a few words, Mr. Editor, in connection with this "proposition," given by "E. L. G." in the postscript of his communication to you of last week:—"The real harmony of a building with its neighbours depends solely on general form and distribution of masses, and not at all on decorative style." "E. L. G." affects to call this "heresy," but it is evident he is aware it is really such truth as no "monomania" could originate. I would add to "E. L. G.'s" "proposition," that the real harmony of a building, with its adjacent



objects, in any and every situation, depends on the same principle, viz. the general form and the distribution of its masses. But what is the result on applying this "proposition" to the question of styles Gothic v. Classic?

The Classic—any phase of it,—is pre-eminently a distribution and arrangement of masses, and a combination of general forms; whereas the Gothic is a combination of parts, of which every one has a tendency to become a distinct and culminating decorative feature, and consequently a detractor from the distribution of masses by the exhibition of its intricate littleness.

It is this very "proposition" of "E. L. G." in effect, that gives the supremacy to the Radcliffe Library at Oxford. When seen, either near or at a distance, the general form, and the distribution of masses, in that building, are equally apparent; but its Gothic neighbour, St. Mary's Church, is, either near or far off, a piling together of effective details, each striving to confine the eye to its sole and special value, and quite secondarily its value in relation to the whole composition. A like result may always be observed where two buildings, such as this library and church, are in juxtaposition; and the deduction, whether produced by the exercise of common sense, or by the application of æsthetic culture and principles, must inevitably, on the ground in question, be in favour of the Classic building.

"E. L. G." says that this "proposition" was the "notion" of "the fathers of our Medieval orthodoxy;" but surely it cannot be the "notion" of their followers of the present day, who have compiled a glossary of "bits," who have become profound in technicalities, who have been captivated and governed by abstract theories of the several parts of a building, who have sought to catch beauty in a moral philosophical trap, and who, having exhausted the novelty of English precedent, have swerved away to Italian adaptation of mere details:—surely these cannot be commencing at the right point of departure; nor can they be progressing, nor can they, according to "E. L. G.'s" own showing, be working in any other than a wrong spirit and an unproductive direction. They have become glibly adept at the parsing and derivations of a dead language, but have overlooked the right meaning of its words, and they will doubtless, ere long, discover that any "translation" they can make therefrom will be not only somewhat cramped, but will be inadequate to fulfil the purpose now required of it. And whatever real knowledge has been acquired and disseminated, whatever principles have been formed, and however great may be the desire to resuscitate an outspent artistic power, there cannot possibly result from such sources any architectural progress while they are employed less on conceiving general forms and distribution of masses, than they are on the compilation of old forms and the attachment thereto of varied ornament and distinct decorative details.

One word more with "E. L. G." The idea of Gothic art in his mind appears as widely confused as is the expression of his opinions in his multifarious sentences. Gothic is not synonymous with utilitarian, nor is the universal application of one or two solitary rule principles enough to constitute all works in which they may appear Gothic works. Until all other styles than Gothic are annihilated, let us allow them their distinctive titles, and it would be the better course, until the English language has become more prolific, to call things by their right names.

JAMES C.

WHILE, on the one hand, it is due to you and your general readers, not to occupy the columns of the *Builder* with *reterts* "courteous" or *un-courteous*, having more to do with personal feelings and particular expressions than with critical principles and pervading argument,—still, on the other hand, I would not have my silence imputed to any want of respect for your correspondents, or to any affectation of supercilious disregard for their opponent—or even for their *opprobrious* reasonings.

At the same time it is difficult, with the preservation of argumentative sobriety, to meet a writer who charges the architectural body with "the monstrous, the inhuman total neglect of their duty,—monstrous structure, physical *harmlessness*;" nor can I but regret that the use of a common mode of expression, "*we*," should be adduced as an example of my "astounding self-complacency!" All I meant was to state a supposed case. I, you, or he, *we*, ye, or they, "take a shed, and artifice it into a portico;" i.e. the artist takes the primal utilitarian form, and converts it into a thing of beauty. The use of an independent pronoun is surely no great violation of modesty, to say nothing of the conventionally admitted editorial "*we*."

Of course, Mr. Editor, I expect to be advantaged by correction, if not confirmed by approval, and shall respectfully receive all comments that are fairly

urged: neither do I expect more temperance than is consistent with energetic purpose. I am only anxious all who read the *Builder* to be correctors should also study the entire of the articles which may occasion them; and then it will be for me, either to leave the public to judge between us, or to say what more may be required of me. Let it be, moreover, remembered, that I am no Anti-Gothic; but, on the contrary, not less actuated by a reverence for Gothic art, in its proper and most exalted place, than by my love for Classic modification in all places else.

Allow me to take this opportunity of respectfully asking of M. De Jongh for an explanation of the following:—"A window of 8 feet square pierced through a wall of 2 feet thickness, would give, in the Greek or Roman style, 0.64; but in the Gothic style 1.00—i.e. 0.36 more surface of light in the latter." Unless he means to say, that 8 square feet of glass in a Gothic window would give more light than the same quantity in a Greek one, because divided by spread by the mullions and tracery over a larger circumscribing outline, I am perfectly at a loss to understand him. But the advantage of the Greek window, where such an advantage is desirable, consists in its much larger proportion of light within the same circumscribing outline.

GEORGE WIGHTWICK.

#### MANAGEMENT OF RAILWAY PROPERTY, SO AS TO RESTORE IT TO ITS PROPER VALUE.

THE attention of the public having now been called to the great mismanagement of railway property, both by the meeting in London, convened to address Government on the subject, and attended on the 3rd of June by a large body of persons intimately interested in such investments, as well as by a powerful leading article in the *Times* of the 5th of the same month; as I have long studied the subject, and have written much upon it, I send you a few observations, which I consider of paramount importance.

In order to be as concise as possible, and at the same time to take a comprehensive view of the question, I will divide my observations under three heads.

1st. With respect to the laying down of the lines.

2nd. As to their construction, &c.

3rd. As to the manner of working them.

Firstly, then. A *great trunk line* should always be considered as a *through line*, assumed to connect two important termini, one, or other, or both being principal centres of commerce, or places of frequent resort, and likely in case of facilitated communication to have much intercourse one with another.

The straightest and shortest practicable route between two such places should be selected, not, however, disregarding the lie of the country, or the wants of the intermediate populations. The possibility of avoiding engineering difficulties should always be taken into consideration; and even a *détour* may be made to some considerable extent, rather than have a long tunnel, or a heavy bank, or lose the traffic, both of passengers and goods, by keeping at too great a distance from coal mines, or wool-supplying forests, market-towns, harbours, or industrial localities.

These main trunk lines, with such advantageous *détours*, should alone be made by the company undertaking them. It is a fallacious system for the principal company to make branch lines, and this system is one of the great causes of the depreciation complained of.

It is plain that if one company were to undertake to make all the railways in the world, the shareholders' hopes of a dividend would be deferred to the Greek kalends, because, so long as works of construction are going on, the capital employed must necessarily remain unproductive, and the want of a clear appreciation of this fact is the main cause of the depreciation of railway property. On the other hand, if all the railways, ever likely to be required, could be made at once, economically, and got into good working order, railway property would henceforward yield immense profits, and be the very best description of investment.

Secondly. The manner of constructing railways has hitherto been far too expensive in Europe, and very especially in Great Britain. It is not necessary to have railways almost level, with hardly any rise and fall throughout their entire length, nor is it necessary to have them nearly straight. It is not necessary to bring the earthwork from the cuttings an immense distance off, in order to fill up great banks: it is better, in many cases, where the lead is long, to throw the material from the one to *spoilt*, and to make up the other from side-cutting, in the immediate neighbourhood where it is wanted, and thus the cost of construction may be greatly diminished, and, indeed, it is not necessary to make heavy cuttings and high banks at all, except under very peculiar circumstances. In generally flat countries, lying sufficiently above the level of floods, the ground line may be often taken for the formation of the railway, and the inequalities

of the surface, may, in many cases, be adjusted to the lying on of ballast; and even in rough country great works need not always be resorted to, for it is now found that much steeper inclines can be advantageously worked than were formerly considered practicable. Again,

*Bridges, culverts, and viaducts*, have been constructed in far too expensive a manner: all that is requisite in such structures is solidity and suitability—that is, sufficient strength, both in form and material, to resist the forces they may have to contend against; so that they should be made of a *maximum* strength, calculated according to their position and requirements, with a *minimum* of materials, within safe limits; but the cheaper and plainer the better, consistent with efficiency and durability.

*Stations*, in like manner, should not be built at too great an outlay of money. It is capital locked up which will never yield a commensurate return.

It is bad enough to have to make all our roads anew, without having to build also the hotels and inns. All that a railway company should construct is the booking-office, and engine and carriage-shed. Perhaps in addition, they might provide *roof protection* against snow and rain for passengers; but in as simple a manner as possible.

The company could buy land on which to build an hotel at the different stations of the railway, and then invite tenders from persons willing to build it and take the risk and responsibility of such speculation. They would be sure to receive plenty of offers, and might select the one they thought most eligible; but on no account should the company lay out its own money in finding such accommodation. A railway company, to do a good business, should confine itself to its legitimate functions, viz. that of *carrying goods and passengers*.

Indeed, it would be well to put up merely the most requisite portions of the station buildings at first, until the line is opened. Temporary booths would serve for a time, until the profits of the line made it advisable to spend more money, and the capital employed in making the indispensable parts of the railway begins to return in the shape of a dividend, and then it might be considered what amount can be advantageously laid out upon certain stations, and then *only properly*, as this depends greatly upon the working of the line.

In the *rolling stock* also improvements may be advantageously introduced, carriages may be made with saloons, and bedrooms and kitchens. In fact, they may be made small locomotive houses, the saloons with moveable chairs and tables, and stoves, and with head room sufficient to enable people to walk about; the bedrooms, with berths, from the floor to the ceiling one over the other, as on board ship. The guard might be allowed to supply travellers with refreshments in the same way that the steward of a steam-jacket does. In such carriage passengers could breakfast, dine, sup, and sleep nearly as comfortably as in their own homes; and this would diminish the amount of accommodation required in the stations, and, thereby remove a very heavy item of railway expense; and at the same time make the railway pay better, in consequence of affording greater real comfort to travellers.

3rd. For the efficient working of the line a proper *managing director* should be appointed as the company's executive agent, having great discretion allowed, and considerable powers vested in him for a short time: he should, however, be made strictly responsible to the Board for his acts, and there should be no divided responsibility. He should deposit a certain amount of caution-money, submit his accounts regularly to audit, and be in all things responsible as the steward of the company; and only be allowed to represent it so long as he performs his duty honourably, honestly, and well.

There is also another important matter with respect to the working of railways, which has not been sufficiently taken into account, viz.—that while it is necessary to have a sufficient number of *express trains* for the through traffic, it is also important to have plenty of *slow trains* starting from even the smallest intermediate places: much traffic is lost to railways from want of proper attention to this.

The country produces the raw material for almost everything, and would send more goods by rail if slow trains stopped occasionally in the intermediate country places. Timber and stone, hides and vegetables, tiles and bricks, metallic ores, grain, cattle, &c. are alone to be obtained from the country; and when railways have the stations only in towns, they cannot expect to increase their traffic by the transport of such merchandise. But, above all things, they should reduce their fares and their rates of tariff. In the long run it is better to accommodate 1,000 persons at a penny than four persons at 1*l.* simply because the proportion of the number of people who can afford to give a penny often is considerably, inconceivably, greater than of those who can or who care to spend the latter sum



on frequent occasions. Therefore excursion-trains always pay well. This system has been tried to a certain extent, and has succeeded; but it has never yet been carried out on railways throughout the United Kingdom in a sufficiently extensive manner. It is not at all surprising to me that railways do not pay better. My only wonder is that, after so much waste and extravagance, they yield on an average upwards of 31 per cent. This only shows what good property they would be if properly managed: "You cannot have your loaf and eat it."

[I am persuaded that good lines, managed well, in the manner I propose, directed by competent men who are desirous of gaining by the dear-bought experience of the past, and taking into consideration the necessary and ever-increasing requirements of the future, may, according to circumstances, be made to yield an annual dividend of from 10 to 15 per cent.

Even existing railway companies might improve their property by selling their great station-buildings to hotel-keepers, by reducing their fares and tariffs, by improving their carriages, and by at once appointing a competent managing director to administer their affairs.

WM. H. VILLIERS SANKEY.

#### INSTRUCTION IN DRAWING.

##### IMPROVEMENT OF MANUFACTURES.

In teaching drawing from the black-board, almost every man has his own particular system, each perhaps grounded on the same principle, but all differing in their application. These systems are good or bad, as they are simple or complex. It is evident that to keep children interested in the lesson is of the greatest importance, and this is only to be done by giving them something to think about, and by a careful demonstration and explanation to teach them to think correctly. Let them see plainly that everything done has a meaning, and every stroke made, is an addition to the form of the object, and productive of immediate results. This will keep up the interest of the lesson, for when children see beautiful forms made with so much ease, their imitative faculties are at once roused into action, and they will reproduce the object to the best of their ability, and according to their powers.

Some people have a theory that it is an excellent practice to make children draw a certain number of constructional lines, and place curves on this line and on that, commencing and almost finishing the lesson without knowing in the least degree what is to be the result, until the lines they have unconsciously juxtaposed assume a distinctness of form, and the meaning of the object bursts upon them. This method of giving the lesson was, I well remember, very much in favour at Marlborough House, and is still regarded as admirable by many, though common sense has exploded the notion in the minds of those who think on the subject. To lead any human beings blindfold, who are gifted with a reasonable mind, and especially children, at that inquisitive age when they are most impatient of results, is surely bad philosophy. It is not possible that, by drawing the lines of an object without knowing their meaning, so much can be learnt as by drawing them with a consciousness of the value of each line as it is drawn. For how is it possible that the peculiar character and balance of each curve can be given, unless it be known what purpose the curve is to fulfil? Greek vases of the simpler kind are favourite examples for black-board lessons, but it is very unlikely that the elliptic curve, so characteristic of their outlines, will be truly drawn, unless it be explained and illustrated at the time by other sketches, and this is incompatible with the system of keeping pupils in the dark concerning the intended result of their drawing, masking them, as it were, for the time being.

Another equally false practice is that of using a multitude of constructional lines and minute proportions. By this, drawing becomes mechanical, and the object drawn of little consequence; for after numerous straight lines have been drawn in all directions, as a means, the simplicity of a few pure outlines appears a weak result. When such lines have been used continually they become a necessity with the pupil, and a crutch he finds it difficult to dispense with. Now to carry this practice into the drawing of natural objects would be impossible; and it is, therefore, a bad habit to make constructional lines so numerous and important, or to be too minute as to the proportions of every detail in the object given as a lesson. Beyond the central line, vertical or otherwise, on which to obtain the proportional altitude or parts of the figure, and one line at right angles to it showing the greatest width of the figure, beyond these I would have as few constructional lines as possible. The proportions should be pointed out as near as need be, and the drawing of the object in such and such points be left as an exercise of the pupil's eye and imagination.

From my experience in teaching at the black-board,

I am convinced that the great thing to be accomplished is to teach the children to think, and to think correctly. The crooked line and ill-balanced curve do not so frequently result from the absence of manipulative power, as the ignorance of *why* such lines should be straight, and why others should curve in such and such directions; and it is the duty of the teacher first to create this question in the child's mind, and then to answer it. If a child realizes that a line *must* curve in a certain direction, and the curve will soon be obedient to its mind, and the curve will be drawn; but if it is ignorant of the *cause* for such a curve, then there is no influence except that of the eye to take the direction of the hand.

I have myself made a practice of drawing the object about to be given as a lesson, on one side of the board, and questioning the class as to the proportions of it, and what constructional lines will be required to make a correct drawing. This exercises the mind in a precisely similar manner as it would be exercised if a person were required to draw an object from nature. It first makes him see it, and then think about it, and then resolve the best means for drawing it truthfully. Such a method educates the eye to see proportion, and teaches the mechanism of drawing, besides necessitating the habit of thought, and that is no mean attainment. If a pupil can acquire the power of discovering the proportion which the height bears to the width, and the smaller to the greater part of an object, half the battle is over, and care in manipulation joined to this habit of seeing things correctly, will be productive of a power in drawing, grasped so tightly, that nothing will shake it.

In a large number of pupils, a teacher will make the discovery that he may divide them into two classes. First, those who see, but cannot express; and those who find no difficulty in expressing, but cannot see. Time and experience will do much for the former class, but it is a task perfectly Herculean to improve the latter. In a dozen boys, perhaps, there may be three among them who will draw a vertical line obliquely, and are incapable of dividing a line into two equal parts. This does not proceed from want of manipulation, but want of sight, and this distortion of vision is by no means uncommon. To remedy this, the simplest possible examples should be given, those which can be divisible into masses of two equal parts, and no minor divisions be resorted to. The most familiar objects are the best, so that the memory may go hand in hand with the pencil. Common toys, which often have beautiful outlines, may be given, and if a boy draws a kite, for instance, that is broken-backed, and out of balance, appeal to him whether he thinks he could fly such a thing. This will bring its defects home, and I have often seen such an appeal answered by an immediate erasure of the abortive attempt, and a downright flyable kite produced in its stead.

As a rule, no perspective representations should be attempted, for very few children are capable of understanding them. Children are much fonder of facts than appearances, so that simple geometrical exercises are at all times the best. If a child is required to draw a cube from the solid model, he will almost invariably draw the sides equally, though one side be very much in perspective; and it is a task of some difficulty to explain why one side should be drawn smaller than the other. Perspective may be taught by the solid model more easily than in any other way; so that it is better to let perspective drawings alone at first, and trust only to geometrical outlines. This will avoid confusion, and involve no sacrifice of principle.

It is, on the whole, the safest method to divide a class into two divisions. In the first, the most elementary pupils should be taught to draw a straight line, and to divide it into any number of equal parts, and acquire the power of drawing curves through any points on the straight line. When they can do this tolerably well, a curve should be given on one side of a straight line, and the drawing of it, and a similar curve on the opposite side, be given as the exercise. Having, in the first division, acquired a facility in making curves and straight lines in the abstract, in the second they see and learn to apply such lines to the drawing of actual objects, in the selection of which I have before remarked that the teacher ought to be careful to choose familiar objects, rather than such as his pupils have probably never seen.

Having encroached so much on your valuable space, I will ask permission to say a few words more. It is a question whether drawing will ever become naturalized among us, and productive of real good, by the single lesson of an hour or two per week. To become a practical medium for the expression of thought, it needs as much culture as other subjects with like advantages attached to them; and to teach arithmetic by one hour per week would be considered impracticable.

If we consider the subject, both as a national one and commercially, it will be evident that this

hitherto neglected branch of education has such immediate advantages attached to it, that to give it a place among the most important will be anything but bad policy. Between the mechanic and his master, and between individuals of every class it will facilitate expression, and save much time in verbal description. But to become a positively useful art, we must adopt a more comprehensive system than that which allows only of one lesson per week,—for practical usefulness cannot result from it. In some instances natural talent will be elicited, as in cases which were mentioned in my last communication, and power will be acquired; but a system which gives power to all, and develops the peculiar talent of individuals, this is what we require. Ready means are at hand. The pupil teachers of parochial schools all learn to draw, and when they can draw fairly on the black-board, they will be able to teach as well, or better, than art-students training to become art-masters; and this, not because they are better artists, but because from practice they are better acquainted with tuition. Why not make use of such means?—and why should not drawing be taught by them as regularly and as often as writing, which experience has taught us is learnt soonest when drawing is taught simultaneously with it? If, as a nation, we decide that every one is a more useful person when he can draw, let us adopt the broadest possible system to accomplish this, and put such a knowledge of drawing in the hands of each as will be a weapon and not a toy. The work hitherto done has been an experiment on the raw material, in order to discover whether it was capable of development; our experience has proved its possibility, and now we have to invent machinery which will enable us to supply the demand. The Department of Science and Art does much, and what it does is *well* done; but this is a drop in the ocean in comparison with what might, and must be done, by some means. The Museum at Brompton contains such an arrangement of materials and illustrations for education as have never yet been seen in one place, and this will do much: the district schools of art are also boots to the working classes; but all these will not have one tithe of the influence upon British art as the seeds of art sown in the minds of young children by the teaching of drawing.

And before long we must do something, for England has surely been in the rear long enough. We established schools of design as a means of improving ornamental art, and after twenty years' experiment, they have taught us that we began at the wrong end of the task. It was of little avail to produce well-educated designers for manufactures, and leave the mass of the people incapable of appreciating their works. This was to furnish the supply before the demand existed, and common sense would have told that bankruptcy must result. It mattered little to a man who was about to furnish a house that such-and-such a wall paper was from the Government School of Design. He could not see the value of its superior drawing, or appreciate the delicacy of its chaste harmony of colour. What he selected was a paper which showed such an amount of knowledge and expression as was the result of thoughts equal in refinement to his own. Thus the country peasant who aspires to a papered parlour, selects a paper on which the adventures of "Uncle Tom" are expressed in coarse and vulgar colours; and the farmer, one in which the various incidents of the chase are delineated. The tradesman chooses a showy pattern that he supposes will set off his room to most advantage, and impress upon the world that he is a thriving man. The rich man papers his drawing-room with a pattern that has positively every colour in it, and for the multitude of blocks which produce his paper, he readily pays a handsome price; while the aristocracy, when they stoop to paper, will be content only with the last French triumph, bouquets of flowers in profusion standing roundly from the wall: exquisite specimens of black-printing will alone satisfy their more highly-refined tastes, subjects which most nearly approach their own pet study of water-colour flowers.

Thus the mass of people select, each person choosing the pattern which best expresses his own power or thought. That this is the case can hardly be doubted by any one who takes the trouble to observe for himself. Let him mark the kind of subjects, and their position in the scale of art, which different classes of people possess. He will detect in the peasant's cottage images glaring with bright blues, reds, and gold, on his mantelpiece; and on his walls figures of precisely similar colours: his jugs and cups, with outlines, having as much beauty in the same scale of art, and, save where sacred necessity compels, the work of his own hands will have the same kind of expression, and show the same habits of thought as the works that are made for him by others.

The reason of this is, that such things *fit* him. They are the just exponents of those thoughts which in his uneducated state he imbibes from Nature. He





ST. GEORGE'S SCHOOLS, BATTERSEA.—MR. JOSEPH PEACOCK, ARCHITECT.

sees that the sun is golden, the sky blue, and evening clouds are red; that leaves are green, sunsets and heather are purple, and fruits and flowers orange-coloured. In all these he sees *facts* alone; he detects no proportion, and is not sensible of that grand law of nature by which some objects retreat that others may advance, and that it is the subtle *proportion* of things which he sees in nature which produces in him emotions of pleasure. He has not learnt to realise this. He sees facts in the abstract, and ignorantly supposes they will be ever fresh to him if he reproduces facts, and scatters his own version of them broadcast around him. He does this. He selects what exactly comes up to his own measure of thinking, and if by persuasion he is cajoled into taking another choice, he feels afterwards that it does not fit him: he will be his own master another time.

Every class of people have their own version of nature, and will proceed unconsciously to express those versions around them. All classes of people in England are ignorant, more or less, in matters of art, and therefore all classes will select wrongly, and only have such bad things as will run parallel with their own degree of bad taste. Good works they reject because such things are above them, and they act honestly,—to do otherwise were vile hypocrisy. It is on this honesty we rely, for from this we argue that it is ignorance alone which causes the evil,—one which knowledge and education will therefore remove. This brings me to the matter in hand.

The School of Design system, then, was to produce a supply of a superior class of ornamental art, and neglected entirely the demand for it, which did not exist, and which was not created by the school's operation. This was untradesmanlike, and has consequently been a failure. The system pursued by the Department of Science and Art is of the opposite character: it is essentially tradesmanlike, and will as certainly be successful. The prime feature in it is to create a demand for superior manufactures, and in England the demand invariably creates the supply. English people will *not* have things thrust down their throats, and they *will* have what they want. To create a want, therefore, is the surest manner of producing a supply.

Instead of instructing the solitary designer, the mass of the people will be educated, individual superiority be supplanted by general excellence. Now the schoolmaster is abroad: incompetency is ousted from high quarters; and when art-knowledge and art-feeling are common, artists must be comparatively elevated.

That this must follow is written in the world's experience, for never has mankind felt a want which great spirits have not risen and ministered to.

WALTER SMITH.

#### ST. GEORGE'S SCHOOLS, BATTERSEA.

St. George's Schools, Battersea-park, have been completed, and were opened in May. They form a pretty group of buildings, close to the South-Western Railway, on a fine open site, which was given by the freeholder. Accommodation is provided for 200 boys, 150 girls, and 150 infants, and large class-rooms for each school, with three separate residences for the teachers. They are built of white brick, with Bath stone windows, dressings, and copings, and the roofs are covered with tiles. The girls' school is over the infants' school, and is reached by an open stone staircase, which communicates also with the residence and playground. The architect for the schools was Mr. Joseph Peacock: the amount of the contract was 3,200*l*.

#### THE DECORATIONS IN MANCHESTER FOR THE QUEEN'S VISIT.

THE newspapers have given full particulars of every incident connected with the visit of Her Majesty and the Prince Consort to the treasures of art collected at Manchester, and we shall therefore merely refer to a few of the preparations in which the arts of construction and design were employed to give substantial form to the loyalty which every heart in Manchester felt towards the exemplary Queen and her illustrious companions. It is well known that Her Majesty was the guest of Lord and Lady Ellesmere, at Worsley Hall, about six miles from Manchester (designed by Mr. Edward Blore, and illustrated in an earlier volume of our journal). The villages of Worsley and Swinton, and the township of Pendleton, were gaily decorated with arches, flags, banners, garlands, and ornamental devices. The first triumphal arch of magnitude on the route to Manchester was at the Pendleton tollbar, erected for about 100*l*. raised by subscription, consisting of three arches upon eight double columns, ornamented with crimson, white, and blue drapery, flags, and flowers. The design was by Mr. Dalow, and was selected from six. On Tuesday and Wednesday nights this arch was lighted up by 1,500 variegated lamps. The corporation of Salford erected triumphal arches at Windsor-bridge, and at the entrance to the Peel-park: both were creditable, and the latter is suggestive of a more permanent structure in the same position as a fitting entrance to the People's-park. An effective style of decoration was adopted for the principal buildings of Salford, something in the Venetian style, in which richly-coloured hangings from the windows formed the principal element. In Manchester, the council of the corpo-

ration voted the limited sum of 1,000*l*. (!) from the corporate fund to display the loyalty of the city; and had it not been for a large amount of private liberality in this direction, Manchester would have cut a sorry figure with its two triumphal arches. The first of these arches was at the Albert-bridge, which divides Manchester and Salford. It was in the Roman style of architecture, and was composed of three divisions, the central one over the carriage-way measuring 24 feet wide and 36 feet in height to the soffit; and the two side ones over the footpaths measuring each 7 feet in width and 17 feet in height. Above the side arches were massive cornices and balustrades, from which the central arch sprang, the crown of which, decorated with a beautiful cantilever cornice, was upwards of 50 feet from the ground. Surmounting the central arch were the royal arms, ornamented with a trophy of flags, and immediately underneath, the arms of Manchester. Over the side arches were the letters "V. A.," surrounded by floral wreaths; and festoons of roses and evergreens ornamented the piers of the arches. Rising from the top of the side arches were colossal figures; those facing Salford representing "The Arts" and "Industry," and those on the Manchester side representing "Painting" and "Victory." Mr. Harrup was the builder and Mr. Whaithe the decorator.

The triumphal arch erected by the Corporation at the boundary of the borough, in the new Shelford-road, a little beyond the Chorlton-road, was a substantial-looking structure, in imitation of grey granite. It consisted of a lofty arch over the carriage-way flanked by two smaller ones over the footpaths. Round the side arches were evergreens gracefully festooned, and their entablatures supported balustrades, from which the central arch sprang. The spandrels were decorated with allegorical figures,—on the south side, "Fame" blowing a trumpet, and holding a laurel crown in her hand, and on the north "Victory" extending the coronal as though to lay it on the brow of Queen Victoria. The entablature of the large arch rested upon mouldings, between which small garlands of evergreens and flowers hung in festoons. The face of the key-stone was hidden by a shield, bearing the arms and motto of the city of Manchester, and above all was a trophy of flags, enclosing the royal arms. The east and west façades of the arch were similarly decorated. The cost of this structure was 300*l*. and its substantial character was highly creditable to Messrs. D. Bulhhouse and Sons, by whom it was executed.

At Old Trafford, near the approach to the Exhibition building, an arch of the Italian style of architecture had been constructed. Its measurements were 50 feet to the crown of the arch, 65 feet to the top of the flag-staff, 60 feet in width, the span was of



33 feet, and each of the smaller arches or bowers was 6 feet wide. The arch was of light stone colour. Round the centre, in gold letters, was displayed a "Welcome to Old Trafford," and within the large arch mosaic cloth was draped in festoons, with gold cord and tassels. A plume of prince's feathers covered the face of the keystone, and from it drooped graceful festoons of flowers, which were attached to the entablatures of the side arches. Above the plume, and surmounting the whole, was a trophy of flags, with the Royal arms in the centre. There were plumes of feathers over the keystones of the smaller arches. The entablatures were inscribed with the names "Victoria" and "Albert," in gold letters; over the side arches, in elliptical tablets, were "Victoria Adelaide, Albion," and "Frederick William, Prussia," and on the pedestals, in similar tablets, were the names of all the Royal children, "Albert," "Alice," "Alfred," "Helena," "Louisa," "Arthur," "Leopold," and "Beatrice." The pillars were ornamented in the arabesque style, and at the top they were turreted, and supported a number of plants in pots. Inside the centre arch at the base, the ellipses were inscribed "The tribute of Old Trafford." On different parts of the arch were displayed English and Prussian banners, and the arms of Manchester, Salford, Lancashire, and Cheshire. Both façades were alike. This triumphal arch was erected from the proceeds of a subscription in the neighbourhood. The greater part of the route through the city was lined with spectators at the windows, on balconies and upon stages, platforms, and stands, all of which underwent the scrutinising examination of competent surveyors, who were engaged by the city authorities for the purpose. Generally speaking, the character of the decorations was in advance, as regards taste and design, of that on any former occasion of a similar kind in Lancashire.

On Wednesday, the 1st inst. the Prince Consort, the Prince of Prussia, Prince of Wales, and Prince Alfred, after a visit of three hours' duration to the Exhibition, were conducted over the works of Messrs. Mearns and Co. where the vulcanised Indian rubber fabrics are manufactured; also over the Print Works of Messrs. T. Hoyle and Sons, at Mayfield. On the way to Worsley, a pause was made to view the manufacturing establishment of Messrs. E. Armitage and Sons, at Pendleton. The Royal party seemed determined to make the most of their time, and showed how much may be accomplished where there is "a will" as well as "a way."

#### STAMPED OR INCISED STUCCO.

We have already mentioned the mode of decorating stucco introduced by Mr. Ferry. We now add that gentleman's own notice of the subject, communicated to the Institute of Architects at a meeting, as already mentioned, on the 15th of June:—

I wish to call attention to some specimens of stamped stucco, from which I think it may be seen that it is possible to obtain large surface decorations at a small expense, and that a common material, which has hitherto in modern practice been only used for perfectly plain purposes, may be made the means of much successful enrichment. My mind was first directed to this matter by a desire to obtain some sort of suitable ornamentation for the interior of churches built at small outlay; for it appeared to me that when every effort was making to render churches both solid in construction and beautiful in material, by the use of costly marbles for walls and polychrome devices for internal wall surfaces, there should be some attempt (where economy in cost was obligatory), to employ common products in such manner that in their natural use they should conduce to church-like effect, without adopting those surface embellishments which, in their application, become necessarily expensive.

Much attention has properly been given to a better use of bricks for ecclesiastical buildings, and good effect has been produced by them with stone and flint: naked brickwork, however, for the internal facing of walls is less successful, and the usual way of obtaining durable surface decorations is by painting upon metal plates and affixing them to the walls. With many people, however, there is a strong dislike to polychromy. They will sanction any extent of neutral tint or bi-colour, but object to having coloured decorations, however well executed. This may be, and probably is, a mistaken view; but the prevalence of the opinion is a "great fact," and must be dealt with accordingly. Any kind of enrichment, therefore, which can be produced in the plaster, and is consistent with "the principles of Medieval art," is worthy of notice. Anything affecting to be what in reality it is not should be excluded from use in churches, where truthfulness ought to prevail. Plaster is therefore very properly forbidden to be used for columns and reliefs, or any constructive members

which ought to be of stone or some other rigid substance.

In former times the plastered walls of our churches were covered with coloured devices and texts, or illustrations of scriptural subjects: entirely plain surfaces were seldom to be found; but in later periods a Puritanical spirit prevailed, which led to the concealment of all these decorations by repeated coatings of whitewash. Happily a more enlightened feeling now exists, and there is a general desire that our churches should be suitably ornamented; indeed, nothing hinders decoration but the want of funds, and in all modern churches there is a seeking for some economical mode of enriching the internal wall surfaces. A very cheap and simple mode of ornamentation seems hitherto to have remained unattempted. It is well known that the external rough casting on old wooden buildings was stamped or wrought in small devices, known by the term "pargeting," but it never assumed the importance of extensive wall decorations, as, when stone and brick entirely superseded the use of quartered oak framing, the system of pargeting also ceased. There seems no reason, however, why this principle of design should not be largely used in another way. The plan now proposed is to impress the common stucco with geometrical and other forms: they may be applied according to the taste of the architect, either under string courses, around arches in spandrels, soffits, or in large masses of diapering, and texts may be imprinted on the plaster instead of being simply painted on the walls. If colour is desired, it can be effected by mixing the desired colour with the coat forming the groundwork, then by laying the stencilled pattern against it, and filling in the solid portions of the device with the ordinary stucco or plaster.

It will be observed that I have used the word stucco in this description and not plaster: it is not, however, to be supposed that this process cannot be used with fine plaster or any cement which does not set too rapidly. My object is to show that the commonest material is capable of being employed, and that it may be impressed *in situ*. If common stucco, therefore, may be thus treated, it shows what opportunities are open to us for giving interest to large wall surfaces which are generally left plain.

My bringing this matter before the members of the Institute is simply with a suggestive view: each person will judge for himself as to the particular way in which it may be applied. The cost of making the brass patterns is not expensive, and there is no reason why fresh designs should not be made to suit any building: thus the frequent repetition of the same ornaments would be avoided. This should not aim at superseding any higher mode of decoration; but that it may be made conducive to good effect in the interior of buildings, I can entertain no doubt.

#### OPPOSITION TO SANITARY PROGRESS.—THE PROPOSED NEW PARKS.

At no period of the history of this metropolis has the necessity of all classes and districts working earnestly together for the general good been more clearly evident than at the present moment, and yet, unfortunately, there are large numbers in this metropolis who think that they can safely live for themselves alone. Westminster, so well provided with spacious parks, made and kept up at a large public expense, grumbles to afford a similar means of health to the rapidly-increasing populations of Finsbury and Bermondsey. Other neighbourhoods are similarly opposed, and what is more curious still, it is said that the Corporation of London will strongly oppose the levying of even a small rate for the establishment of new parks.

We ask those who, living year after year in particular localities, are apt to forget how intimately connected even those parts of London far distant from them were with themselves, to take up a map of the metropolis and carefully consider its peculiarities.

First, let London citizens whose eyes are now partly of this huge capital, mark carefully the limits of their own territory, and see how small a speck it is in proportion to the surrounding mass.

Then let others look how unbroken is the almost bewildering multitude of human dwellings: draw a line round the outskirts, and then see how completely London is a single city, each part depending more or less upon the other for the good sanitary condition of the whole.

From the Regent's-park eastward to the Victoria-park, the whole space is thoroughly blocked up with houses. From Camberwell to Holloway, there are nothing but close and continuous streets, only broken by the Thames. The Regent's-park, Hyde-park, and the more venerable St. James's-park, which were once as Battersea and Victoria parks are at present, quite in the suburbs, are widely belted in with buildings, and persons who now view them

admire the forethought of those who caused their formation at a time when it was possible to obtain the ground on easy terms.

A reference to the map will show how admirably the proposed park for Finsbury is situated at an angle towards the north, between the Regent's and Victoria Parks. It is evident, by the extent of building during the last twenty years, that if advantage be not at once taken of this site, in less than half-a-dozen years it will be covered with bricks and mortar, and those who come after us will not conceive a very favourable opinion of our present enlightenment.

Let us again cast a careful look at the map, and view with consideration the mass, which is girt by a skirting line of about thirty-seven miles, and reflect that great as is this surface covered by two millions and a half of living creatures, in less than fifty years the mass must, according to the present rate of progress, be doubled; and then, if such spaces as the Finsbury and Bermondsey Parks and Hampstead-heath are spared, they will indeed be like water in the desert.

One would think that it was scarcely needed now to argue further the necessity, with this extraordinary population, of measures of sanitary improvement sufficiently applicable and extensive for the emergency; but when the representatives of certain districts rise up in Parliament and oppose the formation of metropolitan parks, it is our duty to remind some of our readers that to a considerable extent the health of every individual in London depends upon the proper condition of the whole. The miasma which rises from the ill-drained districts of Bethnal-green and other parts cannot fail to reach in an adulterated but still dangerous form places far distant.

By purifying the large neighbourhoods of the poor, we at the same time purify the halls and palaces of the wealthy. With the exception of drainage, no sanitary means are more effective than the plentiful mixture in the midst of our buildings of large open green spaces well planted with trees. Independent of this and various other advantages, the metropolitan parks are places of pleasant resort to thousands of hard-working and part-up inhabitants. Jones the carpenter, who has half-a-dozen children, cannot afford often to take a trip by the railway; but if there be a park at anything like a reasonable distance, Mrs. Jones and he will walk off with the children and spend a few hours in the open air, instead of sitting confined in a close dwelling-house, or, perhaps, resorting selfishly to the public-house.

We hope that the report of City opposition is without foundation, for we cannot forget that the Moorfields, Smithfield, and some other lands, were entrusted to the corporation of London as green places for the recreation of the people for ever! Another peep at the map will show how valuable a little park—a place of recreation—at Moorfields would now be. Let us hope that the error of allowing the misapplication of the places just mentioned may be taken into consideration, and that in return the City authorities will give a vigorous support to the proposed new parks.

#### FOREIGN INTELLIGENCE.

*Ulm.*—The Great Organ.—The building of this huge instrument has caused quite a sensation in Germany. M. Walker, the organ-builder, has now given it over to the Committee of the Minister, and it has been consecrated by the *Pfarrer*. The German papers say that this organ had already a history of its own, before it was completed. It is so far back as the year 1838 that M. Walker made a plan for this huge instrument. Several plans were made subsequently, one improving on the other, and increasing the expense from 15,000 to 28,000 florins. Its building lasted upwards of two years, and the transactions about it nearly eight. It has two manuals, and 4,000 pipes, and is considered now the largest in Germany.

*Weimar.*—Architecture and Poetry.—The restorations of this splendid Medieval castle are pushing on with such activity, that the architect, M. Von Ritzger, will remain for the next two months on the spot. On the occasion of the great *Singerfest*, in September, the company will be conveyed by a special train to this fine restoration of a historically important locality.

*The Tunnel of Mount Cenis.*—This grand manifestation of the mechanical enterprise of our age, has been decided upon by a vote of the Sardinian Parliament. It is Professor Colladon, of Geneva, who is the originator of the plan, and it is said that some preparatory experiments are to be made on the Mount Salève, near that city, at which the Premier, Count Cavour, will be present. The Mount Cenis tunnel will have a length of 12 kilometres, and it is asserted that the stupendous engine can operate at a distance of 6 to 7 kilometres (?). Some improvements have been lately added by the engineers, Messrs. Grandis, Grattoni, and Sommeiller.



## ESTIMATES AND COST OF METROPOLITAN IMPROVEMENTS.

THE First Commissioner of Works has presented to the House of Commons a report with reference to the present condition of the metropolitan improvements, under the direction of his department, now in progress, and the sums of money required to complete them. We have received some trenchant observations on the probable great excess of cost of the works over the, asserted, estimates by the Government architect; but the charges are made to look so grave, that we must seek for some information on the subject before deciding as to the publication of them.

## OXFORD ARCHITECTURAL SOCIETY.

The nineteenth annual meeting was held in the Society's Rooms, Holywell, on Monday, the 22nd of June. In the report laid before the meeting on that occasion, the committee said,—

"The important architectural works which were enumerated in the last report are now either completed or are rapidly approaching completion. The Chapel of Balliol College, which is nearly ready to be opened, is remarkable for considerable vigour and originality of design. At Exeter College, the library is completed, the rector's new house nearly so, and the walls of the magnificent chapel are rising rapidly. All of these works are most satisfactory, and worthy of the eminent architects who are employed on them. In the rector's house especially, Mr. Scott has practically vindicated the suitability of our national style to domestic purposes. The windows, though strictly Gothic, admit abundant light, and are in every respect as convenient as the common sash windows in ordinary dwelling-houses.

The decoration of the president's room at Magdalen College has been completed by Mr. Craze.

The committee congratulate the society on the fact that the restoration of coloured glass to the windows of the chapel of this College has been intrusted to Mr. Hardman, of Birmingham, whose works are now generally admitted to be more successful than those of any other glass-stainer.

The works at the New Museum proceed steadily and satisfactorily, and there can be no doubt that the high anticipations which have been formed of this building will be fully realised. The committee feel that they cannot enter into a detailed criticism of so great a work until it shall be completed.

The architects of the Museum have recently completed a new debating-room for the use of the members of the Union Society, in which they have successfully adapted Gothic architecture to the peculiar requirements of the case.

The chancel of the parish church of St. Peter-in-the-East has been partially restored, and in that of Holywell very important and extensive alterations have been carried out. In the latter church, decorative colour has been largely employed, especially in the roof, and on the eastern and western walls, where groups of angels have been painted with admirable effect by Mr. Bell, a London artist."

## THE SURREY ARCHÆOLOGICAL SOCIETY.

THE fourth annual general meeting of this society was held on Monday, the 29th ult. at Dorking, when a pleasant day was spent, though archaeology did not occupy a very prominent position. A large number of the members of the society assembled at the Deepdene, shortly after noon, where the business proceedings of the association had been announced to take place at half-past twelve o'clock, by the kind permission of the owner of the mansion (Henry Thomas Hope, Esq. one of the vice-presidents). The business was confined to mere routine, and on the election of members and no papers were read. A proposition was made by Mr. J. W. Flower, that the society should publish an archaeological map of the county, which elicited some discussion, and was agreed to by the council.

The meeting then broke up, and the company proceeded to view the numerous treasures of art contained in the Deepdene, and afterwards rambled through the delightfully picturesque grounds surrounding the mansion.

Arrangements having been made by the Committee for a visit to Wotton-park, by the kind invitation of W. J. Evelyn, Esq. (one of the vice-presidents of the society), the company left the Red Lion Hotel, in carriages and vehicles, shortly before three o'clock. They were hospitably received by Mr. Evelyn, who conducted the party over the house and grounds, rendered classical by the residence there of the celebrated John Evelyn, popularly known as "Sylvia Evelyn," and the author of the often quoted "Diary," and

other well-known works. Many of his books are still preserved in the library at Wotton.

At half-past six o'clock, a large party, including many ladies, sat down to dinner in the Assembly-room, Red Lion Hotel, under the presidency of Mr. Henry T. Hope. The "feature" of the meeting was a speech by Lady Elizabeth Wathen, in reply to the toast of "The Queen, the Prince Consort, and the Royal Family." Professor Donaldson returned thanks for the visitors.

## THE SUSSEX ARCHÆOLOGICAL SOCIETY IN NORMANDY.

A CHOSEN band of the Sussex Archaeologists have made a descent on the coast of Normandy, and a writer under the recognizable signature "M. A. L." has communicated an account of the invasion to the *Brighton Herald*.

Referring to the joking terms in which the visit had been spoken of, circulated by us at the time, when it was remarked,—"Master Lower would be the Master Wace of the enterprise, and indite a poem thereupon; and the facts of the invasion would be pictorially handed down to posterity by the facile fingers of certain Lewes Matildas," the writer says the French papers also took up the theme; and, to crown all, *Le Charivari* devoted a whole column of its humour to the subject under the title of "L'Archéologie Normande," commencing "Archæology again raises its head in England, where it had not dared show any sign of life since Walter Scott turned it into ridicule in his novel of 'The Antiquary.' The archaeologists of that country have evidently been afraid of taking old dykes for Roman remains,—a blunder which the *Times* would not fail to communicate to all Europe.

Of late the archaeologists, who had remained since the publication of 'The Antiquary' in the state of a secret society (!), have held a public meeting at Newcastle, under the presidency of Dr. Bruce, and they have decided on undertaking a long scientific excursion on the continent. A steamboat freighted at the expense of the society will convey them first into France. The English, whom we have so pertinaciously regarded as a people entirely devoted to the trade of Windsor soap and Birmingham razors, have always money at command for the most eccentric of their whims. In France, the country of arts, of letters, and of science, no scientific expedition whatever could gain the adhesion of a hundred people.

The English are to bring with them an historian, M. Lewes Matildas (!) commissioned to write daily a report of the expedition, and a poet, Monsieur Lower, whose mission will be to sing all the discoveries of importance.

For instance, if they lay hands upon a Gallo-Roman sepulchre, M. Lower will immediately seize his lute and compose a ballad.

If they find a pot of coins, M. Lower will begin, off-hand, to chant a dithyrambic measure.

Should they discover an ancient Gothic arch, in church or in castle, M. Lower will tune his lyre and chant an ode.

All this time Monsieur Lewes (!), whom Heaven has not endowed with the *secret influence*, confines himself to the duty of entering upon his register a dull record of all the discoveries."

Dieppe and Rouen were visited. Speaking of the latter the writer says:—"We went, of course, to St. Gervais, the death-place of the Conqueror. Here, after evening service, we descended into an ancient crypt, and saw the tombs of St. Mellon and St. Avicenne, the first and second archbishops of Rouen in the fourth century. This vault is considered by French antiquaries as a genuine relic of the Roman ages; but Dr. Bruce shook his head dubiously, for which I was sorry. At all events, there are Roman tiles and other marks of great antiquity to be noted in the construction; and it must not be forgotten that Rouen, under the name of Rothomagus, was a well-known Roman station."

Caen followed, and then Bayeux, where Dr. Bruce lectured on the celebrated Tapestry no longer preserved as a roll as it was when we saw it a few years ago, but stretched upon both sides of a stand running round the apartment, and carefully covered with plate glass:—"Singularly enough, its first and its last scenes are laid in Sussex. In the first, Harold with his knights is represented riding to Bosham, in order to cross over to Normandy, where he subsequently made a solemn oath not to disturb the pretensions of William to the English throne: in the last, we behold the death of Harold, and the flight of the English at the battle of Hastings."

The trip occupied six days, and no event occurred to mar the tourists' pleasure, or to break the arrangements of the programme. Fortunate tourists! Amiable recorder!

## THE MANCHESTER EXHIBITION BUILDING.

Sir,—If we are to have buildings of iron and glass for public purposes, and it is most desirable that we should be able to avail ourselves of such constructions, we must not gloss over or shut our eyes to weaknesses and failures which become apparent, but boldly seek for the cause of them, and prevent, if possible, their recurrence in other similar buildings. I think it very desirable, therefore, that you should be informed of the real state of the case in respect of the storm at the Art Treasures Exhibition building on Saturday afternoon, the 4th inst. Of course the matter will be smoothed over with "immense amount and suddenness of the rainfall,"—"accidental stoppage of the gutters and down-spouts,"—&c. &c.; but this will not alter facts, which are as follows:—About six o'clock in the afternoon a tremendous thunderstorm commenced, with heavy fall of rain, which lasted with great fury for above a quarter of an hour. The rain-water descended in torrents in the inside of the building, all along the line of the gutters on each side of the main arched centre, falling upon the glass cases and other articles beneath. Most fortunate it is, that these articles, so valuable, were in glass cases, else the damage would have been irreparable. The water also found its way into the ancient and modern galleries, and particularly into the Herford and Water-colour galleries, and energetic steps had to be taken in the instant removal of pictures. From what I could see, I should think that no damage was received by any of the articles; but this was owing to the promptness of the measures taken by Mr. Deane. The building itself was proved to be quite uncalculated for an extraordinary amount of rainfall, as it is hardly likely that all the gutters should have been simultaneously stopped by accident. The gutters and spouts were not sufficient in dimensions to carry away the water falling on so large a surface. I wonder which of the three gentlemen who have fought so hard in their turn for the honour connected with the building, will accept the responsibility of this part of the arrangement.

A. LEAK.

## NEW BATHS AND LAUNDRIES AT MANCHESTER.

THE second establishment of baths and laundries, erected by the Manchester and Salford Baths and Laundries Company, was opened on Wednesday, 1st inst. in Mayfield, London-road, Manchester. The first establishment by this company, which has been in successful operation for a year or more, is in Greengate, Salford. The company intend erecting other similar establishments in different populous parts of Manchester. The Mayfield baths are in the midst of a densely populated district, occupied almost wholly by the working classes. The building has a neat and ornamental appearance, and stands on a piece of ground bounded by Boardman-street and Store-street. According to the *Manchester Courier*, from which we get these particulars, the style of architecture partakes somewhat of the Italian. With the exception of the end used as the residence of the superintendent, the building is only two stories high. In the former part another story is added; and immediately over it rises the chimney which carries off the smoke and steam. This chimney is less ugly than many of its neighbours, of which there is a profusion in that locality. The front of the building is composed of brick, with stone dressings. The length of the frontage is about 120 feet. Of this space, 80 feet are devoted to the first and second class male swimming-baths, the remainder being occupied by the laundries. The doors leading to the men's baths (of which there are two classes, first and second) are on the Store-street side. There is a separate entrance for each class. The first-class baths are approached through a waiting-room 25 feet long by 15 feet wide. The plunge or swimming bath is of large proportions, being 70 feet long by 25 feet wide, and averaging 4½ feet in depth. The bottom is formed of concrete, upon which is a layer of cement, the whole being covered with polished Yorkshire flags. The side walls are first covered with cement, and afterwards lined with porcelain tiles, bearing a neat coloured border. Surrounding the bath are thirty-two enclosed dressing stalls; while over these, supported on ornamental iron pillars, is a gallery, in which are the men's private warm baths, of which there are seventeen. These are 8 feet by 7 feet, the height being about 12 feet. Separated from the gallery by an open corridor, and facing the front of the building, are five extra first-class private baths. In addition to being a little larger than the others, these are supplied with a shower-bath. The second-class swimming-bath is in most respects similar to the first. It is entered through a waiting-room adjoining that of the first-class, and is fitted up with every regard to comfort. It is of the same dimensions as the other, but only a portion of the dressing-stalls are enclosed. In the gallery are the private



warm-baths, and in the front, facing the street, those which are called extra, and for which an additional amount will be charged. The roof of both baths is in open rafters; the light, of which there is no lack, being admitted by side windows, instead of by skylights, as is the case in the building in Salford. The women's baths, although in the same building, are entirely distinct from the other part. There are two separate doors from the streets, and two waiting-rooms, first and second class. From these a staircase leads to the respective class of baths, of which there are four of the first, 8 feet by 6 feet; and seven of the second, which are a little smaller. The laundry department occupies the end of the building near Boardman-street. The waiting-room, which is 21 feet by 16 feet, leads directly into the laundry, which is on a level with the street. The room is 64 feet by 36 feet, and is filled with all the necessary apparatus for the various operations in washing. There are six first, and thirty second, class departments. The former are provided with three tubs for washing, boiling, and rinsing; while the latter have only two, those for washing and boiling. Each compartment is provided with an iron "maiden," which is placed over the hot-air stove, and upon which clothes can be dried in about twenty minutes. Access can also be had to two patent wringing-machines, which, by a very simple process, remove all the water from the wet clothes, and save a great amount of labour. The ironing-room adjoins, and will be fitted up with stoves. For the purpose of supplying the hot water and steam there are three boilers, of twenty horses' power each. The water, which is obtained from the corporation, is stored with a tank, placed over the boiler-house, which holds about 3,000 gallons. The quantity which is contained in the baths is between 40,000 and 50,000 gallons, and the time required to fill each is about two hours. Arrangements have been made for carrying off the waste water. The building has been erected after the designs of Mr. Thomas Worthington, architect, King-street, who was also the architect of the other establishment, in Salford. The cost of the establishment, exclusive of land and furniture, will probably amount to 9,000*l*. The contract for the building has been executed by Mr. Robert Neill; and for the works connected with water and steam supply by Messrs. Melling and Son, of Rainhill.

#### FRATERNITIES OF ART.

BEFORE Mr. White (who addressed so well-intentioned a letter to you, published in your Journal, p. 361) gathers together his fraternities, let him remember that the arts are best developed under reflected light; and no fraternity will be useful that does not embrace men of various pursuits and abilities. The arts are mutually serviceable: they borrow phrases from each other: painters respect tone, and musicians talk of *light and shade*, and thus the first of all considerations in such fraternities is to make the basis wide enough.

A society of architects would but prove the low state of architecture in England. Ask them what it is? they would each give a different definition. How would it have been of old? Ask Pheidias: he would say, "It is an art which, working with its own materials, under its own sun, and its own blue sky, raises, to unknown but venerated idealities, temples, of size sufficiently large to give them *grandeur*, of form so closely allied to the proportions of the human frame as to give them *beauty*, of hues so delicate as to please the *eye*; emanations of minds of the highest genius, appreciated by minds of the lowest cultivation, — the glory of their own age when in perfection, the regret and study of future ages even in their decline."

Ask Bramante, when he first leaned over his design for St. Peter's: "It shall be," he would have said, "an altar which shall attract the religionists of the world to the shrine of their faith: glorious in intention, splendid in decorations, vast in extent; its crowning dome shall be a wonder of construction; its very pavement a marvel of splendour: the throngs that fill it shall find their faith exalted by the very glories which surround them."

Ask Wren: with more simplicity, he would have said, — "We, too, will have our central cathedral, — a church worthy of our country; simple in intention, of native workmanship, of native material; and has he not succeeded? Of all English buildings, St. Paul's, with its dim domed outline against its British sky, and its softened tints of hazy columns beneath, has most emphatic power. And yet his was a struggle to produce an effect from new combinations of very old materials. He was trampled with the forms of the ages past. He was eloquent, but it was in the eloquence of the language of Rome."

And when we did get Stewart's "Athens," and Adams was laughed at, and Wren and Vanbrugh were thrown into shade, what the better were we? Smirke, it is true, tried strongly to bring out the capacities of

Grecian art in England, but the nation grew tired of it, and asked again for the picturesque projections of Whitehall, — the mixed Italian of Palladio, — anything for effect, for contrast, and novelty.

Gothic architecture, that beautiful emanation of the circular arch, the pointed roof, and the plant hand of the old masons, — which has sprung up in cathedrals, and passed through its four marked eras — now lives like a magnificent shrub whose every leaf has been developed, and can but fall when every hand has ceased to gather cuttings from the used-up stem. Such was, and such is, architecture.

Now, let Mr. White think of this: and then talk of fraternities of architects. We want not these, but we may want fraternities of art: but, even these latter, to be useful must be wide: architects, painters, men in fact of all liberal pursuits, must associate freely together less to serve one particular study than to assist all studies, before art can again become the light-giving and spirit-stirring element it once was; and then, too, it would be a solitary affair if the nation remained unmoved under its influence.

Art must then widen itself: it is wholly unselfish: it enthrones itself with the highest capacities of humanity, or it is nothing.

Take Ruskin: admit his theories; or, if not, confute them. The broad truths they contain draw with them many unopposed forces, because they are so broad, so human, so unprofessional. When we have more Ruskins we may hope for fraternity in architecture; — but not before.

AN ARCHITECT.

#### CHEAPENING GAS AND ITS RESULTS.

THE directors of the Workshop Gas Company have just declared a dividend at the rate of 7*½* per cent. for the past year. In 1853 the company was charging seven shillings per 1,000 feet for the gas, and only able to afford a very insufficient supply. They determined on remodelling the works, which was effected under the superintendence of Mr. Gore, the engineer to the company. The result has been that they have been enabled to reduce the price of gas to 5*½* 10*l*. per 1,000 feet, and yet pay an increased dividend. A further reduction to 5*½* per 1,000 is about to be made. Since the reduction from 7*½* to 5*½* 10*l*. the consumption of gas has increased nearly 80 per cent.

#### THE ARCHITECTURAL MUSEUM,

IN THE GOVERNMENT MUSEUM AT BROMPTON.

As our readers already know, the Architectural Museum has been removed from the quaint dirty hole in Canon-row, Westminster, where it was first planted and grew. The old place had a charm of its own, and the new place is less convenient to some who used to frequent it. We are quite satisfied, however, that the committee did right to accept the offer when the Government proposed to provide the Institution, with premises rent free, as it does the Royal, the Antiquarian, and other Societies. The difficulty found in raising sufficient money to meet the annual expenses and pay off the debt incurred on its first establishment; the failure of room; the coldness of the place in winter, which made study impossible; and the want of a good access to the collection, all weighed with the committee, and could lead to no other decision than that they came to. In its new home, the collection is better seen, can be studied during the whole year, and, through its connection with other collections, will be visited by a much larger number of persons than heretofore. The Institution retains its independent position as a private society, with all the original powers of direction and management, and with entire dependence, as before, upon the exertions of the committee, and the contributions of subscribers.\*

The original intention of the founders was to

\* The following is a list of the present office-bearers: — PATRON — His Royal Highness Prince Albert. PRESIDENT — The Earl De Grey. TRUSTEES — Sir Charles Barry, R.A.; Mr. Philip Hardwick, R.A.; and Mr. A. J. B. Beresford Hope, M.P. COMMISSIONERS — Messrs. H. Austin (Cor. Mem.), C. Barry, Raphael Brandon, W. Burgess, E. D. Chantrell, Ewan Christian, H. Clutton, Professor Cocke, R.A.; W. C. Cocks, The Rev. Lord Alwyne Compton (Cor. Mem.), E. W. Cooke, A.R.A.; Professor Donaldson, B. Ferrey, M. A. Gerente (Cor. Mem.), John Gibson, Geo. Godwin, P. O. Hardwick, M. Robt. Hawkins, Sir Walter C. James, Bart.; The Rev. T. James (Cor. Mem.), H. E. Kendall, Jun.; J. L. Pearson, F. C. Penrose, The Rev. J. L. Peitt, A. Salvin, G. Scharf, Jun.; Sir Francis E. Scott, Bart.; E. Sharpe (Cor. Mem.), Albert Way (Cor. Mem.), T. Willement, and T. H. Wyatt. TREASURER — George Gilbert Scott, A.R.A. HONORARY SECRETARIES — Mr. Joseph Clarke, and the Rev. Charles Boutell. ASSISTANT SECRETARY — Mr. M. J. Lomax. AUDITORS — Messrs. Ewan Christian and J. H. Hakewill. CURATOR — Mr. C. Bruce Allen.

form a nucleus of a National Museum of Architectural Art, "to supply that great and increasing want, now felt by the public, architects, artists, and art-workmen, of the means of referring to and studying the architectural art of past ages, and of those arts which have had their origin in architectural art." A large and increasing collection of casts and specimens has been already formed from the finest ancient examples, English and Foreign, of complete architectural works, arranged, as far as possible, in the order of their date; and of details, comprehending figures, animals, and foliage; mouldings, encaustic tiles, mural paintings, roof ornaments, rubbings of sepulchral brasses, stained glass, impressions from seals, and of all other objects of fine art connected with architecture; and it seems to us that Government should now take charge of the Institution, obtaining annually a grant for its increase and maintenance, and appointing the committee as a board of trustees for its management, with power to fill up vacancies. The Greek, Roman, and Renaissance casts belonging to the Department should be added to the collection and arranged in sequence.

The Museum is an admirable school for study. Every architect, and every architectural carver, should send his pupils there regularly to draw.

We are glad to observe that the general public, in passing through the Government buildings, manifest as much interest in the collection forming the Architectural Museum, as in any other, and stop in the gallery as long as they do elsewhere. During the week ending June 27, 6,041 persons in the day time, and 8,017 in the evening, being a total of 14,058, visited the Brompton buildings.

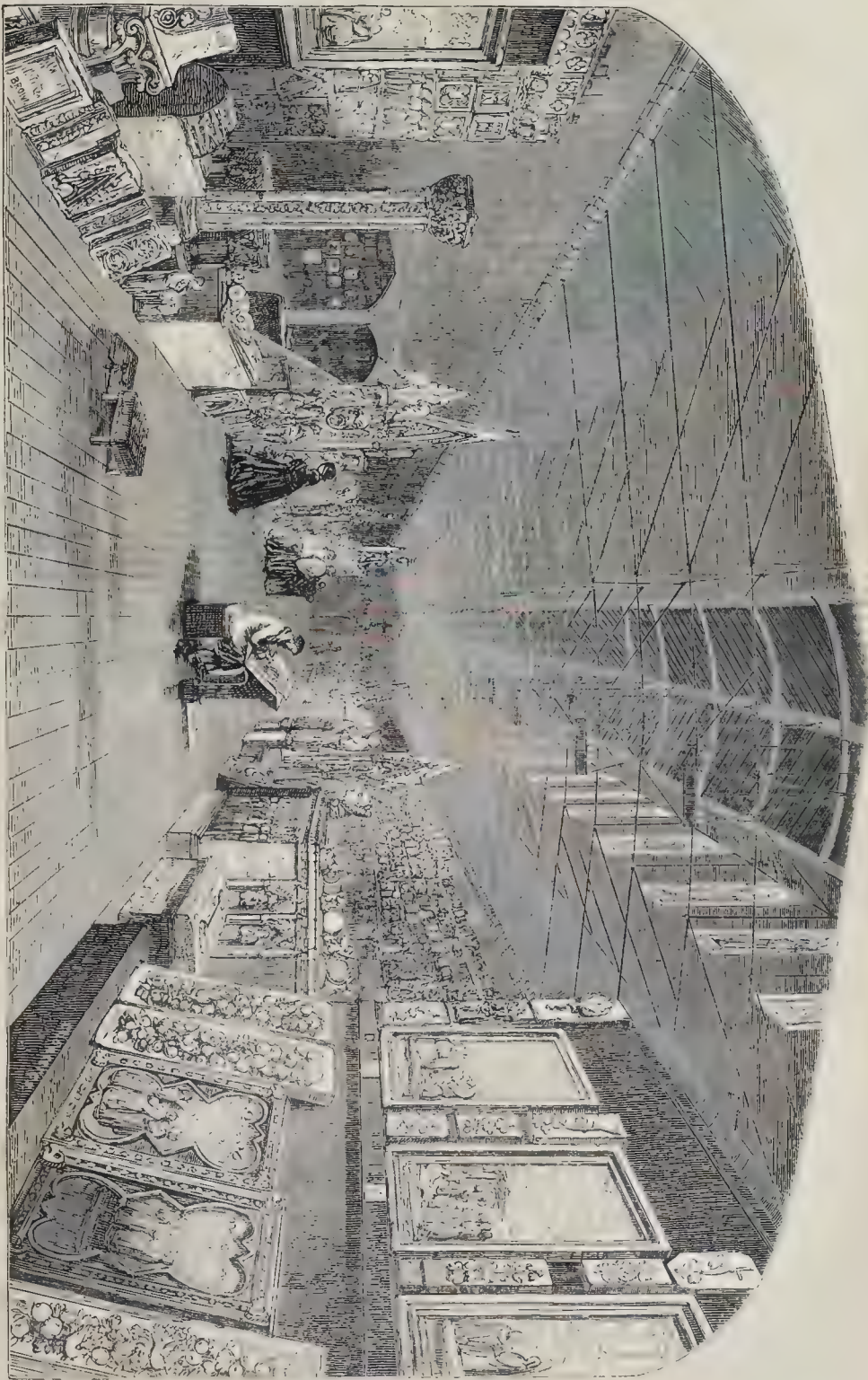
Our engraving represents the gallery viewed from the north end. On the right hand side, in the foreground, are bas-reliefs from the south door of the Baptistery of Florence, cast in bronze (according to the inscription on the door), by Andrea Pisano, from a design by Giotto, in 1330, together with the competition panels, of Lorenzo Ghiberti, and Jacopo della Quercia, of Siena, for the New Testament gates of the Baptistery. The synopsis reminds visitors, that "the number of competitors for this work was seven, three Florentines and four Tuscan. Each artist received a sum of money, and it was commanded that within a year each should produce a story in bronze, as a specimen of his powers, all to be of the same size. The candidates for this work were Filippo di Ser Brunellesco, Donato, and Lorenzo di Bartoluccio, who were Florentines, with Jacopo della Quercia of Siena; Niccolò d'Azezzo, his disciple; Francesco di Valdambrina, and Simone da Colle. Lorenzo Ghiberti, whose work was unanimously pronounced the best, at that time was scarcely twenty years old. He was born in the year 1371, and died in 1455." Amongst the panels are hung some casts from natural leaves, with a view, on the curator's part, of showing how accurately nature had been followed in the foliage of the Ghiberti gates.

Beyond are seen the effigies, on an altar-tomb, of Talbot, Earl of Shrewsbury, his son, and wife.

On the left hand side of the gallery are other panels from the same gates, a clustered column from St. Alban's Abbey Church, seen in the engraving; the font from Patrickton Church, Yorkshire; and part of the effigy of King Edward II. from Gloucester Cathedral. Canopies from the monument of Bishop Acquabianca, Hereford Cathedral, and from the high altar-screen, St. Alban's Abbey Church, may be seen beyond.

The arrangement of the casts on the walls is now undergoing change, so that it would be useless to point out the present position of specimens. When completed, a plan, with numbered references to the casts, will be issued by the committee. All can draw there on the students' days without let or hindrance. Let us add, in conclusion, that the committee of the Architectural Museum are issuing cards of invitation for a *conversazione*, to be held in the Gallery, on Saturday next, the 18th inst. when the subscribers and friends of the Museum will be able to see the present aspect of the collection, to which we are seeking to draw increased attention.





THE ARCHITECTURAL MUSEUM, IN THE GOVERNMENT BUILDING, BRIGHTON.



## CHURCH-BUILDING NEWS.

**Maneroft.**—About four or five years since, St. Peter's Church, Maneroft, was partially re-pewed, with open benches. It was hoped at the time that a sufficient amount would have been raised to get rid of the old high-backed pews throughout the church, but it was found that only the chancel could then be completed. At the parish feast in 1856, an additional subscription list was begun, and now the church has been finally re-opened. The new seats cost about 600*l*. The architect employed was Mr. Phipson, of London, and the carver, Mr. Ringham, of Ipswich.

**Chesham (Herts.).**—A new Congregational Church was commenced here on the 12th of May, and the chief stone was laid on the 23rd ult. The site is in Crossbrook-street. The main building is so placed as to leave a forecourt and is 60 feet 9 in. by 40 feet, accommodating about 400 persons on the ground-floor, and 120 Sunday-school children in a gallery at the western end. The roof is of deal, stained and varnished, open to the ridge, ceiled on the back of the rafters; the ornamental arched trusses forming five bays in the length of the building. In the centre of each bay is a stone, single-light, pointed window, except in one on the south side, where a stone arch recess is provided for the organ. The seats are of deal, stained and varnished. The school-room forms the boundary in the rear, and is 38 feet 3 in. by 19 feet 6 in. with entrance lobby. Between the school-room and chapel there are also infants' room, superintendent's room, and lavatory, and heating-room under the lobby. The style is Geometrical, and the front has a tower and spire 85 feet in height. The materials are stock bricks and Bath stone. The contract is taken at about 1,800*l*, which includes the value of the old materials. The architects are Messrs. Lander and Beddells, of London, and the builders are Messrs. Dove, Brothers.

**Abingdon.**—A vestry meeting for the parish of St. Helen was held on the 2nd inst. as to the restoration of the parish church, and more especially to consider the report of Mr. Street, the diocesan architect, who was employed in the repairs of the tower, which, according to his report, led to the disclosure of further defects which rendered it necessary for him to stop the work, and to recommend the taking down of the tower and steeple. Mr. Street and Mr. Wilkinson had both of them reported what, in their opinion, was necessary to be done to restore the tower and allay all alarms for the safety of the spire, but neither of them had then seen the necessity of taking it down. The views of the former gentleman were adopted by the committee, and, according to his specification, the repairs have recently been in progress by Mr. Walters, when, as reported by the architect, the removal of certain internal plastering disclosed certain cracks, and also that the walls were so insufficiently constructed that the repairs would be of little avail. The vestry was numerously attended, and some feeling was manifested against Mr. Street in consequence of his discovery, which led the vestry ultimately to resolve to refer the matter to Mr. Scott and Mr. Wilkinson, and a committee was appointed to communicate with these gentlemen on the subject.

**Hulme.**—The foundation-stone of the church of St. John the Baptist, Renshaw-street, Hulme, was laid on the 24th ult. The site is an oblong piece of ground, near the new schools built last year by subscription. The new structure will also be of an oblong form, with a tower and spire at the west end, fronting Renshaw-street, which, when completed, will be 192 feet in height. The style of architecture will be Gothic, of the time of Edward III. The upper part of the tower will have pinnacles, and ornamental windows and panels. The east end will be decorated with a large chancel window, the upper part of which will be filled in with ornamental pierced stonework. Internally, the church will present a range of six arches on either side, terminating in a slightly-raised chancel, at the east end. These arches will divide the body of the church into a nave and two side aisles. The roof of the nave will rise higher than that of the side aisles; with a range of small ornamental clerestory windows, giving additional light to the interior. The roof will consist of stained arched ribs; and the seats will be open benches. On the south side of the nave will be sittings for 327 persons. On the north side the pews will accommodate 323, free. The stone to be used in the building is the pierpoint wall stone, from Danford-bridge, Yorkshire, together with ashlar dressings, from Peel Delph, in Lancashire. The cost of the building will be about 6,000*l*. The amount already raised is 4,000*l*, the greater portion of which, according to the *Manchester Courier*, has been contributed by Messrs. T. H. and H. Birley (of the firm of Charles Mackintosh and Co.). The site, which has been purchased of Mr. J. Renshaw, of Didsbury, will cost an additional 1,100*l*. The architect is Mr. E. H. Sellard, of Manchester; and the contractor, Mr. Mark Foggett.

**Ranston-stall.**—A new chapel, called the "Metho-

dist Lee Church," was opened on the 25th ult. The building is erected on an elevation above the railway, on the Haslingden road. The style is Corinthian. There is a portico similar to that of the Pantheon at Rome. The designs are by Mr. Robinson, of Rawtenstall, and the material used is ashlar stone. The contractor is Mr. Walter Sigley, of Ashton-under-Lyne. The woodwork of the interior is stained and varnished, and there is a gallery, supported by columns with Corinthian capitals. The pews are calculated to seat 1,000 persons.

**Carlottes (Yorkshire).**—The new Church of St. Anne, at Carlottes, Penistone, has been opened for Divine service. The edifice has been erected at the expense of Mr. John Chapman, late high sheriff of Cheshire, together with a parsonage-house and parochial schools, upon his estate at Carlottes, in the West Riding. The "architect and builder" was Mr. George Shaw, of Saddleworth, to whom the restorations of the parish church of Ashton-under-Lyne have been entrusted, and which have cost upwards of 14,000*l*. The church at Carlottes is a small Gothic stone structure, capable of accommodating about 300 sitters. All the windows are of stained glass. The east window is decorated, the subjects being St. Anne (the mother of the Virgin Mary), teaching the Virgin to read in her infancy; and the Virgin nursing the Saviour. The west window contains three subjects: the middle is the Crucifixion; one side compartment represents Jesus Blessing Little Children, and the other Blessing his Disciples, and bidding them preach the Gospel to all nations. There is a small Decorated window on each side of the communion-table, in which are the full-length effigies of the Evangelists. The chancel is occupied by eight stalls, intended for the use of the family of the founder.

**Northleach.**—The chancel of the parish church has recently been new roofed, under the direction of Mr. Knight, of Cheltenham, architect. The roof and upper portion of the walls had become much dilapidated by "time and the weather." The works were entrusted to Messrs. Mitchell, of Fairford, and Mr. Acock, of Cheltenham. It is in contemplation to replace the present heavy-looking screen, which does duty for a window at the east end, by a painted or stained-glass window, the framework, which is now filled up with bricks, being adapted for such a purpose. Want of funds alone, it is said, prevents this being at once carried into effect.

**Esrick (near York).**—The church of St. Helen's, the parish church of Esrick, has been rebuilt, and was consecrated on the 1st instant. The church is described in the *York Herald* to be of the corvilinear Gothic architecture, which prevailed in England about the year 1300. It consists of a large central aisle or nave, and one side aisle to the north. The chancel, which presents its front directly to the north road, is apsidal in its termination, and, in design, something like the east end of Lichfield Cathedral, or of Tewkesbury Abbey Church. On the north-eastern side, at the extremity of the north aisle, rises the tower, which is to be carried to the height of 100 feet. At the western extremity of the church is a multi-angulate chapel, formed by a hexagonal centre, with a radiating aisle. It is built over the family vault of the late owners of Esrick-park, and has been erected at the sole expense of the Dowager Lady Wenlock. In the centre stands the font, so that this building is both a baptistery and mausoleum. The roof here is vaulted with stone, and upheld by pillars of red Devonshire marble, from Ipplepen, near Torquay. Marble is also used in the pillars of the nave, from the quarries near Plymouth, which have supplied the breakwater. The roof of the nave is formed with arched trussed ribs of fir, carried by angel corbels. The roof of the church is vaulted with oak. The general dimensions are, in the entire internal length, 121 feet; width of the nave, with its aisle, 38 feet, and the same for the height. The whole building is of stone, both inside and out, with a course of brickwork in the middle of the walls. The stone used for the rough walling is from Huddlestone, near Sherburn, in this neighbourhood, and Whistly stone is used at the ground line. But all the dressed stone has been brought from the Ancaster quarries, in Lincolnshire, conveyed in block from Grautham, and worked on the spot. There is an entrance into the church from under the tower, and on the south there is a porch which, in many old examples, has a chamber above it, here used as a vestry. The turret, which contains the spiral staircase leading up to the vestry, projects a little into the church, and forms a feature in the interior. A rose window at the west end of the nave, above the arch leading into the baptistery, and some small clerestory windows on the north side, are filled with stained glass by Messrs. Hardman, of Birmingham. This window was presented to the parish by the choir. There is also a window by Mr. Ward, of London, at the west end of the north aisle, given by the children of the national school. The chancel windows, which are at present plain, are to

be filled with Bavarian glass. The floor of the church throughout is to be paved with Minton's tiles. All the seats are of oak; those of the chancel stalls of collegiate form. The gas standards and eagle lectern are hammerwork, by Skidmore, of Coventry. The bricks and a large portion of the oak timber used in the fabric were presented by Lord Wenlock. The organ is the work of Mr. G. M. Holdich, of London. It is placed under the tower, and opens into the chancel through an arch. The architect is Mr. Penrose, and the work (which has been done by measurement and valuation) has been executed by Messrs. Kirk and Parry, of Sleaford. The carving has been executed by Mr. H. A. Smith, of London. Some of the wood carving has been executed by Mr. Wolstenholme, of York. The clerk of the works was Mr. Frankham.

**Bromfield.**—The *Carlisle Journal* states that a church just erected at West Newton, in the parish of Bromfield, was consecrated on the 1st instant. Mr. John Todd, of Manchester, a native of West Newton, who had already put down his name as a large contributor to the endowment fund, took the entire expense of this building upon himself, as well as of a parsonage, schools, and master's house. The site was given by Mr. Jolliffe, lord of the manor; and the foundation-stone of the church was laid on the 11th of June last year. The church has been erected by the late Mr. John Walker, of Wigton. It is in the Early English style, and consists of chancel, and nave, with tower and spire. It will accommodate about 200 persons. At the west end is a memorial window, by Mr. Wailes, placed there by Mrs. Barwis, in memory of her daughter, and also of a friend. And in the south side of the chancel is another window by the same artist, placed by Mr. Todd, the founder, to the memory of his late wife. The east window is to be filled with stained glass as a memorial to Mr. Todd himself. The parsonage, which is in course of erection, will stand at a short distance on a site given by Mrs. Wosley, and will be built somewhat in the same style as the church, from designs by Mr. Huggall, of Cheltenham. The school and master's house are not yet commenced: they will be placed on the town green, by the side of the church, with which structure they are intended to harmonise.

## PROVINCIAL NEWS.

**Cambridge.**—A public meeting was held in the Council Chamber of the Guildhall, last week, to consider the expediency of enlarging the town-hall, the necessity for increased accommodation for concerts, &c. having long been felt. Provided the object desired by the Public Rooms Company could not be attained, the prevailing opinion of the meeting was that the site of the town-hall was the most, if not the only, eligible one for the erection of public rooms of the description and size requisite. Several rough plans for a new building, presented by Mr. Wettenhall, were laid upon the table. A general committee, comprising the gentlemen present, was constituted; and a sub-committee was appointed to draw up a memorial to the council, and take such other steps as were deemed necessary.

**Banbury.**—Many parts of this town having long felt the great want of a water supply, about three years ago it was proposed to establish waterworks, and a prospectus of the formation of a company for that purpose was issued. Much beyond that step, and obtaining plans, the promoters did not at that time proceed; but, as the necessity for its operations increased rather than lessened, it has not been forgotten, and it is now proposed to raise capital in shares, and already considerable sums have been thus raised. The water will be drawn from the Cherwell, near to Grimsbury Mill, where land for the purpose has been secured, and where the requisite buildings, with steam pumps and filtering beds, will be erected. Thence the water will be pumped to the highest place within a mile of Banbury, from which the town can readily be supplied by gravitation.

**Hemel Hempstead (Herts.).**—This town, in common with many others, has for some time past felt the want of a corn-exchange commensurate with the requirements of an increasing and important trade in grain and farming produce. The market is entirely freed under a charter of incorporation granted by Henry VIII. and has, until recently, been held in the open space under the new town-hall, which was constructed specially with that view. The attendants of the market have suffered so severely from constant exposure to the weather, that the present high bailiff determined upon enclosing the under part of the town-hall, which has been carried out, and a commodious and well-lighted room formed, 50 feet long, and 25 feet wide, from the designs, and under the directions of Mr. George Low, of London, architect, who erected the present town-hall, in 1851. Mr. Sear, of Hemel Hempstead, was the contractor. The



exchange was formally opened and inaugurated on the 19th ult.

**Hertford.**—The town council have resolved to memorialize the Lords of the Treasury for powers to borrow the sum of 600*l.* for the improvement of the corn-exchange at Hertford. Mr. Evans is the architect whose plans have been accepted. The alterations now to be carried out in the corn-exchange will, at same time, adapt it to the uses of the public library.

**Croydon.**—It has been resolved to erect a public lecture-hall here, and for that purpose a company, on limited liability principles, has been formed. The Croydon Literary and Scientific Institution alone has an income of 270*l.* and upwards, and would make use of the hall, paying a rental. There is also a Temperance Society. It is considered that 3,000*l.* will be sufficient, and that a return of 150*l.* a year in rental should suffice to remunerate the company for their outlay.

**Tenbury (Worcestershire).**—It has been determined by the inhabitants of Tenbury to pull down the present dilapidated and badly arranged poultry and butter market, and to erect a new building on the present site, increasing it in size as much as necessary. Mr. Cranston, of Birmingham, is engaged by the committee to design and carry out the work.—A joint-stock company has been formed here, for the purpose of purchasing a large lot of badly occupied property, in Teme-street, called Robinson's-court, and erecting a town-hall and corn-exchange, with rooms for county-court purposes, and for magistrates' meetings, &c. The necessary plans have been prepared by the architect just named.

**Rugby.**—The foundation-stone of a new town-hall was laid here on the 22nd ult.

**Bawtry.**—The first stone of an infant-school has been laid at Bawtry. It will be in the Elizabethan style, and 30 feet by 16 feet, on a plan provided by Mr. J. G. Weightman, of Sheffield, architect. Mr. Howard, of Bawtry, is the contractor, and the cost of erection will be 845*l.*

**Dunbar.**—Long-projected improvements upon this harbour are now about to be carried into effect. The Treasury are said to be prepared to sanction an outlay of 30,000*l.* towards carrying out the improvements and alterations on the Victoria Harbour, agreeably to plans which the local magistrates have laid before them. The harbour will then be capable of admitting vessels and boats at low water, by which shelter will be obtained by them at all times, instead of running for the Firth of Forth in a storm.

**Montrose.**—At a recent meeting of the local council, reported in the *Montrose Review*, the clerk stated that he had received several tenders for the building of the new markets, according to the plans by Mr. Mathews, of Aberdeen, and Mr. Moffat, of Edinburgh; but the lowest was considerably above the highest sum fixed by the council,—the lowest, according to Mr. Mathews's plan, being 1,441*l.* 17*s.* and according to Mr. Moffat's plan, 1,823*l.* 7*s.* 6*d.*; whilst the highest, according to the former, was 1,937*l.* 3*s.* 4*d.* and to the latter, 2,089*l.* 5*s.*

#### CORPORATION WORKS IN LIVERPOOL.

We glean the following items from the evidence of Mr. Shuttleworth, before the committee on the Mersey Conservancy and Docks Bill:—

In 1839 the corporation built a lighthouse near New Brighton, at a cost of 30,000*l.* The corporation, about fifteen years since, erected a machine on their own land for testing chain cables, at a cost of 11,144*l.* A small charge was made, but not equivalent to the cost of maintaining it, and the average deficit was 100*l.* a year. Mr. Shuttleworth stated some of the causes which led to the erection of St. George's Hall. On Lancashire being divided into two portions, for assize purposes, the corporation undertook to provide courts in their session-house, and also lodgings for the judges. The session-house for a considerable period was inadequate, but the corporation refused to erect a new court whilst their right to the town-dues was in dispute. Other parties were desirous of erecting a music-hall, and the result was, that the corporation undertook to erect the St. George's Hall at their own expense. The original architect was Mr. Elmes, now deceased. The estimate was 90,000*l.* but it had been largely exceeded, and 200,000*l.* had now been expended. The corporation also constructed a landing-stage used by sea-going steamers, at a cost of 5,157*l.*; it was several years constructing, and was opened about fifteen or sixteen years since: its annual charge was 927*l.* A representation had since been made that it was insufficient, and a new stage, 1,000 feet long, was now constructing, and nearly finished, at a cost of 130,000*l.* The money had been borrowed, and would be repaid by a sinking fund of 2,600*l.* a year, whilst its annual cost would be 6,000*l.* In 1840 the corporation gave and for a Sailors' Home, and Sailors' Savings' Bank,

estimated to be worth 8,500*l.* In the same year they commenced the construction of a new observatory. The cost of the building and instruments was 10,342*l.* It was maintained at considerable cost, and though a small sum was received for rating chronometers, the expense exceeded the income by 600*l.* a year.

#### TWESKESBURY.

TWESKESBURY, situate, as most of your readers know, about 15 miles south of Worcester, is a very pretty town, possessing long and spacious streets, the modern dwellings picturesquely diversified by those timber-frouted houses which are fast disappearing. Most of these retain unaltered the original windows, or, to speak more properly, the continued window, extending along the whole front. The great attraction, however, of Tweskesbury, is the fine old Abbey Church, a mitred abbey, pronounced by some archaeologists to be now the finest parish church in the kingdom. The pier arches of the nave are borne on those enormous cylinders (here 20 feet in circumference), which are usually supposed to indicate an early stage of Norman architecture in England, and yet the mouldings of the comparatively diminutive round arches they carry do not seem consistent with a very remote origin. The extreme disproportion of these arches to the heights of their supports struck me as radically inelegant. There are no sculptured capitals, but an abacus with plain mouldings beneath; and it is somewhat difficult to separate with precision the two members. Above are a curious little ambulatory, which from its position we must call triforium; little round arched openings in couples; and at top the clerestory windows, round-headed, but now divided by mullions of the fourteenth century. These upper stories are insignificant, the relative proportions between the different stages of the elevation essential to pleasing effect being quite destroyed by the undue importance given to the ground story. The vaulted stone roof (with pointed pier ribs) appears at first sight somewhat complicated in construction, from the number of ribs which intersect and cover it; but I suspect many of these to be merely applied, that is, surface ribs, for I could not satisfy myself that there existed a groin behind every rib. It is considerably lower than the original roof, the tops of the clerestory windows now rising above it some feet. Its former elevation is distinctly marked outside on the central tower. The piers of this choir (this ends in a polygonal apse), though lower, are proportionately as bulky as those of the nave, and denote at least as early a date; but the pointed arches they carry are of Decorated design, though meagre and ineffective. The windows of this portion of the edifice are of the style last mentioned, but the tracery is poor. The stained glass is very pleasing. The vaulted stone roof is rich and complicated, and the bosses at every intersection of the ribs are most of them of merit. The choir-aisle, with the chapels opening upon it, recalls the arrangement of the French churches. The ball-flower ornament is extensively used in this part of the church, and very well worked. There is an inexhaustible fund of interest in the tombs contained in this edifice, most of them of great merit, and some exhibiting singular grace and elegance in general design and detail. I will, however, only briefly refer to those which most struck myself. The most beautiful, I should say, is the one erected to the memory of a member of the De Spenser family, said to have been the next lineal descendant of that De Spenser, the favourite of Edward II., beheaded (I think) in the courtyard of Warwick Castle. This rises pyramidally in most exquisite proportions, in three graduated stages of open work arches, pinnacles, canopies, &c. Though totally different in detail, it called to my mind the tomb of the Scaligeri, at Verona. There is a second one much resembling this, and perhaps equally worthy of praise; and a third raised to the memory of a warrior who fell at Tweskesbury fight, in 1461. The recumbent effigy of the gallant knight is, however, clothed in armour, of a century earlier. The Sedilia must not be overlooked, an admirable example of this appendage of a church of the Decorated era. The triangular canopies over each seat have been wilfully mutilated. The original colouring, within and without, is very well preserved, in which prelo-minate vermilion and green. Behind the apsidal termination, there exists (though now shut out from the church), the Lady Chapel of the Early Pointed era. It is now used as a grammar school: the floor has been raised some yards; the bases and a great part of the vaulting piers hidden, and the proportions utterly marred. I have omitted to notice a singularity of construction to be found in the choir. Behind each pier arch is constructed a second arch, or what purpose I could not satisfy myself, which at first sight I felt confident must have been an after-thought of the architect. On a closer examination, this opinion was somewhat shaken by the identity in section of the mouldings of the two arches. Can the

addition have been rendered necessary by some change introduced in the roof of the choir aisle? I know some examples of this practice in continental churches.

The central tower is Norman, too low and broad to possess any claim to elegance; and it is not until a near approach that you become aware that the detail is very good, and in some parts almost delicate. The pinnelling of the stages exhibits some rather singular features, and the cherron, in all its forms and varieties, is abundantly employed. The west front is, so far as I know, unique in its arrangement, striking from its singularity rather than its beauty. The whole height and breadth are filled up with one large circular arch, formed of six recessed rolls, resting on as many shafts, in square recesses. At top is opened the window, the present one an insertion of a date somewhat later than the beginning of the seventeenth century, and below, the doorway also comparatively modern. I never saw an arrangement which appeared to me so destitute of grace. There is, however, one part of this front of great interest. At the corners stand little solid square turrets, having each angle concealed by a cylinder, capped with a cone, and from the midst of the four rises a taller cone—a *nascant spire*. All about these is undoubtedly original (with the exception of added finials), and the arrangement strengthened an impression which I have long entertained, that the noblest external feature of a sacred edifice, the spire, had entered into the conceptions of the men who flourished before the adoption of the Pointed style, though the glory of fully developing the idea was reserved for their successors; and that the Romanesque builders have full claim to the merit of which some would deprive them by maintaining that the spires surrounding certain Romanesque towers in France (I would instance those of *Basse Allennay*, *Montpouilliers*, near Havre, and *Cunault*, on the Loire), were additions and improvements not contemplated by those who raised the substructure. No one can deny that we have here in charming simplicity the elements of the most beautiful features of our Early Pointed churches; their light and elegant open turrets, their tapering pinnacles, and their crowning glory, the heaven-directed spire.

VIATOR.

#### DICK'S LIFE-PRESERVING AND VENTILATING SASHES.

AN arrangement to obviate the risk of life in painting, glazing, or cleaning windows from the outside, as is now the case, has long been desired, and has led to many inventions more or less applicable. By the mode patented by Mr. Dick, all this may be done by the person inside, without moving from the floor: the sash may be turned upside down, or allowed to lie flat, as found most convenient. The sashes can likewise be removed from the frame with the greatest ease, without the inconvenience of removing the beads, or having new cords attached, or taken out altogether, to admit any large piece of furniture without removing the cords from their place. It likewise affords a safe means of ventilation, by bringing the top sash down a little, and allowing the top of the bottom sash to incline a little into the room; by these means forming a ventilator, admitting the cold air at the middle of the window, and allowing the hot air to escape at the top. Individuals sitting in the room are not exposed to the draught. It is applicable to old sashes equally as to new. The arrangement consists in cutting down the sash on each side, in a line with the face of the parting bead; a joint is made wtertight, and the sash is hung by a strong attachment to the bottom of the slip, thus cut off, so that when released at the top, where a catch secures it, it can be turned over into the room. The increase in the cost is but trifling.

#### BRONZE CASTING AND POLISHING.

I BELIEVE an inquiry has been made in your Journal more than once, as to the material and mode of polishing and working the surface of works in bronze. The following extract from Father Marchese's "Lives of the most eminent Painters, Sculptors, &c. of the Order of St. Dominic," translated by Meehan, may supply some information on this subject:—"Portigiani, temp. 1550, the man who in his time was second to none in the difficult art of casting in bronze,—the man who assisted the celebrated sculptor, Gian. Bologna,—whilst in the convent S. Marco, Florence, resumed from time to time his early habit of modelling and casting in bronze, and executed various works, most diligently and excellently; and as the memoirs of the convent inform us, cast fountains, statues, bells, candelabra, and all sorts of domestic utensils. These memoirs know no limits to praise, when speaking of the wonderful polish which he knew how to give to the various descriptions of bronze ornaments; and every one acquainted with the arts of design must be aware what diligence and skill a



man must possess before he acquires distinction in this particular branch. In fact, after making the cast, an artist of this sort must know how to ply the burin, the chisel, and the rasp, giving relief to the composition whenever necessary, and the most elaborate smoothness to the surface. This, we need scarcely say, is finally accomplished with the rasp and pumicestone. As to the colouring, the agencies usually employed are, oil, vinegar, and varnish, according to the tint which the artist desires to give to the bronze, which is generally coloured black or green. Requirements such as these will convince us, that a bronze-caster must possess singular skill and practice before his work can appear in its integrity and purity; and it should be borne in mind, that Ghiberti employed the most distinguished sculptors and goldsmiths of Florence to help him in polishing the bronze gates of S. Giovanni, before they were hung on their hinges."—*Fol. 2.* F. L.

#### CAMBRIDGE BARRACKS, PORTSMOUTH.

SOME of the additional ranges of building are now in progress here to form quarters for forty-four officers. In length the additional range is somewhat more than 361 feet. The brickwork is of white bricks, from Beaulieu; the dressings, centres, gateway, and cornices are of Portland stone. The carriage, in the Royal arms surmounting the cornice, is a work of considerable cost. The new wing to the soldiers' barracks, in the rear of the parade-ground, will afford accommodation for above 1,020 men, and is of red brickwork, with Beaulieu brick dressings; the out-offices cover a large extent of ground, and will conduce much to the health and comfort of the men. The school-rooms and library in connection with the additions will shortly be commenced. The drainage is being carried into the sea below low-water mark, and passes under the fortifications, lunette, reservoirs, and parades. The whole substrata being under tidal influence makes this a difficult work: one of the land springs crossed in excavating for this work yielded about 700 gallons of water per minute, which was raised by a centrifugal pump. The time stipulated for completing the original contract, which was taken by Messrs. Lee and Lavers, of Belvidere-road, Lambeth, at 32,700*l.* was the 30th November next. The foundation-stone was laid on the 20th June last, and the buildings will be completed about the end of July. The work is being executed under the superintendence of Mr. Hawken, of the Royal Engineer Office. The mess-room is 61 feet by 26 feet; fencing-room, 34 feet 4 inches, by 37 feet. The design is so arranged that the commanding and field officers will have a suite of rooms with separate entrances. The architect is Mr. R. O. Menzies.

#### THE ORGAN IN ST. PAUL'S CATHEDRAL.

I READ in the *Builder* some time since a not very dignified complaint on the part of "An Amateur," against the fine old organ in St. Paul's Cathedral. Feeling interested in the dissemination of truth as opposed to ill-founded and mistaken prejudices, I forwarded the article to a gentleman connected with the cathedral, who, I perceive, has treated its author with silent and perhaps well-merited neglect, and, in fact, "let him alone most severely." To any one moderately acquainted with organ matters, it would surely be known how universally Schmidt's organs are prized, on account of the beauty of tone, which, if it can be equalled, certainly cannot be surpassed by the cleverest artificers of the present day. As to Schmidt's being an "unknown workman," it is sufficient to remark, that the work of re-erecting the organs throughout the country subsequent to the Restoration was shared between him and his rival, Harris, while Dr. Burney\* (a sufficient authority even "An Amateur" must admit) has left on record, in favour of Schmidt, a most unequivocal testimony to his talents as a workman:—"The number of organs built and enriched with new stops by Father Schmidt is prodigious, and their fame equal to that of the pictures of Raffaele: a single stop known to be of his workmanship is still invaluable," &c. So much for Schmidt's being a little known or unskilful workman. As to the organ in St. Paul's being "an outrageous machine!" I can only say that for many years it has been found, in the opinion of those who know best, amply sufficient for the choral service of the Church of England, which does not require an organ uniting the size of six, and the noise of half a dozen brass bands. I saw nothing "outrageous" when last I played upon it, a pleasure (non obstante amateur) of which I have yet a vivid recollection. At the same time a venerable instrument, over which nearly 200 years have passed, cannot, however improved, be expected to display all the mechanical up-bounds and comforts of a new one. A CHURCHMAN.

\* Hist. Mus. iii. 439.

#### PRACTICAL PROBLEMS.

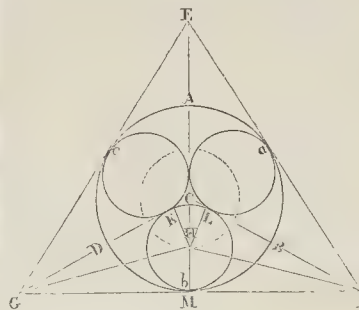


Fig. 1.

To describe the figure of a Model, for a cast-iron Casement, of the form of a Circle, circumscribing three equal Circles touching each other and the circumscribing Circle. (Fig. 1.)

TAKE any point C, and from the centre C, at the distance CA, equal to the radius of the given circle, describe the circle ABD; divide the circle ABD into three equal sectors, CAB, CBD, CDA, and bisect their arcs in the points, a, b, c; draw the straight lines EF, FG, GE, touching the circle ABD at the points a, b, c; produce the straight lines CA, CB, CD, to meet these tangents in the points E, F, G, making the three equal triangles CEF, CFG, CGE; bisect the angles, CGF, CFG, at the base of any of these equal triangles, CFG, by the straight lines GH, FH, meeting one another in H; and from the point H draw the straight lines HK, HL, HM, perpendicular to the sides CG, CF, FG, of the triangle CFG. Then (Euc. bk. 4, prop. 4), the straight lines HK, HL, HM are equal to one another, and the circle described from the centre H, at the distance of any one of them, will pass through the extremities of the other two: and because the angles at K, L, M, are right angles, each side of the triangle CFG will touch the circle; the circle KLM is, therefore, inscribed in the triangle CFG. The same construction being made, equal circles may be inscribed in the other two equal triangles touching each other, the circumscribing circle, and the first inscribed circle, KLM.

Note.—The radius of any of the equal inscribed circles may be expressed by the term  $mr \tan \frac{\pi}{3}$ .

For let  $m$  represent  $\tan \angle HGM$ ;  $HM = mGM$ ;

$GM = CM \tan \angle GCM = r \tan \frac{\pi}{3}$ ;

$\therefore HM$  (the radius of the circle KLM)  $= mr \tan \frac{\pi}{3}$ ;

i.e.,  $r' = mr \tan \frac{\pi}{3}$ , if  $r'$  and  $r$  be taken to denote the radii of the inscribed and circumscribed circles respectively. Also  $mr \tan \frac{\pi}{3}$  will be the general expression for the common radius of any of  $n$  equal circles, inscribed in a circle, touching each other, and the circle in which they are inscribed.

For the same purpose, it is required to describe an equilateral Triangle about a given Circle. (Fig. 2.)

FIND C the centre of the circle ABD, and draw the diameter AD; trisect the semicircumference ABD in the points B, E, and join CB, CE; draw the straight line FG, touching the circle at the point D; produce BC, EC through C, to meet the circumference in H, K, and CB, CK to meet the tangent BG in the points F, G; and through the points B, H, draw tangents LF, LG, meeting each other in the point L, and the straight FG in F and G. The triangle LFG is equilateral, and it is described about the circle ABD.

Cor.—Since the straight lines CB, CD, CH, are radii of the circle ABD, and perpendicular to the sides LF, FG, GL of the triangle LFG, it is obvious that the area of the triangle LFG is equal to the rectangle under the radius of the inscribed circle, and the semiperimeter of the triangle LFG, and, by reference to the construction of the general case (Euc. bk. 4, prop. 3, the same may be predicated of any triangle described about a circle.

Note.—The equilateral triangle can be shown to have the least area of any triangle described about a given circle, and the greatest area of any triangle inscribed in a given circle.

Cambridge.

A. J. TOMPKINS.

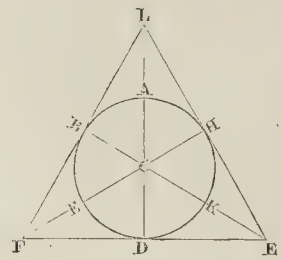


Fig. 2.

#### DECISIONS UNDER METROPOLITAN BUILDING ACT.

*Projecting Closets on Brackets.*—At Marlborough-street Police-court, on the 30th of June, Messrs. Duncanson and Moultrie were summoned before Mr. Beadon, by the district surveyor for South Marylebone, for an alleged infringement of the Building Act in a house, No. 74, Great Titchfield-street.

Plaus were produced, from which it appeared that the defendants had removed a staircase window, and had thrown out a water-closet at the back of their premises, which addition rested on brackets. It was contended, under the 9th section of the Act, that the projection should be deemed an alteration or addition, and that such addition, according to the first schedule, should have the walls constructed of brick or stone resting on concrete.

It was admitted that the projection in question did not rest on solid ground or concrete, but was supported by brackets attached to the wall. The water-closet was of 1-inch slate, supported on a slate landing. One side of the closet extended over the line of the party-wall.

Mr. Roberts, architect, for the defendants, contended that such projections were never intended to be included in the Act, which had specially excepted balconies and verandahs, and therefore intended to except all projections of a similar nature: that a balcony was the foundation of the closet: that as an architectural projection, it was not contrary to the Act; but that, at all events, it was an enclosed verandah, in which, at the time this summons was taken out, there was no seat or woodwork of any kind. Under the 26th section, he contended that the defendants were entitled to have the summons dismissed.

A long legal argument ensued between the parties, at the conclusion of which—

The magistrate said he did not think himself bound to make any order to take it down, but did not express any opinion on the various questions raised.

Srs.—I have just read in the papers the judicial decision of Mr. Beadon, in the case of a closet thrown out on brackets, by Messrs. Duncanson and Co. Titchfield-street, under the Building Act, and I confess myself much surprised at the decision. I do not observe it stated how the sides are built, whether of timber or brick, or whether the brackets which support it are wood or iron; but in either case it seems to me to act at nought one of the most important provisions of the Act. Balconies and verandahs are well-understood terms, and assumed to be open, but by what stretch of language can a water-closet, which is of course enclosed and covered, be called by either name? Is it because it has an apparatus?—If so, what is it, if it is a store closet of the same size, and of course without this appendage? Is it because it is presumed to be only some 3 feet by 5 feet?—If so, what is it if it be double or treble that size? What is and where is the limit to be fixed? The existence of these conveniences "on brackets" was so well known and understood that, had the Legislature intended to allow them, it seems hardly possible they could have been forgotten and overlooked. One similar to this, but with quartered sides, has since the last Act been erected within view of my windows. Of what use is a brick-back front, as a protection against fire, with this lath and plaster construction projecting to invite the flames? INVENTIGATOR.

*Ruinous Buildings.*—At the Westminster Police-court, on the 2nd instant, Mr. Reeve attended to apply for a summons in order to have the premises, known as the Gun Tavern, Pimlico, which are in a dilapidated state, rendered secure.

Mr. Arnold. To whom does the property belong?

Mr. Reeve.—It belongs to the Crown.

Mr. Arnold.—Then I cannot act. The Crown, as a general rule in law, is not bound by any order I may issue.

Mr. Reeve referred to the Act, and said that he thought there were clauses in it by which the Crown would be liable to the process of a summons.

Mr. Arnold.—Suppose the Crown refuse. Did you



ever know of an instance of an application against the Crown being granted?

Mr. Reve explained, that if a summons were granted, and were not acted on, the Commissioners of Police would proceed to protect the premises, and recover the expenses from the owner.

Mr. Arnold observed, that the better course would be to give notice to the Office of Works that application was made for the summons, and to adjourn the application to a future day, so that they might have an opportunity of attending.

**Unsound Buildings.**—Having on one or two occasions lately been professionally engaged in estimating damages to houses that have been seriously injured by adjoining houses having been pulled down in default of proper and sufficient shoring having been first affixed, I wish to call public attention to the fact that, where property is injured by ignorant or careless builders, in such cases a remedy at common law exists. In nine cases out of ten, houses at the present time are seriously endangered by the adjoining ones being pulled down in the absence of proper shoring.

A SURVEYOR.

#### METROPOLITAN BOARD OF WORKS.

At the usual weekly meeting of the Board, on Friday last, a number of applications were received and considered relative to buildings under the Act. Although possessing little interest for any but the parties concerned, we may for once give a list of them, with the decisions of the Board, to show the class of applications which comes before them:—

##### Regular Line of Buildings under Local Management Act, sec. 143.

**Nevington, &c.**—Shops at Nos. 1 and 2, Gloucester-place, East-lane, Walworth. From Mr. George Hammond, for consent. Approved.

**Islington.**—Brewery in Seven Sisters'-road, Holmway. From Mr. Charles Barlow, architect, on behalf of Mr. Thomas Whitaker, for consent. Approved.

**Lambeth.**—Four Houses and Shops, Nos. 8 to 11, Loughborough-place, Brixton. From Mr. John Johnson, architect, for consent. Approved.

**St. Paneras.**—Addition to House, No. 33, Fitzroy-terrace, New-road. From Mr. Richard Richardson, on behalf of Mr. William Squire, for consent. Approved.

**St. George, Hanover-square.**—Shop at No. 50, Park-street, Grosvenor-square. From Mr. Edward Darby, for consent. Approved.

**Projections under Building Act, sec. 26, and Buildings under Local Management Act, sec. 143.**

**Lee.**—Coachhouse and Portico at No. 2, Cornwall-terrace. From Mr. George Legg, architect, on behalf of W. Brown, esq. for consent. Portico only granted.

**St. Marylebone.**—Balconies to No. 62, Harley-street, Cavendish-square. From Messrs. Hind and Allred, for consent. Approved.

**Woolwich.**—Bow window to house, No. 29, Francis-street. From Mr. Henry Bland, for consent. Approved.

**Stoke Newington.**—Eaves to Mr. Porter's House, Park-road. From Mr. J. Pope, for approval. Approved.

##### Buildings under Building Act, sec. 56.

**Bermondsey.**—Stables and shed at Cole's wharf, Shad Thames, St. John, Horselydown. From Mr. W. A. Boulnois, architect, on behalf of Messrs. Bovill and Sons, for consent. Approved.

**Kensington.**—Furnace chimney-shaft for flour-mill, at rear of Nos. 1 and 2, High-street, Notting-hill. From Mr. William Mumford, architect, on behalf of Mr. Brewer, for approval. Approved.

**Paddington.**—Furnace chimney-shaft, at No. 4, Irongate wharf. From Mr. Robert Greig, on behalf of the London General Omnibus Company, for approval. Approved.

**Bethnal-green.**—Furnace chimney-shaft, at Victoria Works, Green-street. From Messrs. Palmer and Co. for approval. Approved.

**Linehouse.**—Furnace chimney-shaft, at Messrs. Walker, Taylor, and Co.'s brewery. From Messrs. Moreland, for approval. Approved.

**Lambeth.**—Furnace chimney, at Mr. Stiff's premises, Broad-street. From Mr. Stiff, for approval. Approved.

**Lambeth.**—Furnace chimney, at Messrs. Sowerby's premises, Broad-street. From Mr. William Wills, for approval. Granted with conditions.

**Kensington.**—King's Arms Tavern, temporary wooden building. From Mr. George Hunt, on behalf of Mr. Martin, for approval. Approved.

##### Proposed Offices for the Strand District.

On an application from the Board of Works of the Strand District, relative to borrowing the sum of 4,000*l.* for the purpose of erecting an office for the district, Mr. Marrable, the superintending architect,

reported that he had examined the drawings that had been prepared by the surveyor of the Strand district, and was of opinion that the contemplated works could not be properly executed at a less cost than 3,900*l.*

#### CANADA.

The following tenders were delivered for additional buildings to the Osgoode Hall, in Toronto, for the Law Society of Upper Canada, according to the designs of Messrs. Cumberland and Storm, architects to the society.

	Excavator, Bricklayer, Plasterer, and Scaffolder.	Carpenter, Joiner, Smith, Framer, and Plumber.	Plasterer.	Glazier and Painter.
Worthington, Bros.	15,229 0	£ s	£ s	£ s
Benjamin Walton	13,571 0			
W. H. Pym	9,093 0			
Thomas Storm	8,722 0			
George Setting	8,492 0			
Jacques and Hay	7,728 0			
T. Keddam		2,524 0		
J. Loftus		2,380 10		
J. Foster		2,195 0		
Hynes, Bros.		2,070 0		
J. Carr			2,300 0	
A. Hamilton			2,097 0	

\* Accepted.

The plastering of the library (estimated to cost about 1,800*l.*) is not included in the above.

The sum of 2,250*l.* has to be added to the stone-cutter's tender for the execution in Caen stone of the arcade in the centre-hall.

#### ARTIFICIAL MARBLES.

AN Italian correspondent has sent to the *Athenaeum* some notes on a new process for the manufacture of artificial marbles, invented by the Marchesi Campana. He says, "The Fabri is at San Giovanni, en route to Portici. In a large chamber, I found specimens of various species of the marble worked into tables, vases, pedestals, and cornices. Porphyry, rosso antico, giallo antico, broccatello, and other marbles, were there: so the eye declared, and neither myself nor my friends could have distinguished between them and the real marbles. They were marked by the same 'ring' on striking them, by the same appearance in the internal formation, and by the same high polish on the surface. In fact, we were witnesses of the mode of polishing adopted, which resembled exactly that used for marbles, that is to say, pumice-stone and water in the first instance, and a hard, cross-grained stone, here called 'lavagna,' after. Adjoining the fabric, we were shown the roof of a house which had been covered with this material, and had resisted the heat of two summers and the cold and frost of two winters; yet not the slightest impression had been made by either. \* \* \* As yet only two fabrics [of these marbles] exist—one in Rome and the other in Naples. In London, an imitation has been attempted; but it is limited in its range, not embracing any other varieties than porphyry, giallo antico, and rosso antico, and it is nothing more than a plaster laid over a hard stone, such as lavagna, whereas the Marmoridea is one solid substance."

A patent has just been taken out by Mr. John Baker, of Thirsk, on behalf of a Canadian relative of his (Mr. J. H. Headley, of Walpole), for plating or veneering a mass of coarse stone so as to present an exterior coat of marble. For the substratum, sand, gravel, or almost any kind of pulverable, mainly silicious, rock may be employed. After the particles of this have been reduced to the requisite degree of tenacity, the mass is mixed with protoxide of calcium. When amalgamated, the mass is moistened, then placed in a mould to be coated with carbonate of lime, and afterwards subjected to powerful hydraulic pressure. Mr. Headley thus imitates the qualities and varieties of different kinds of marble. He has employed oxide of iron largely as a colouring material, and fluids that by silicate of potash extra-hardness is given to the block, which renders it susceptible of a high degree of polish. The patent right has been sold in eight counties for 12,000*l.* Messrs. Peto and Brassey have paid 4,000*l.* it is said, for a license to use it in the construction of the bridges of the Grand Trunk Railway.

**SCHOOL OF ART FOR IPSWICH.**—Measures are being taken towards the formation of a school of art in Ipswich, and, according to the Rev. W. Campbell, one of Her Majesty's Inspectors of Schools, there is a fair prospect of support from the public and private schools of the town. A public meeting will probably be called shortly for the purpose of founding the school.

#### THE DEPARTMENT OF SCIENCE AND ART.

THE fourth report of the Department of Science and Art, for the year ending December 31st, 1856, has been published. It commences by alluding to the transfer of the Department from the Board of Trade to the Board of Education, by order in council; and proceeds to consider the various services over which it has control, including metropolitan institutions, secondary instruction, primary instruction, formation of examples, and public services.

The institution and service in London are the Geological Survey, Mining Record Office, School of Mines, Museum of Practical Geology, Training School of Art, Female School of Art, Museum of Ornamental Art, circulating museum and circulating library. Of the geological survey of Great Britain, maps embracing an area of 2,357 square miles have been published, while others, comprising 996 square miles, are about to be issued. In Ireland, 1,604 square miles have been surveyed; but an unavoidable delay has prevented the issue of a corresponding portion of the maps. That the public begins to appreciate the value of these maps is proved by the fact that the sale of maps during the past nine months has doubled that of any preceding year. The Mining Record Office continues to gather much useful information, and during the past year 146 plans and sections of mines have been deposited in the office, besides a mass of valuable statistical documents. A slight falling off in the attendance of the students of the School of Mines is shown, while the lectures to working men have been eminently successful. The laboratories of the school are fully taken advantage of by the public, and papers of original researches in the laboratory continue to be published. The number of visitors to the Geological Museum is 20,415 for 1856, being an increase of 7,360 over the previous year.

The total number of teachers in training in the Normal Training School of Art has been 106, of whom seventeen were females. Thirty-seven took certificates during the year, and twenty-one have been appointed to masterships in schools of art. A large increase of the number of parochial school children, taught in connection with the central school, has taken place. The number of students attending the Female School of Art has fallen from 144 to 126, and the fees from 259*l.* to 240*l.*

Considerable additions have been made by purchase to the Museum of Ornamental Art, regulated by a desire to complete specific collections. The number of visitors during the year was 111,768, against 78,427 in the preceding year, though the museum was open twenty-one days less in the past year. A peripatetic selection from this museum has been exhibited in Sheffield, York, Newcastle-on-Tyne, Caernarvon, and Hanley. The collective number of visitors was 32,852, of whom 27,436 paid for admission. The Art Library of the Department was closed three months for removal to Brompton; during the remainder of the year, the number of visitors was 5,346. Arrangements have been made to circulate important works of art among the local schools of art.

The Museum of Irish Industry has received considerable addition during the year, and has been visited during the day by 15,329 persons, and in the evening, when lectures are delivered, by 16,282; showing a total increase of 6,603 upon the previous year. The number of persons who submit to the examinations upon the subjects of the lectures delivered in the School of Science, connected with the Museum, has also increased.

The varied objects of the Royal Dublin Society have been prosecuted with vigour, and a marked improvement has occurred in the returns for the present year in most of its departments; the exceptions being the School of Art, and the lectures on chemistry, physics, and natural history.

The gardens of the Royal Zoological Society of Ireland have been considerably improved. 124,976 persons visited them during the year.

The experiment of instituting examinations in connection with the provincial lectures in Ireland has been more successful than could have been expected. The character of the answers received has naturally been unequal in the different towns, but, as a whole, have elicited the admiration of the Examiners, generally professors of Trinity or the Queen's Colleges.

The Normal Lace School, established in Dublin, although successful as a school of general instruction, has proved a failure as regards its speciality. The Department recommends the gradual withdrawal of the Parliamentary grant of 500*l.* voted hitherto for its support.

The interest manifested in the National Museum of Scotland has produced such large accessions to the collections that it now becomes necessary to carry out the intentions of Parliament in providing a suitable building to contain them, and preparations are in progress to that effect.



There has been an increase of three in the number of local schools of art during the past year, and the instruction has been made more efficient by the introduction of a constant system of inspection. The total number of pupils under instruction is 35,083; of whom 12,337 attend the schools of art, and 22,746 are taught in public and national schools.

Facilities have been given to teachers and pupil teachers of public schools, to qualify themselves to teach drawing; 1,231 teachers and pupil teachers, have availed themselves of these facilities during the year.

#### DAMP AND SALT IN WALLS.

In the last number but one of your journal (p. 368), I observe an allusion is made to my newly patented process, in reply to inquiries made by your correspondents for remedies against salt in walls, &c.

The application suggested by you will unquestionably preserve the stones and walls of a building, and render them "water-proof," but in instances where salt is continually exuding, as is frequently the case in stuccoed walls, I should advise a preliminary operation.

The efflorescing salt is doubtless Glauber's salt (sulphate of soda), probably formed in the following manner: the sulphur in the bricks or cement, combining with the oxygen of the atmosphere, forms sulphuric acid, which in turn acts upon the soda compounds with which the materials are impregnated, thus forming the efflorescing sulphate of soda.

The process I should adopt would be first to get rid of all efflorescing salt which may be present, by washing the wall with a solution of chloride of calcium (or muriate of lime), which will convert the sulphate of soda into sulphate of lime (an almost insoluble substance, which will remain in the wall), and into chloride of sodium, or common salt, which latter should be removed from the surface by subsequent washing.

In order to prevent further production of efflorescence, or susceptibility to absorb moisture, I should then adopt the course alluded to by you.

The mode of operation is simply this:—The stone, or other material, of which a building may be composed, should be first cleaned by the removal of any extraneous matter on the surface, and then brushed over with a solution of silicate of soda or potash (the specific gravity of which may be varied to suit the nature of the stone or other material): this should be followed by a solution of chloride of calcium, applied also with a brush: the lime immediately combines with the silica, forming silicate of lime in the pores of the stone; whilst the chlorine combines with the soda, forming chloride of sodium, or common salt, which is removed at once by an excess of water.

I shall feel obliged if you will insert these remarks in your next number, and I would desire to inform your readers that both the processes above alluded to have been patented by me, and are fully described in my specification of the 24th of March, 1857, which is printed by the Commissioners of Patents.

FREDK. RANSOME.

#### SCENERY AND THE STAGE.

*The Princess's Theatre.*—Mr. Charles Kean has revived "The Tempest" in a very remarkable manner. It does not commend itself to quite such special attention on our parts as did those previous revivals by Mr. Kean which brought faithfully before the public the architecture and social life of past periods,—pre-Norman art in "Macbeth," England under the Tudors, in "Henry VIII.," Greek life and buildings, in the "Winter's Tale," or the architecture and decorations of the end of the fourteenth century, in "Richard II.," but it displays an amount of mechanical contrivances, novel arrangement, and picturesque landscape painting which has scarcely before been witnessed. The ship in a storm, with which the piece commences, is capitally contrived—the stormy sky equally well painted. In the first view of the island, overlooking the sea, a new effect is gained by the tide receding and leaving the "yellow sands." In the opening of the third act a barren and leafless scene is gradually transformed, with great elaboration, to one of luxuriant vegetation; and here the "strange shapes," with many picturesque groupings, form of themselves a flower-clothed table, supporting a banquet. The "masque" raised by Prospero admits of the introduction of that suspending machinery of which such good use was made for *Queen Katherine's* dream, and we have Iris and Venus, and Ceres and Jupiter floating in the air. For the appearance of Ariel the devices are as numerous as the entrances. Now, the tricky Sprite is borne along, without apparent means, midway between the stage and the roof: then, he shoots upwards as a star: here he is seen in the heart of a rock, made visible for the instant; there floating on a bat; he is here, there, and everywhere, during the progress of the play, and is ultimately left

suspended in the air, sole tenant of the scene, when the ship bearing his late master has sailed away, and the island has disappeared. Mr. Kean invests the character of Prospero with great dignity and pathos. Miss Kate Terry is a pleasant and graceful *Miranda*. Mr. Miss Carlotta Lesclercq has been known for a century; and Mr. Harley's *Trinculo* has been known for a century; and Mr. Cathart, in the comparatively small part of Antonio, has made an advance in his profession. Quite right is Warburton when he points to "The Tempest" as one of the greatest efforts of that amazing imagination, peculiar to Shakespeare, "which soars above the bounds of nature without forsaking sense; or, more properly, carries Nature along with him beyond her established limits."

*The Lyceum.*—The translation of "Macbeth" into Italian, looked forward to with much interest by many playgoers, has afforded Madame Ristori another opportunity to show her great powers as an actress, while it has enabled her admirers to test them by comparison. Without terming *Lady Macbeth* one of her greatest parts (it does not afford the same of her greatest parts) those violent bursts of passion, as in the *Medea* and *Rosmunda*, in which Ristori excels, it is a noble assumption, not easily to be forgotten by those who witness it. The sleep-walking scene is the great feature of her version, and displays acting which, for intensity and grace, could scarcely be surpassed.

#### NETLEY HOSPITAL AND ALDERSHOT.

WHEN everybody is searching for information respecting the site, arrangement, construction, and ventilation of this unfortunate Netley Hospital, it behoves those who are at the head of these matters, not only to look in every quarter for remedies, but to see that similar errors (if proved to be such), are not committed in the erection of other hospitals.

A military hospital, for a large number of patients, has recently been designed by a professional man, for the Camp at Aldershot, and as it is on such a decidedly different plan from the one at Netley, I think it only fair that its general features should receive some consideration. The plan is somewhat after this fashion:—the main front contains all the offices for the executive, together with the church, and certain quarters for sick officers, by which arrangement they are kept conveniently distinct, but still with ample means of communication with all the other parts of the building, by an open corridor, from which the blocks for the patients branch out, and are isolated, with windows on each side, thus insuring a most thorough ventilation. At the end of each of these blocks is a tower connected with the wards, by a short narrow passage, which has also windows on each side. This tower contains the baths, water-closets, sculleries, &c. The ward blocks are three stories in height, but communicate with each other, by external staircases, which prevents the circulation of impure air from one floor to another.

The general plan of this hospital has been approved by the Army Medical Board, as well as by many not officially connected with the Government. If these things are found to be correct, it is probably not too late to see if they cannot be advantageously introduced into other hospitals: if wrong, the sooner they are rejected the better: at any rate they are worthy of consideration.

JUSTICE JUDICATO.

\* \* \* The design in question is evidently founded on the plan, suggestions, and reasonings given in our pages. The principle adopted is unquestionably the right one.

#### THE METROPOLIS.

*London and North-Western Railway.*—An extensive structure is now in course of erection in front of the Euston Station of the London and North-Western Railway, for the purpose of protecting passengers and vehicles from the weather. The columns and roof are of iron, and the contractors are Messrs. Lawrence, of the City Ironworks. It is to be roofed in with glass. The company have taken tenders for their new general goods station.

*The Sewers in the Neighbourhood of the Houses of Parliament.*—A report upon this subject has just been presented to Sir Benjamin Hall, First Commissioner of Works, on the state of the sewers in the neighbourhood of the Houses of Parliament, by Mr. G. Gurney. The report states that the effluvia escaping from the open mouths of these sewers taints the atmosphere in and about the Houses of Lords and Commons, and that it is within the daily experience of the members of both Houses, and there cannot be the least doubt that the effect upon the health of all subject to its influence is injurious. Mr. Gurney recommends that the mouths of all sewers about the Houses of Parliament should be "trapped," and states that the sewers that affect the impurity of the atmosphere are at the pier con-

tiguous to Lambeth Palace, where there are two; two also at Millbank, one at the Penitentiary, two at Vauxhall-bridge, and one on either side of the river. Of these the most offensive to the Houses of Parliament are the sewers at Lambeth and Millbank. The others affect the atmosphere only in south-westerly winds and on the fall of the barometer, and do not require such immediate attention; but it is desirable that the Lambeth and Millbank sewers should be trapped as soon as possible. There are nuisances affecting the atmosphere of the Houses of Parliament on the other side of the river from offensive manufactory: the worst are the bone manufactory, from which the effluvia constantly finds its way. The exhalations from the river itself are also a source of impurity to the atmosphere. The report, together with the consideration of the entire subject, has been referred by Sir Benjamin Hall to the Metropolitan Board of Works.

#### CATTLE AND DRAUGHTS.

SINCE you have opened the *Builder* to the cause of maltreated cattle, as regards their homes, may I express a hope that another cruel abuse, incurred in the present draughty mode of their travelling, may receive your regard, as it seems even probable, from the fact of the lung disease having prevailed so much during the last fifteen or sixteen years, that most of their suffering arises from that source. My attention was drawn to it by a dealer in cows remarking, of this wide-spread distemper, that he never knew it till railways came up, and that he now makes cattle walk instead of exposing them to the danger. Surely it seems a natural result from exposing the poor creatures to the cutting cold draught of such velocity through the open railing of the cattle-trucks. With such a view, I heartily wish that the directors of railways had it laid on them, by conscience or legislature, to protect with a worthy providence the health and lives of the life-sustaining victims of slaughter and fountains of milk, in comfortable boxes, and so do their part for the short-lived enjoyment of the creatures whose sufferings will retribute their unfortunate owners with a long life of ailments in their own shortened lives; and that they would also view with me the horrid picture reflected from this, where the direct sufferers are their fellow creatures, whom they catch by cheap fares in painted and varnished cattle-trucks that run on pleasure excursions, when the sensitive town-folks' chests are swept under consumption's invisible steam-speeded scythe.

But the people themselves need be wiser, and take another lesson from a physician who took a house by the sea-side where he found the sashes made to open at the bottom only, and immediately had them altered so as to open at the top, observing that it was one of the most dangerous positions to sit in a room at any time of the year with the bottom sash open, as the draught came directly across the chest. How prevalent is it now, where the popular nuisance flushes out with its sooty millions into the room where one is intently occupied in stillness, to throw up the bottom sash, and resume the seat? if this is a danger, as the physician said, surely it should be boldly averted. The top sash might be opened, but perhaps it is a stretch to reach it, and so the first at hand is chosen. Here arises the question, whether the casement opening from top to bottom is not preferable to the sharp rush through the few inches of the sash-opening—the common restriction.

If we can get this question of construction settled on sanitary grounds, we may hope to find demanded for it an observance by the nineteenth-century architects, along with the improvement in construction of cattle-trucks and parliamentary carriages by railway directors, as ordinances for the good health of man and beast.

OLIVER.

#### FAILURE OF A BRIDGE ACROSS THE SEVERN.

By the failure of a temporary bridge formed across the Severn, at Shrewsbury, ten unfortunate persons have lost their lives. At the inquest, held on Monday last, Mr. W. Harley Bayley, mayor of the borough, gave evidence to the effect that in consequence of the complaints made of the injury to the quarry from Julien's *fête* of last year, he gave permission to Mr. Hay to use the Island of Poplars for the late *fête*, on the condition that Mr. Hay employed a competent person to construct a bridge of boats by which to approach the island. Mr. Hay mentioned the name of Mr. Randall, architect, and stated that he intended to have two bridges, one for the approach to and another for persons leaving the island. Witness approved Mr. Randall as the architect for the bridges. It was afterwards found that one bridge only was erected.

Mr. John Evans, Sen. carpenter, said, he was employed by Mr. Hays to superintend the construction of the bridge, under Mr. Randall. He did not know who furnished the workmen.



Mr. Tisdale, borough surveyor, said, he examined the bridge of boats on Saturday by order of the coroner, Mr. Henry Keate. In his opinion it was not sufficiently strong for the purpose for which it was erected.

Mr. Pountney Smith, architect, and Mr. Townsend, engineer, corroborated Mr. Tisdale's evidence as to the unsuitness of the bridge for the purpose.

Police-constable Broughall, and other witnesses, deposed to persons rocking the bridge, two of whom were a short time in custody, but escaped at the time of the accident, and had not since been identified.

A verdict of "Accidental death" was returned in each case.

The jury condemned the construction of the bridge as unsafe, and, at the same time, expressed regret that sufficient police precautions had not been observed, and that the safety of the bridge had not been previously tested by the borough surveyor.

#### OIL-PAINTED PHOTOGRAPHS.

MR. E. T. PARRIS.

WE have recently seen some photographs, by Mr. Herbert Watkins, painted on in oil by Mr. E. T. Parris, the artist, so as to have all the effect of the most finished miniatures. In doing this, Mr. Parris claims nothing more than thus making a good photograph, when obtained, permanent; but he is able to do much more, for his medium enables him to remove those overstrong markings, and to lessen those occasional exaggerations which photography, at its best, produces, and thus to make portraits pleasing as well as truthful. He is able further to put into them something of the general character of the individuals represented, in addition to their actual appearance at a special moment, under what must always be the case in a photographer's glass room, peculiar and exceptional circumstances. Mr. Parris is so strongly associated in one's mind with a certain wonderful view of London on acres of canvases, and with the recent excellent restoration of the huge paintings in the dome of St. Paul's, where for months, not to say years, he must have dealt with the "pound brush" rather than the pencil, that it is surprising to find him retaining such a delicacy of handiwork as is exhibited in these portraits and some other recent small works.

Considering the great ingenuity of the scaffolding by means of which he painted in the dome of St. Paul's, the laborious nature of the work, the actual risk of life, and the ultimate successful achievement of the restoration, the completion of this work, let us say, by the way, should have brought this artist a more public demonstration of approval than has yet been made. He may safely comfort himself, however, with the certainty that when he is dead and gone, some half-century hence, the vergers and the guide-books will tell wonderful stories about him, and people will say, he really was an extraordinary fellow, and will wish they had known him and could have given him some evidence of their admiration for his pluck as well as skill.

#### NOVELTY IN ART.

THE artist is always making novelties. The faculty which marks him is invention: the exercise of it produces his works: the lack of it makes him unworthy of his name: the disease of it is unwise.

A mere combination is not a novelty: it is so when imbued with the spirit of originality. A combination is not evil, but mean and ordinary. A copyism is offensive: it is a work only fit for machinery or ignorance. It shows admiration of the original, and a desire to perpetuate it; or blind adherence to formality and precedence; or simple lack of ability. A copy would not be commendable, even if it could have the energy of the original. That energy can only be strained for: at any time the whole must show a defect of controlling power.

The grandeur of an old building is incommunicable: it has associations with it: it has the cold and heat of many years—the mellowed tints and diversified surfaces: it is old. No modern building or painting can be old at once. No new thing can have the associations of age—the years, the scenes, the experiences, of the time-honoured. Yet feeling is never old: it is always young and fresh: after centuries it is as full of life as when it first issued from the heart of the originator. It required no lapse of ages, nor long interval, to give the impress of majesty and of intense livingness to the works of many older artists. This is the incommunicable part of the work—the source of its character—its great peculiarity and distinction.

No one makes a copy with the ardour with which he made the thing to be copied. It is impossible to do so: it becomes a work of compulsion—unpleasant and tasteless. Copyism is thus subversive of art.

A combination of copied parts is equally evil: the time for imitation should precede that for execution:

learning should be obtained—then given out with freshness.

A tasteful joining together of beautiful atoms must make a beautiful whole: yet it is impossible to take beauties out of old works as features to be combined in a new one.

The simplicity of what is without character is painful and injurious: every production should have a character—individual and distinct from all else—its own. This is the source of its right to be considered a work of art. If there be men with us with the spirit of the workers of the past, who can shape the stone, can carve the wood, can produce forms with all the variety and originality of their predecessors, they must work. Art wants them: beauty may be made by them: let them leave behind them marks of the full and proper use of their faculty, scattered much and well.

Composition, or combining of features, is allowable, if it be done to manifest a new life—a fresh power. Copyism is the degrading work: it is the work of lines and letters,—the work of the drudge. It is not so when imbued with mark of its own.

The originality of compulsion is now rare. Most men want not to be original: they had rather be other than that. Very few give vent to all their power: the most important ventures, that should have all their attention—all their spirit,—are without the first requisite of success—earnestness. Vigour is the soul of impressiveness: that which is without it is never fully useful to any.

Love of art is in the nature of man: the artist gives expression to the aspirations of the crowd. He is the burning mountain where the fire that burns universally is discharged in mass; the vent of the ardent enthusiasm of thousands of other souls. He is the one who has to create for the many: he is part of the nature of things: he is necessary: he is provided.

An artist is possessed of poet's feelings: he is born with it: you can never make him. When he is possessed he must be used and cared for like a rare and choice tree. His mind is the root: from it trunk, branches, leaves and fruit shall spring up. He must be trained upward that he may shoot heavenwards; and must grow that he may catch the breeze purer than at earth's level,—that he may receive the moisture at once in a stream from above. He must be carefully cultured, watched with interest, provided with all aids. Nothing must rise round him to make his chances less, to narrow his standing-place, to hem in his freedom. Soon will be seen thoughts, bold and anxious, filled with spirit, struggling forth to view. They will increase in size and in number. After other seasons there will be the bud, the blossom, the fruit. The fruit to gladden; the concentration of the properties of the producer; though like, yet various; always differing somewhat, yet always recognisable as formed from one stock, having one origin.

Imagination is the spring of originality: originality is the making of an artist. An artist is the master of beauty.

Imagination is reproductive—in its fullness and freedom infinitely so: it is never exhausted, for it can never tax itself. Every light and play opens the way to more. The storehouse of the mind is never open wide: the door stands only ajar: it may be looked into, and will supply the searcher. The seeker after novelty is imagination. The mind gives out an idea, but it receives seven into itself—variations of the one that is used. It never is emptied without large addition in return. It is filled for all circumstances: the imagination will be a servant as much as you wish: the will must only allow it.

Novelty is a mark of advance: it is entirely at variance with frivolity and mock freshness. It is a step, or many steps, from past attainment towards the goal: it is not a grasshopper's leap to the right or the left, and then back again. The effect of advances is advance: novelty is a grafting of new things on old: advance is necessary: advance necessitates novelty. Similarity is not contrary to novelty. Likeness is the root of all progress: likeness, with difference, is the fruit. There is no limit to the strides that may be taken: they may be large—as large as possible. The sooner the new domain is entered the more reason will there be for decided hope of success. Long time art is at quiet, resting, sleeping: when she wakes up, and begins to march onward again, with all the aids that are afforded to her, she may hope to get on.

She wanted a manner of pause for centuries—a resting-place and a long sleep. She had done her work till then: another work must be done—an important one. Meanwhile she would rest on her oars, and draw to the shore, and let the tide pass on. She ceased to give her generals—the artists—to men. The battle was fought: the giant evils that had long been raising themselves to put in fetters the individual energy of man—to make him a lifeless and powerless tool—were cast down to the dust. The wand that had

acted in enchantment so long was robbed of its might: the work of a century, the work for the world and for ever, was worked. Once again, with the power of acting unrestrained, each one could do what he would. The mist cleared off: every one looked at his fellow in a clearer light: each lived in a higher region—freer, nobler. Now is the time to go in the course that has been left for centuries, to work on from what is past to something better in the future.

The great men of old call to work. The sympathy of every heart of them is with it. The end may be near soon. Why, in this young world, are younger men than those of to-day to be in the foreground? It must not be so. The times are older: the artists who will come will be of the age. These times are of mighty import: this age labours with huge discoveries: it is an age of progress—of eurygy. Every day, from the mass of restless force that is straining for expression, comes some new thing. The way is to be pursued. Truth in everything is the high achievement. All is forward—art should be in the van. The artist is to lead many onward. He can only advance by his originality. S. F. C.

#### Books Received.

*Rain and Rivers; or, Hutton and Playfair against Lyell and all Comers.* By Colonel GEORGE GREENWOOD. London: Longman and Co. 1857.

COLONEL GREENWOOD is not far wrong, we opine, when he says that the subject of his speculations in the present volume "is of vital importance—the very foundation-stone—in theories of geology and physical geography; also in engineering questions touching harbours and docks, the embanking of alluvial rivers, the reclaiming of land from the sea or marshes—works which place in jeopardy millions of lives,—and the drainage, sewage, and supply of water to the cities of the plain." And last, and oh! ye goldfinders and utilitarians, not least,—

The boundless store  
Of charms which nature to her votary yields,—

the subject explains even the origin of these. The alternation of the ravine and ridge, the hill and dale, the exquisite beauty of the earth's surface, of all that we see of the earth,—the "dread magnificence" of the alpine chasm, and the rich loveliness of the alluvial vale, are the ever-changing products resulting—start not at the bathos—from the daily wash of rain.

The dashing boldness and outspoken expression of opinion in which the gallant colonel indulges are refreshing as his own favourite "rain" is to the "new-mown grass," even though he does treat Lyell as a scientific thimble-rigger, and Humboldt as a pompous humbug. That the colonel has even the best of it, too, in maintaining that the idea of Lyell that valleys are produced by the action of the sea is a gross error, seems evident; but then Lyell does not restrict himself to this idea, and is really, as his antagonist virtually alleges, to place the pes under another thimble the moment the finger of scorn is pointed at his ocean theory. That even Colonel Greenwood's own theory, however, is not a complete one, seems equally clear; for in innumerable instances the scooping-out of valleys, and the grinding down of rocks into soils, by those tremendous ploughs and harrows of nature the glaciers, is no less manifest than their excavation by mere rain and rivers. The question, how glaciers came to exist where they plainly have at one time existed, itself of course admits of discussion; but the fact seems to be incontestable. Even yet, too, the action of frost and of frozen moisture in rocks, in disintegrating and pulverising them, is not shown out, on the author's own view, as it ought to be. With reference to the glacier theory, the arctic regions, as they now exist, are capable, we think, of shedding much light on the twofold state of freeze and flow, under which the rich soils of our own country have at one time been prepared for man's use; and it cannot be denied that co-ordinately with the former alternate prevalence of vast winter snows and glaciers, and of no less awful summer rains and floods, over all the high grounds especially, in Britain, the sun in the ecliptic at one time vibrated in a wider range of tropic, so that the winters in temperate regions must have then been more severe, and the summers more intense than they now are. True, astronomers tell us that the extent of this variation in the ecliptical obliquity of our planet must have been very limited; but the widely different ratios of ecliptical obliquity co-existent as they are in the different planets, from a state of almost entire coincidence of ecliptic and equator, as in Jupiter, to a state of libration almost "wide as the poles asunder," as in certain other planets, tends strongly to militate against our implicit and passive belief in this *dictum* of astronomers, so far as regards our own planet's astronomical and physical history, all the more especially when we consider the mani-



festations of its geological history still traceable on the face of its now temperate regions. This, however, is not the place to enlarge on such arguments as these.

There is a remark by Colonel Greenwood, in the present volume, on the Ordnance survey, which we feel it a duty to quote, whatever amount of real reason or of undue prejudice may have actuated the author in making it:—

"I may here remark, of our own Ordnance map, that if the delineation of the streams throughout England is as faulty as it is in the small part of Hampshire which I happen to know as a sportsman, that map does not deserve the reputation which it has."

*Gleanings among the Castles and Convents of Norfolk.* By HENRY HARROD, F.S.A. Norwich: Published by Subscription. 1857.

MR. HARROD is the local secretary, for Norfolk, of the Society of Antiquaries and of the Archaeological Institute. He was also till lately the honorary secretary to the Norfolk and Norwich Archaeological Society. The volume before us, therefore, may well be regarded as one written by a competent author. It is pretty fully illustrated by engravings, some of them rough enough certainly, but others of a better description. The volume contains full accounts of Thetford Priory, Rising Castle, the convent of Black Friars at Norwich, Castle Acre Priory, Norwich Castle, Walsingham Priory, Bingham Priory, Beakenham Priory and Castle, Bromholm Priory, and Norwich Cathedral Priory; and to the whole is added a useful index.

*Report on the Establishment and present Condition of the Public Baths and Washhouses in Liverpool.* By JAMES NEWLANDS, C.E. Borough Engineer.

This report may be said to be a strictly professional one, accompanied as it is by numerous plans, sections, and elevations, with details as to costs and arrangements. One of the chief conclusions to which the reporter arrives, as to the working of the several establishments at Liverpool, is, that washhouses are a mistake,—that, at all events, they are not used by the class whom they were designed to aid and benefit, but by tradespeople, hotel and boarding-house keepers, professional washerwomen, &c. and that they tend to supply that in charity which it is the duty of the house-owner to provide as a right. As to the baths themselves, it appears that there are too many of the better class of baths now provided at Liverpool, and that the price charged for the lowest is too low. Hitherto the baths have not been paying their own expenses; but the reporter expresses his belief that these establishments will eventually be self-supporting; and besides, the habit of bathing is a process of education which is every day being more and more developed. The statistics of the next few years, the reporter is persuaded, will show a result widely different from that now obtained, and more satisfactory to those who desire to see the condition of the poor improved in regard to cleanliness as a means of health.

*Brief Account of the Provisional Arrangement and proposed Development of the Society of Arts' Collection of Illustrations of Every-day Life for the Working Classes.* 1857. Part first.

THE illustrations of every-day life for the working classes, originated by Mr. Twining, now form one of the most interesting departments of the Educational Collection at the Brompton or South Kensington Museum, and must ultimately constitute a treasury of materials and manufactures, instructive not only to the working classes, but to those who earn their livelihood by supplying the wants of these classes. When a baker, for example, here sees, as he will do, in looking over the collection, the beautiful biscuits prepared in other countries from Indian corn-flour mixed with wheat-flour, he will be induced himself to prepare such cheap and wholesome food for the working classes of his own country; and these will be stimulated, on the other hand, to ask for them at the bakers' shops, and so to create a demand that will lead to the desired supply, and also to the introduction of Indian flour, in other forms of food. Even the political and social bearings of such a collection, on the state of the working classes, are not to be despised. What so apt to make the workman contented with his lot, as to see here, for example, which he will do, the notable contrast between the black dirty and horrid-looking stuff called bread, and eaten by his class in Sweden, Denmark, and Russia, on the one hand, and the good wheaten bread, with whose wholesome and enticing aspect he is himself so well acquainted, on the other?

In the "Brief Account" under notice is the following statement as to oatmeal, which is rightly regarded as one of the most nutritious and valuable articles of food:—

"It is sometimes stated to produce skin disease when used in large quantities, but the statement has not the slightest foundation."

Now whilst it would be a pity to disparage unjustly so excellent and cheap an article of food for the working classes, it is most desirable that any mal-influence it may possess should not be concealed or overlooked. It is at least a fact, known to the writer of this notice, that Scotchmen themselves, who have partaken of oatmeal in the form of cakes, porridge, haggis, &c. in Scotland, not only with impunity, but with unquestionable benefit, have found it to be rather heating to the blood in England, and productive of a slight outbreak on the skin, not from any undue quantity taken, but even sometimes from the least possible quantity. Similar effects have even been known to follow in this country from partaking of Indian corn cakes. Facts such as these ought to be known and recognised, especially amongst organic chemists, who may very easily, perhaps, remedy the partial evil by the recommendation of some qualifying agency or ingredient. It is very probable, for instance, that a little barley-meal mixed with oat-meal or with Indian corn flour, may completely obviate the tendency alluded to. It is even probable that a very brief persistence in the use of such foods may be all that is requisite. Valuable and cheap food, such as Indian corn flour and oatmeal, ought not to be allowed to be prejudiced and obstructed in their extension by any mere partial evil such as this if a remedy can be at all supplied.

Mr. Twining merits the thanks of the community for his exertions in the good cause of illustrating and improving the every-day life of the working classes.

### Miscellaneous.

**ELECTRO-TELEGRAPHIC PROGRESS.**—The Atlantic cable has now been completed. The total length is 2,500 miles, and it has been manufactured in two portions. The weight of the cable is 19 to 20 cwt. per mile. There have been used in its construction 27,500 miles of copper wire, 370 to 400 tons of gutta percha, and 135,000 miles of iron wire. A curious economization of the cost of working telegraphs by help of what may be called human electricity or electro-magnetism is talked of as a highly important discovery made by Mr. Reid, of Gresham-house, City, by which the cost of telegraphic communication with distant stations will be diminished to an extent almost beyond belief. While the monster battery for sending messages between England and America consists of forty pairs of platinised silver and zinc plates, and has cost about 2,500*l.*, it is said that, from a series of experiments made by Mr. Reid, with his "mouth battery," by a single pair of plates the same amount of work may be performed, the cost of the battery being 3*d.* Mr. Reid's assistant "placed a plate of platinum and one of zinc in his mouth, each being three-sixteenths of an inch square, and upon the current produced thereby being allowed to pass through 1,250 miles of the Atlantic cable, the galvanometer was deflected 8 degrees; and although the experiment was made many times, the same result was invariably obtained." If this be not a marvel, or a "delusion" of "animal magnetism," it shows that there are really magical powers in the human organism, of the results of which we have as yet no conception. May not the exercise of a somewhat analogous power, for instance, in long past ages, have assisted the Cyclopean builders in modifying temporarily the pressure of the gravitating force in huge masses, thus enabling them to handle such masses with something like ease, so as to account for the tremendous labours of which we still have evidence in the Cyclopean works of past ages? We must look to Professor Faraday and diamagnetism, perhaps, for a solution of such mysteries. Meantime, it would seem that if electro-magnetism, or magneto-electricity, is to be made a practicable and economical working power, it will be by Mr. Reid's "mouth battery,"—rather an odd mode of applying such power,—to steamers, for instance, or to locomotives! How could any substitute be obtained for such a battery?

**IMPROVEMENTS AT HOLYROOD.**—The works at Holyrood and in the Queen's-park, authorised by a vote of Parliament last week, have been commenced. They consist of a new garden surrounding the palace, including of course the removal of all the old houses between it and the hill, forming a lock below St. Anthony's Chapel, building new entrance lodges, and extensive improvements within the palace.

**NEW TOWN-HALL FOR BERLIN.**—It has been determined to build a new Town-hall in Berlin, on a magnificent scale. The building is to be a monument of the best architecture of the day, and artists of all nations are to prepare plans, and enter into competition for the work. There are to be three prizes awarded for plans, of three hundred, two hundred, and one hundred and fifty ducaats.

**THE EDINBURGH SCHOOL OF ART.**—The prizes for competition drawings, paintings, and models of the students attending this school, were delivered at the National Gallery in Edinburgh, on the 29th ult. In the ornamental and architectural department, Mr. Christie reported that the number of students who attended the classes in this department last year was 411: the number this year is 225; showing a decrease of 186. But as there were no day-classes last year, the number attending these must be deducted as follows, viz.:—Male class, 11; female ditto, 50—total, 61; making the actual decrease 247. This decrease appears to be entirely owing to the adoption of the system of charging fees, but is not more than was anticipated. Twelve students have been transferred during the session from this department to the Antique, being three more than the amount of last year. The class of Practical Architecture has increased from eleven to sixteen, while the class of Composition has maintained its numbers, so that the falling off has not taken place in the advanced classes. The result of the trial of the Geometry shows the necessity of extending the education of the students in this direction. In the Antique Life and Colour Department, Mr. R. S. Lauder reports that, in consequence of the system of students paying fees being adopted, the classes have fallen from ninety-one of last year to forty-three for this.

**RAILWAY MATTERS.**—The traffic returns of the railways in the United Kingdom for the week ending June 27, amounted to 500,930*l.* and for the corresponding week of 1856 to 464,910*l.* showing an increase of 36,020*l.* The gross receipts at the eight railways having their termini in the metropolis amounted to 210,788*l.* and last year to 200,691*l.* showing an increase of 10,197*l.* The increase on the Eastern Counties amounted to 1,733*l.*; on the Great Northern to 547*l.*; on the Great Western to 3,698*l.*; on the London and North-Western to 5,764*l.*; and the South-Eastern to 840*l.*; total, 12,567*l.* But from this must be deducted 77*l.* decrease on the London and Blackwall; 879*l.* on the London and Brighton and South Coast; and 1,420*l.* on the London and South-Western. The receipts on the other lines in the United Kingdom amounted to 290,147*l.* and last year to 264,318*l.*; showing an increase of 25,829*l.* Meetings, of a private character have been held during the past few weeks, with a view of launching a scheme for affording to Cheltenham a shorter route to the metropolis. The line proposed will join the Oxford, Worcester, and Wolverhampton, at Chipping-Norton, thus reducing the distance between Cheltenham and London to within 100 miles, and shortening the duration of the journey (without change of carriage) nearly two hours. The line is estimated to cost about 350,000*l.*—It is said the Crystal Palace Railway Company have agreed to purchase the Grosvenor Canal, with a view to forming a railway along its banks and using its Grosvenor basin, within half a mile of Buckingham Palace, as a grand West-end terminal railway station.

**CITY WORKING-CLASS DWELLINGS.**—In a tract under the title of "City Dwellings for the Working Classes," Mr. G. Ross, M.R.C.S. and a member of the Court of Common Council of the City of London, reurges the heads of addresses and notes of evidence delivered by him before the Common Council and their committee for improvements. Mr. Ross objects, to the formation of suburban dwellings for the industrial classes employed in the city, that even at a farthing per mile by railway, the passage to and fro, weekly, would average, at least, two shillings a head, an addition to rent far beyond the means of the class to be benefited. He therefore proposes that the City Corporation shall take part in the formation of improved City dwellings, for which he endeavours to show that there is abundance of room; the buildings to be five stories in height, and laid out with wings divided into wards, and with other arrangements and restrictions.

**DUBLIN SCHOOL OF ART.**—LECTURE ON PAINTING.—Mr. Macmanus, head master of the School of Art in Kildare-street, Dublin, last week delivered a lecture on painting in the theatre of the Royal Dublin Society House, being the first of a series of three lectures, comprising painting, sculpture as connected with painting, and architecture as connected with sculpture. The address opened with some preliminary remarks in reference to a report having gained currency that the School of Art had formed a life school in opposition to that existing in the academy in Abbey-street. There was no foundation for the rumour. Mr. Macmanus divided the fine arts into seven, viz.—the phonetic four,—music, eloquence, literature, and acting; and three others, painting, sculpture, and architecture. In course of his remarks the lecturer maintained that there had never been art in Ireland. The time was not come for it: it was not required at present. The seed had been sown, and the future would reveal in this, as in other things, what Ireland was capable of.



**THE ART MANUFACTURE ASSOCIATION AT EDINBURGH.**—The first annual meeting of this Association for the distribution of prizes, was held on the 27th ult. in Queen-street Hall. Sir J. McNeill was called to the chair, and opened the proceedings by referring to the doubts and misgivings with which the most sanguine engaged in the origination of the Association. Sir John added that one most pleasing feature of the recent display of the works of art was the extent to which the working classes had availed themselves of the evening exhibitions. He had not the smallest doubt that perseverance in this course would lead to produce an important elevation in the taste, and also in the character, of our working classes. The report was then read. It stated that the receipts on account of subscriptions during this first year amount to 5,489. 18s. 2d. the number of subscribers being 5,333. The committee had expended upwards of 3,000*l.* in the purchase of objects of art workmanship for distribution among the subscribers. The articles selected were, — 1. Gold and silver work—jewellery; 2. works in electro-plate; 3. works in enamel and metal; 4. crystal and glass—white, engraved, cut, and coloured; 5. pottery—including China, Porcelain, &c.; 6. carved work in wood, horn, and marble; 7. textile fabrics, as shown in shawls. The specimens were selected from the productions of manufacturers in Paris, Vienna, Frankfort, London, Birmingham, the Potteries, Glasgow, and Edinburgh. At the exhibition in the National Galleries, the number of ordinary admissions in the day-time, during the six weeks it was open, was 17,457; and in the evening, 17,806. The number of season tickets sold was 1,767. The receipts derived from the exhibition, and lectures delivered in the galleries, amounted to 1,445*l.* 19s. 9d. The report was unanimously agreed to, and the distribution of prizes was then proceeded with.

**THE LUNATIC ASYLUM FOR DORSET.**—At the Midsummer Sessions for the county of Dorset, Mr. Moffat's plans for the new buildings were again considered, and the committee reported that they were unanimously of opinion that Mr. Moffat should be employed as architect to carry out his plans at the usual per centage, subject to certain minor alterations suggested and agreed to by Mr. Moffat, the principal one being the formation of a separate chapel at an additional cost of 1,000*l.* The Rev. J. A. Temple, according to the report of the proceedings in the *Dorset Chronicle*, explained that at the last sessions it was agreed that Mr. Wyatt should decide which was the best of the six plans for the enlargement of the asylum, the court having offered a premium of 80*l.* for the best, and 20*l.* for the second best. Mr. Wyatt had recommended that of Mr. Moffat, which was now placed before the court, and the alterations, as referred to in the report, were explained by Mr. Temple. He stated that a great point in Mr. Moffat's plan was, that it was more concentrated than the others, and avoided excavating in the chalk adjoining the asylum, while it would not interfere so much with the present buildings. He then proposed that the plan should be accepted, and forwarded to the Commissioners in Lunacy for their approval. The motion for accepting the plan was carried by a large majority, and after a lengthened discussion on the subject of the 1,000*l.* to which the architect's per centage on 25,000*l.* would amount, it was ultimately resolved to appoint Mr. Moffat as the architect, if the Lunacy Commissioners approved of his plans.

**MASONS' STRIKE AT MANCHESTER.**—The stone-masons of this city have been on strike for nearly three weeks. They demand to leave off work at twelve o'clock at noon on Saturdays, instead of at four o'clock, as heretofore, and refuse to work up any portion of the time, and still require the same wages, 30s. per week. The time lately worked was 57½ hours per week in summer, which they demand to be reduced to 54½ hours. They also demand to leave off work at twelve o'clock in winter as well as summer, and, as they cannot see to commence work much before eight o'clock in the morning, the employers will have to pay one day's wages for four hours' work. Any mason working out of town is to be at the pay-table at twelve o'clock: in such cases, Saturday's wages will be equivalent to 4s. 6d. for two or three hours' work. The operatives urge that this alteration is necessary for their social improvement, and is sanctioned by the Bishop of Manchester, Sir John Potter, Sir James Watts, Thos. Bazley, Esq., and many others who have signed their names in favour of it. On the other hand, the employers allege that although the alteration in time would be inconvenient to them, they would submit if the hours were worked up, as they cannot get prices to compensate for the loss of the time.—*Manchester Courier*.

**ISLINGTON GREEN.**—We regret to find that it is in contemplation to erect the Vestry Hall on this only open space in the parish. Is it too late to prevent what would certainly be an unwise act?

**ACTIVITY OF THE BUILDING TRADE IN GLASGOW.**—In every direction, says the *Glasgow Gazette*, the utmost activity prevails in the building trade. Some of the streets—Eglinton-street and Apsley-place, for instance,—are well-nigh barricaded from end to end with wooden enclosures to facilitate the erection of new, and the re-construction of old, buildings. At the south end of Eglinton-street, there are several dwelling-houses, enriched with Grecian ornaments from designs by Messrs. A. and G. Thomson. In the Trogate, West St. Vincent-street, Maxwell-street, Howard-street, the vicinity of the Paisley-road, Hutchesontown, Anderston, in short, in every direction extensive building operations are being carried on. Our contemporary the *Guardian* further tells us of buildings in prospect. Beside the U.P. Church to be erected for Mr. Ker between Sydney-street and Hill-street, with an entrance frontage to Duke-street, there are other three churches on the eve of erection. One of these is a U.P. church, in the New City-road: another is a territorial mission church, to be erected in Govan-street, Gorbals; and the third is a church of the same class, to be erected at Blackquarry.

**REPORT ON EXPERIMENTAL PAVEMENTS IN THE CITY.**—A report has been made to the City Sewers Commission, by their engineer and surveyor, Mr. Haywood, on the experimental pavements laid down in Moorgate-street, at his suggestion, in 1845. As regards quality of stone, the result is,—Firstly, that irrespective of size of stone, the Aberdeen granite generally required repair earlier than the Mountsorrel. Secondly, that the Aberdeen stone requires a larger area of repair than the Mountsorrel: that it has had more stones worn so as to be unfit for use, and, consequently, has required the insertion of more new stone, and has cost more per square, per yard, per annum, for repairs than the Mountsorrel. As regards size of stone,—that, irrespective of the nature of the granite used, the pavings composed of the smaller stones have needed more repair, and the insertion of a larger quantity of new stone, and have cost more for repair than those composed of the larger stones. These results accord with the reporter's observations made upon other pavements. The only safe conclusion deduced from these results is stated to be, that the cost of repairs upon similar pavings will be inversely as the size of the stones. On the whole it is concluded, meanwhile, that the pavement usually employed is the most suitable.

**VISCOUNT CARLINGFORD'S AERIAL MACHINE.**—Viscount Carlingford, of Swift's-heath, Kilkenny, has patented an aerial chariot, with which he anticipates obtaining great results. The improved machine is likely, it is said, to be experimented with shortly at the Crystal Palace, Sydenham. The patentee states that "The aerial chariot in form is something of the shape of a boat, extremely light, with one wheel in front and two behind, having two wings slightly concave, fixed to its side, and sustained by laths of half-hallow from passing against them, and communicating their pressure through the body of the chariot from one wing to the other, and supported by cords whose force, acting on two hoops nearly of an oval shape, holds the wings firmly in their position, using a force that cannot be less than ten tons, on the principle of corded musical instruments. The aerial chariot is provided with a tail that can be raised or lowered at pleasure. The machine is drawn forward by an aerial screw of the perfect form of the screw propeller."

**SOCIETY OF ANTIQUARIES, NEWCASTLE-UPON-TYNE.**—The county meeting of this society, for 1857, was held on 29th ult. at Lindisfarne, or Holy Island. The inn was first visited, and then the parish church, a structure dating farther back than 1145, with round and pointed arches, and alterations and additions of various periods down to the eighteenth century. Near the church stand the remains of the ancient priory, which has been as far as possible arrested from final destruction, under the authority of the Commissioners of Woods and Forests. The castle was then visited, and there the party, about twenty in number, refreshed themselves, and then returned to the mainland, and by train to Newcastle. The *Gateshead Observer*, from which we gather these few particulars, gives a full report of the meeting, with a historical sketch of the island and its ancient bishops.

**COMPETITION, BALSALL HILL, BIRMINGHAM.**—The Building Committee for the erection of Parsonage-House for St. Paul's Church, Balsall Heath, Birmingham, have selected the designs of Messrs. Briggs and Eversal, of Birmingham, submitted in competition.

**ART AT DUNFERMLINE.**—We regret to observe that a resolution has been come to, to close the School of Art at Dunfermline. The master (Mr. Baker) had previously resigned, transferring his services to the High School of Stirling, where there seems to be some taste for art, and where he appears to have obtained commendation.

**ST. HELEN'S CEMETERY.**—The Burial Board has accepted the tender of Mr. John Middlehurst, of St. Helen's, for the erection of the three chapels and two lodges, at the sum of 3,286*l.* 14s. 3d.; and that of Mr. Edwin Knight, of Manchester, for the earth-work, road-making, drainage, &c. at the sum of 2,286*l.* Mr. Barry, of Liverpool, is the architect.

## TENDERS

For finishing six villas at Wandsworth. Mr. A. C. Hook, architect. Quantities supplied by Mr. Chas. Sewall:—

Vale and Osmond.....	24,331	12	0
Crabbtree .....	4,033	6	7
Godbolt .....	4,021	0	0
Cowland .....	3,729	0	0
Walburton .....	3,725	0	0

For the general drainage of the district of Christchurch, Monmouth. Mr. Alfred William, engineer:—

J. Mayo, Newport .....	22,736	0	0
Bewick and Wade, Carmarthen .....	2,680	0	0
Davies and Knapp, Newport .....	2,435	0	0
R. Giles, Jun. ditto .....	2,296	0	0
Jonah Francis, ditto .....	2,230	0	0
T. G. Hardie, ditto .....	2,228	0	0
John Phillips, London .....	2,211	0	0
Moore and Griffiths, Newport .....	2,169	0	0
James and Roberts, ditto (accepted) .....	1,908	0	0

For additions, &c. to Gunnersbury House, Acton. Mr. W. W. Pocock, architect. Quantities supplied by Mr. W. R. Gritten:—

T. Piper and Son .....	23,984	0	0
Todd .....	3,949	0	0
Nye .....	3,538	0	0
Cowland .....	3,733	15	9
Chamberlins .....	3,760	0	0
Wm. Higgin (accepted) .....	3,715	0	0

For two chapels, two lodges, &c. Oldbury Cemetery; Mr. W. Wigginton, architect:—

Harley (Smetwick) .....	22,930	0	0
Cox and Edwards (Tilford) .....	2,557	14	0
Round and Bagnall (Oldbury), including 71 <i>l.</i> 10s for additional work (accepted) .....	2,455	4	0

For proposed new school for the trustees of Lady Hollis's School, Red Cross-street, Cripplegate Without. Mr. Edmund Woodthorpe, architect:—

Locke and Son .....	21,345	0	0
Ganmon .....	1,114	0	0
Brass and Son .....	1,109	0	0
Lawrence and Sons .....	1,083	0	0
Ashby and Son .....	1,078	0	0
Brown .....	1,073	0	0
Turner and Sons .....	1,033	0	0

For additions and alterations to a warehouse in Watling-street, for Messrs. White and Sons. Messrs. Tiltott and Chamberlain, architects. The quantities supplied:—

Anley .....	23,384	0	0
Myers .....	3,339	0	0
Wilson .....	3,382	0	0
Pritchard and Son .....	3,183	0	0
Brass and Son .....	2,994	0	0
Burton .....	2,710	0	0
Lawrence and Sons (accepted) .....	2,682	0	0

For additions and alterations to a warehouse in Watling-street, for Messrs. Lupton and Co. The same architects. The quantities supplied:—

Anley .....	21,271	0	0
Myers .....	1,179	0	0
Wilson .....	1,104	0	0
Pritchard and Son .....	1,005	0	0
Brass and Son .....	989	0	0
Lawrence and Sons .....	842	0	0
Burton (accepted) .....	836	0	0

For girls' school and residence in Spicer-street, Spital-fields, for the London Domestic Mission. Mr. William Reddall, architect:—

Wilson .....	21,067	0	0
Pritchard and Son .....	1,042	0	0
Scott .....	1,020	0	0
Ashby and Son .....	1,010	0	0
Piper and Son .....	995	0	0
Burton .....	947	0	0

For new buildings, Staining-lane, City, for Messrs. Hugh Jones and Co. Mr. Thomas Burton, architect. Quantities furnished by Mr. Burton:—

	Building	Additional Cost of Stone Cornices.	Total.
Axford and Co. ....	21,579	221	21,800
Brass and Son .....	4,529	217	4,746
Tolley .....	4,297	287	4,584
Lindsey .....	4,330	208	4,538
Lawrence and Sons ..	4,162	170	4,332
Piper and Son .....	4,150	160	4,330
W. Smith .....	4,125	175	4,300
Lucas, Brothers .....	4,123	144	4,267
Ashby and Son .....	3,979	215	4,094
Myers .....	3,982	79	4,071
Downs .....	3,778	181	3,960

## TO CORRESPONDENTS.

Puer (the question will be found fully discussed in our paper).—A. W. H.—W. R.—J. T. H.—W. T. L. M.—G. C.—Rev. A. B.—G. O. S.—Mr. R.—Mr. C.—J. W.—H. K. P. (send particulars).—C. T. (corrective subulate and crescent have both been recommended,—but see past volumes of the *Builder* for particulars).—P. and S.—H. B. G.—H. C.—Alpha.—G. S.—E. J. S.  
 "Books and Addresses."—We are forced to decline pointing out books or finding addresses.







# The Builder.

VOL. XV.—No. 754.

**A**CCIDENTALLY there have fallen into our hands, two lithographed views and a prospectus, of a proposed church or chapel, in Oatlands-park, Walton-on-Thames, Surrey, from which we discover certain features in the project that seem to call for notice,—for, just claims of our profession, not merely, are concerned with them, but the real development of art, and perhaps also a point or two of morals. Let us first dismiss the question of art. For the "Plan of the Chapel to be erected," subject to the decision of the subscribers,—one, says the prospectus (with the confusion of terms and things, which even the best writers of the public press seem still addicted to), "of which a sketch is hereto appended, has been suggested, as being pleasing in appearance and economical in construction." The plan proper of this suggested building having been described, and some particulars of the probable cost and accommodation required having been given, with references to buildings lately erected,—the Church of "All Saints," Skelton, near York," is next named from having been "suggested"—"as being of a still more simple exterior," and "affording as it does a beautiful example of the Early English style; combining, indeed, almost every feature peculiarly characteristic of that style. But," as it is added, "it is a question whether the carrying out of the interior details of such a church—though the dimensions be but 44 feet by 33 feet,—may not be attended with an expense not warranted in the present case." And in a prospectus or circular by the Directors of the South-Western Hotel Company, who seem to be in some way interested in the present matter, Skelton Church and Boxwell Church, in Gloucestershire, are named as having "both been mentioned as suitable examples." The lithographs show,—one a south-west view of Skelton Church,—and the other, "Proposed Chapel in Oatlands-park," the sketch first mentioned, and which we must again refer to.

Now, the point to which first we would call attention, is that it appears, at this advanced time in the study of Gothic architecture, that churches still can be "designed," and happily built, in which there is not one particle of an element which is essential to the constitution of art. Not one of the examples or models named, is proposed to be used in the way in which only, existing works should be used,—not one of them, we might say, is used really as an example or model. Not one of the designs has been made for the occasion, or the site,—or more possesses any of the chief elements of that art which should have been contemplated as essential in a new building. Of course, the architect of the Hotel Company has had nothing to do with these designs; and when our readers have seen what we have next to say, they may hope there has been no other member of our profession concerned in the business.

The design shown in the view of the "Proposed Chapel," simply is an exact fac simile of one of those in a book of "Designs for Country Churches," by Mr. Truett. Even the lithography is imitated, so that the impressions, till placed side by side, would seem as if printed from the same stone. This use of the book referred to, though opposed to the object

of its publication, and to the interests of art, might have been defended by the committee, on the ground of temporary convenience, provided the slightest credit had been given for the original property and authorship. Not a word, however, is there on that head, and the initials of the original designer have been suppressed, and others substituted. To a note of inquiry which we addressed to the real author of the design, he replies under some surprise, that he knows "nothing whatever" of the church proposed, neither has he made any drawing from his published designs. The committee had better now make such *amende* as they can, by employing him to furnish a new design,—one which would both provide for a suitable church, and not be a negation—as the best design made without reference to actual conditions, is likely to be in point of art.

We cannot, however, let this subject pass without other observations not unconnected with the wording of the prospectus. It is one praiseworthy course, to duly regard any want of church accommodation; and the prevalence of vice and crime claims the active exertions of the clergy and all well-minded persons,—though, if we do not question the facts, we may ask to see a comparison drawn with a proper estimate of vastly increased population. But it is a course of a very different character to speak of "the increase of vice and crime amongst the poor" of this country, or of the "utter insensibility and neglect" of "these classes,"—"domestics and the poor,"—in regard to the services of the Church—"but too well known in the neighbourhood." Let a "certain number of free sittings" be provided in the building,—not designed specially "for domestics and the poor," but for such as like to occupy them; and let efforts be made to induce all "classes" to attend the services. This is not the time when any one class can point to the "vice and crime" characterising any other. How much of the contrast which is drawn between the religious and moral condition of the classes, is due to circumstances which indeed it is the duty of those who are fortunately circumstanced in wealth and education to remove, rather than to lack any where of innate leaning towards what is noble and good? How much of the crowded state of the present churches near Oatlands-park may be attributed to fashion, or "society," or a reason other than a radical difference between the classes which the words that have been hastily used would imply? Much better was the expression in the words of the Bishop of London, which are quoted,—as to the fear that the poor feel of intruding, and the difficulties which thus have force in preventing their appearing "where we wish to see them"—and as to the way of overcoming these difficulties "by evincing our readiness to open up to them places of worship where all such hindrances will disappear, and by encouraging them to consider themselves more as one with ourselves than they now do;" or in the words of the Rev. Mr. Rowse, upon the opening of a church at Stepney, as to the exhibition of an active "brotherhood," and the recollection that the "labouring classes" who so largely contribute to the strength and happiness of the country, need the sympathies and efforts of those who have received a higher education than themselves." Such is the tone that should be adopted by the promoters of new churches,—not the patronising one which regards superior sanctity as the ally of wealth, or "vice and crime" as especially to be found "amongst the poor."

We had much more—that we have been waiting to say on this latter head, and applicable on a wider ground than the case of the projectors of the church in Oatlands-park,—but our purpose has been forestalled by the indignant protest of the Rev. S. G. Osborne on the same subject. With

him we may ask,—are we ever to continue to hear of the degraded moral condition of the lower orders? He says:—

"Who so blind that he cannot see how every class is morally affected by the habits of the class immediately above it? If the higher steps of a staircase are very foul, you may clean your feet as you descend, but you will scarcely leave the last step uncontaminated. I have no hesitation in avowing my conviction that one of the most powerful classes in this country—that class which does read and can observe—that class raised a few degrees above the labourer, but still a few degrees below what is called the middle class—marks, in a spirit which broods mischief, the hypocritical inconsistency which is for ever on the stoop to pity, patronize, and amend, but which shuns that view on its own level which would afford a wider and more urgent field for amendment. Let this system of attack on the depravity of those who have been reared to know no better—who, if they had known better, could have scarce survived their rearing—go on at the hands of those who have never known want, except through extravagance; who have had all teaching, whose youth was protected from contamination, but who adult—seek it, nay, openly seem to glory in the pursuit, and a day of reckoning will come which will shake our social system to its foundation.

How many a man has been transported for life for offences against property, which are mere 'orchard robbery' compared with the deliberate dishonest appropriation of the money of others which so distinguishes the titled, educated, so sometimes religious swindler of our present day! I scarce know a crime now that does shock 'society,' although 'society' sadly laments, per platform, the growth of crime amongst the lower orders."

Again he speaks of—

"the hypocrisy which mourns over the 'motes' of the lower and ignorant, but dares not attack the 'beams' in the upper classes."

And as to education, even, and the want of it, he says,—

"Let 'society,' 'good society,' look to it,—the lower orders can endure the truth being told of their condition, but they will not endure to be forever subject to a comparison with the educated, and treated as if to be ignorant was necessarily to be wicked,—to be educated to be necessarily good. They may with difficulty pick their way through a book, but they have eyes to see and ears to hear."

Truly, the moral sense as to the nature of property and the rights, may be, as it has been found, wanting in the higher, or the middle, as in the "lower classes." One man will rob a hen-roost; another will adulterate his goods, and train up his children in the *virtue* of getting only rich, by any means; a third makes a way with securities entrusted to him, or swindles under the cloak of a company; a fourth steals openly the property of your brain. Where is the distinction,—except that made by the obliquity of vision which serves each of the appropriators when he chooses. There can be no real nicety of difference between that which is punishable as felony, and the appropriation of intellectual property,—none in the conscience, except where that by custom has been blunted. If it must be left to the conscience of an individual to settle in many cases, where appropriation cannot rightly be made,—the moral obligation to right is surely as strong on him, as if all society were witnesses. Clearly, however, if there be cases of doubt, there is no such case where the result of intellectual work is copied off line for line, and form for form, and where a distinct act of payment would have been required to procure that which is got from its real author surreptitiously,—without fee, acknowledgment, or thanks. The "vice and crime amongst the poor" are punished with a relentless hand; and ignorance of legal or moral obligations gains the criminal no respite: are we, then, to hold back one word of ours that should place in the proper light that equal disregard of morals—which is becoming habitual with committees, builders, and many private individuals,—which defrauds our professional brethren of their only capital and property, and all just rights; and against which course—as we have shown—one



of the least of the objections is, that it is utterly inconsistent with the maintenance of a healthy and vigorous condition of architectural art?

### "STYLE."

In the part which Mr. Garbett has been taking in our great controversy—the battle of the styles—he is evidently fighting for truth rather than for victory; and therefore I feel sure that he will not take it amiss if I question part of his letter, for the sake of eliciting a more correct statement of the case.

Now, it may after all prove a mere question of words, from my misunderstanding his definition of "Gothic," which he seems to employ as applicable to almost everything good and true in the shape of art. He seems to confuse "Gothicness" with "truthfulness,"—style or expression, with an elementary base; but unless we keep this distinction prominently in view, we cannot maintain our position; for this is the very point which our opponents constantly assail. On such a point as this, even apparent confusion leads our antagonists to reject the whole of our argument as based upon false premises. It is true that we know of no good work which lacks truthfulness either in Gothic or in any other style; and so, although this truthfulness is one element, it is not the element which makes it Gothic. Truthfulness has nothing to do with "style," as such, and there may be perfect truthfulness apart from the presence of that peculiar mode of expression in which the Gothic character properly consists. And the converse of this proposition is true also; for all, of what school soever, must acknowledge, and do, theoretically at least, profess truthfulness to be necessary to all true art; and the Classicists may fairly find fault with those who fail to acknowledge their just claims, even if the claims are such as to be hardly justified by the result.

Hence it is evident that if truthfulness is the main or only argument that we can find in favour of Gothic, we shall be only defending a post which no one has ever attacked; and we shall be in danger of falling into the enemy's hands by lying ourselves open on other points; like one of your correspondents, who, in his attack upon Gothic, sets up the Florid style of the Tudor period as the Gothic which he himself most admires,—which he then proceeds to demolish (and even at the expense of dealing a home-thrust at his Palladian ally). And thus, without a struggle, he gains a most inglorious victory,—for who would go out of their way to defend a style which is just arriving at its last stage of degeneracy, and possesses but a few fragments of either the spirit or character which rendered Gothic art so glorious during the thirteenth and part of the fourteenth centuries? No one, indeed. If we must fight, let us fight against those who have enough of truth on their side to make it worth our while to test our strength; and if we are but true to ourselves, we need not fear the foe even then.

Our only safe and true ground is this,—to analyse the remains, to fathom the principles, to explore the very foundations of the style of that period wherein we maintain that the highest development of art is to be found, and to base our defence of "style" (until we have worked out a style or school of art for ourselves) upon the positive beauty which still bears witness to the sagacity and soundness of our choice. Then, and only then, if we can agree together as to the general application of these principles to purposes of modern requirement, may we hope to convince those whose predilections are at present in favour of something quite at variance with our own views and tastes. But it must be confessed that we have no right to lay a sole claim to universal truthfulness. Indeed, I could refer to instances of sham in original Medival work of the best period,—in work which all would agree in calling Gothic.

Many of our mis-understandings arise from the improper use and application of definitions and terms; but much also from failing to refer results to their own proper cause. Thus, for instance, Mr. Garbett appears to me not sufficiently to distinguish between the "imagination" as bearing upon "truthfulness" and upon "design." Not that this nullifies his practical conclusions as to the general superiority of our favourite style, but only that I fear it prevents his arguments coming home to his opponents, with the force and clearness that they would have if a little more guarded and methodised.

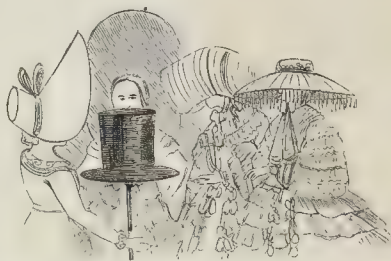
I feel sure, that for the sake of your readers as well as myself, Mr. Garbett will not scruple candidly to correct me if unhappily I have mistaken him, or have, myself, advanced views which may appear to him untenable.

WILLIAM WHITE.

### ART IN DRESS.



*The Wheel of Fashion.*



*"Those who Dwell in Glass Houses should not Throw Stones."*

### ART IN DRESS—FASHION'S FOLLY.

THERE are few things more curious to contemplate than the "whirligig" of fashion—which never stands still, but is incessantly presenting to the view a few original devices, mixed with more which have seemingly become fixtures in the wheel, and are copied, as it turns round, to a greater or less extent from time to time. An old sea-faring character in one of Captain Marryat's novels, had an idea that in seventeen hundred and so many years events rotated, and that in seventeen hundred and so on, he would be engaged upon the identical employment on which he was then busy: a similar belief might, with more means of proof, be attached to the revolutions of fashion. No doubt the ingenious artist who devised the flowing and full-bottomed wig for the fair and youthful French monarch, the use of which was presently adapted to the grim-visaged Charles II., thought that he had hit upon an original device. A visit, however, to the British Museum will show that "there are few things new under the sun," for there will be found a flowing wig just similar to that named, which was worn by some eminent Egyptian, probably two or three thousand years ago.

Amongst the male agriculturists in some of our English counties, fashion has not changed for 2,000 years. A short time ago we had occasion to pass through a remote part of Suffolk, and there the shepherds, dressed in close-fitting leggings, smock-frock, and wide-brimmed felt hat, might be seen peeping on the pipe and looking, with the exception of the beard, as if they had only recently given a sitting to one of our old Saxon illuminators. Many will have noticed this adherence to old costume in other parts of England, particularly in the southern districts.

While, however, amongst the peasant class, the wheel has in a measure stood still, changes have been constantly going on amongst others: we note the burly Saxon in his flowing and graceful robes, the taste of which was partly borrowed from the Romans, and the elegant costume of their wives and daughters derived from the same source; then came the warlike covering, which so well displayed the stalwart forms of the Norman warriors; the female dress of this period is singularly refined and elegant. It would

require a volume to notice the numerous changes which were constantly being made. The armour, from being made to fit to the shape of the human body, grew to monstrous cases unlike anything in the natural creation, which enveloped both men and horses. Many strange devices were turned out by fashion: at one time the toes of the gentlemen's shoes grew longer and longer, until it was found necessary to fasten the end of the point to the knee. This would seem to us ridiculous enough, but many fashions in modern times might be mentioned to show equal absurdities; for instance, when that extraordinary cut, the swallow-tailed coat, was introduced, the length of the tails was moderate; it, however, grew in longitude until the ends were nearly even with the heels, and it was only some merciful turn of the wheel which caused the majority of the long tails to be turned into "spencers." That prevented the necessity of tying the "swallow-tails" to the "pig-tails," in the same way that the shoe-toes were formerly fastened to the knees.

To return, however, to old times. In the records of various English costumes there is much to admire, and it will be noticed that all those dresses which are admired now, and will be, if representations should exist, for ten thousand years to come, are those which modestly cover the human form, but which do not disfigure it by barbarous additions. We have not space at present to notice the extraordinary head-dresses, and other inventions of Medival times, but must be content with wondering that such things should have been permitted to disfigure the fair forms of our English wives and maidens.

Many of the female head-dresses, as well as the other portions of costume in use during the Middle Ages, were exceedingly beautiful and appropriate, and the small bonnets richly decked with ribbons and flowers, now in use, may, in some measure, be considered as a revival of the head-covering of ancient times, and, although scarcely sufficient as a means of protection in this changeable climate, are preferable to the variety of bonnets with projecting fronts which had been long in use.

As we have before had occasion to observe, the taste in dress, in a great measure, corresponds with



that in architecture, and this is strikingly evidenced by an examination of the female costume of Queen Elizabeth's days, and the singular appendage which, as a whole, had a somewhat picturesque effect, but was composed of materials so complicated that it seems strange that so much ingenuity should have been used to render the human body uncomfortable and ungraceful. The padded robes of this reign, in a certain measure, resemble the hoops and crinolines dresses which at present encumber our rooms and disfigure our ladies.

In looking over a number of fashions which have run their course, one cannot help exclaiming, "How could such things have been tolerated?" For instance, why should men who were provided by nature with a plentiful growth of hair suitable to their features and complexions, crop it short and assume the ponderous wig already mentioned? Sir Christopher Wren used to wear one of this description, for fashion is a mania which, like South-Sea schemes and pestilential disorders, affects all. Hair powder comes into use in courtly quarters, and presently thousands of dressing-boxes are at work, and the heads of the multitude of both sexes assume an even covering like snow. In addition to the hair powder, the ladies of that time hit upon several strange devices. They plastered their fine countenances (without necessity) with black patches, which, in course of time were cut to represent familiar forms, and it was not unusual to see a lady of fashion with a carriage and horses on one cheek, a fox-hunt on the other, and perhaps a flight of cupids just above the eyes. This was one of the freaks of fashion, in favour of which nothing can truly be said, and yet, no doubt, many a compliment has been passed upon the taste and arrangement of those patches.\*

It is worthy of remark, that fashions generally succeed in extremes. One year the robes of the ladies are so long that they have either to be tucked under the arm, or else borne in a most troublesome manner behind; in the next year the dresses are ridiculously short. The bonnets assume dimensions which are an inconvenience both to the wearers and others, and then on a sudden they become so small that the heads are scarcely covered. The high head-dresses shown in the engraving enabled the wearers to dispense with bonnets altogether; for where could they put them? or what shaped covering would have been needed for such a superstructure? Let those who smile at the peculiarities of the Chinese and other foreign people, contemplate carefully this fashion of our great grandmothers—this commanding head-dress, which rose to the height of from 2 to 3 feet, and was, we are told, most skillfully built up and stuffed with new hay when that material was to be had. Surely there must have been something wrong with the heads of that date? How else can we account for their style of dress, and also for the accompaniment of the huge balloon-hoop which still further served as means of disfigurement.

At the time this fashion prevailed, taste in England was in a poor state. Education amongst even the higher classes of females was very limited, and pugs, dogs, monkeys, porcelaine monsters, negro and dwarf attendants, and other matters which could not tend towards a feeling for the beautiful, were the rage and fashion. After this time came various styles of head-dress—some simple and becoming at their introduction, but which grew (as did the gipsy-bonnet), until their extent and absurdity caused them on a sudden to disappear. Amongst the head-coverings of the last century was one pretty enough when first brought in, but which so expanded in proportion, and was so gaily decked with flowers, that the pictures of it remind one of country girls on May-day morning with the large ornamented grottoes on their heads.

We had hoped that it would have been seventeen hundred, and many more years, before the high head-dresses, the hair-powder, plaster-patches, coal-scuttle bonnets, and unnatural bows, should again make any prominent feature on the wheel. Our hopes as regards the latter of these, however, are doomed to disappointment, for the hoops of old, under another name, have been bowled round again, and the robe copied from a recently published fashion-book measures upwards of 5 feet in diameter, or over 15 feet in circumference; nor can it be said that matters are yet at the worst, for each month's engraved fashion seems to show a larger and more expressive arrangement. Truly, if the rage

\* It is curious to remark that the liveried servants of the rich are a means of preserving the costumes of various periods for many years: the silk bags on the backs of the state footmen, the long, lined laced coats, the cocked hats, knee-breeches, and silk stockings, were the ordinary apparel of the gentlemen themselves. The hair powder, so much in use sixty or seventy years ago, by nearly every one of respectable condition, has now descended to the servants' hall, and the neat wigs of other days may be still seen surmounting the craniums of fashionable coachmen, and in due course, as the wheel of fashion moves round, the present dress coats, white waistcoats, and neckties will have lost their position, and taken the place of the laced coats and corresponding paraphernalia.

continue, changes will be necessary in all directions: carriages must be enlarged; the charge for admission for ladies to all places of amusement must be greatly advanced, owing to the extra space required for their reception; our foot-pavements will be quite inadequate for their purpose; garden-walks and church-pews must be enlarged; and, then, as the middle classes become more infected, the confusion in omnibuses will be terrible.

We learn from a morning contemporary that one house in Sheffield has taken an order for forty tons of rolled steel for crinolines, and that a foreign order has been taken for the supply of one ton a week for some time to come. This and other matters which have come under notice, show that busy preparation is going on. We trust, however, that our fair friends will, by timely reflection, prevent the inconveniences to which we have alluded, and at the same time restore the fashion to a style which is more in accordance with truth, beauty, and nature,—to say nothing of the pockets of their bread-getters. It is with much diffidence that we venture these observations, for we well know that to run a tilt against the raging fashion is almost as hopeless a task as the course of Don Quixote against the windmill; and, moreover, we are not blind to our own short-comings, and when we think of our own head-coverings in particular, we cannot fail to remember the old proverb, "that those who dwell in glass houses should not throw stones."

### THE BATTLE OF THE STYLES.

A RUPESTRIC EPIC.

"A style for Challengers."—Shakespeare.

### TO THE JUDGES,

APPOINTED TO AWARD THE PREMIUMS TO THE COMPETITORS FOR THE PROPOSED GOVERNMENT OFFICES AT WESTMINSTER, THIS POEM IS MOST ARCHITECTURALLY DEDICATED.

A BLOODLESS Fight,—that is, of blood  
Not shed,—but whirling like the flood  
In rocky basin round and round,  
And savage, at the least in sound,—  
I sing: and now invoke the Muse  
To aid me, though she do abuse  
The terms of gentle manners all,  
So they be architectural:  
For, if the Orders be sustained,  
No order, else, need be maintain'd:  
Keep but the Pedestal intact,  
No matter then you stand on fact;  
Preserve the Columns, straight and tall,  
Then let the grace of court'ry fall.  
*Establishment and Pediment*  
Will stand for weighty argument;  
Nor need you "mind your stops," my Muse,  
If *Painted Periods* you use:  
Be still elaborately versing,  
If but with *Theory* perplexing.  
No need for strength in what you say,  
If *Battress* hold it up to-day;  
Since, if a while sustain'd by will,  
Habit may keep it standing still.  
If slender wit prove cynical,  
Speak of the aspiring *Pinnacle*;  
If folly angel-ward mount high'r,  
You've but to cap him with a *spire*;  
If impudence good manners shock,  
Top all with brazen *weather-cock*!  
Only, in Christian piety's loss,  
Presume not to insult the *cross*!

Loog had the *Classicals* repos'd  
Within their *Attic* chambers clos'd;  
Whence they beheld the ruin'd walls  
Of "olden" homes, or Tudor halls,  
As mould'ring things which seem'd to say,—  
"The GOTHS have been,—and pass'd away."  
On sunny balcony, or shade  
Of pedimented colonnade,  
A Burlington might deem him sure  
Restor'd refinement would endure;  
Since good things lost, and found again  
Are all the likelier to regain.  
"The light of antique days," said he,  
"Now shines again resplendently:  
No more shall mystery deceive all,  
As in the period *Mediæval*:  
No monkish gloomy piles again  
Keep out the sun,—let in the rain;  
No iron casement, grating, cry  
On rusty hinges discordantly,—  
Not even in the scullery;  
For, with the 'rush' in 'presence strew'd,'  
'Tis banish'd to where chickens brood.  
No more shall gaping windows own  
Their purpose half if'd up with stone;  
Nor of the glazier shall be said

He fills up half the rest with lead:  
We've won the plate in glass of size,  
And the full landscape glads our eyes,—  
Each pane a picture, all the same  
As we would hang in gilded frame.  
Mediæval times and fashions gone,  
Be modern times and fashions one;  
Or, for the comforts of our day,  
If no new forms a 'fit' display,  
Let's seek, no matter in what age  
For such a 'fit' as we'd engage.  
Where, likelier, truth and grace to find,  
Than in those ages when the mind  
Of Greece or Rome its height attain'd,  
And Pericles or Cæsar reign'd?  
When Buonarroti raised his dome,  
Palladio gave to Taste a home,  
Taught Luigo to teach again  
The laws which ruled our matchless Wren?"

So reason'd he; and in our land,  
Lo, where Corinthian portals stand,  
At Benham, Castle Howard, Stow!  
Not more Vicenza's self could show.  
Yet view'd he not the ruins round  
As worthless loads on valued ground.  
"No, let them stand," he needs would say,  
"The GOTHS were glorious,—in their way;  
The ivied church my feeling roses,—  
I like it well, but d—n their houses!"  
Yet even these had still his care,  
E'en as his grandmother's grey hair,—  
As things made picturesque by time,  
Which ne'er had beauty in their prime.

But men, ere now, supposed dead,  
And all but safely buried,  
Have sudden made a gentle cry,  
And, shortly, roar'd most lustily;  
Till cælin open'd, and the baker  
Fetch'd in lieu of undertaker,  
Grim Death has soon giv'n up the strife,  
And bread once more has nourish'd life!

So slept the GOTHS in death-like seeming,  
Although with future life yet teeming,  
Till some "dark age" apologists,  
And d-d'ing archaeologists,  
Amid the fall'n ecclesial stones,  
Awaked a voice, which, low—but clear—  
Said,—*"I'm not dead, but sleeping here!"*  
"Drag forth the ivy from my face!  
Though worn, my features you may trace;  
See, proof of life is on my shroud,  
All *rubric'd*! I speak aloud!  
Infuse your blood into my own,  
And I shall live again in stone;  
Throw off my pining Gothic torpor,  
And crush the *Classical* usurper."  
He rose,—he stood,—he walk'd at length;  
And, though he slowly gain'd in strength,  
He was restored in blood and brain,  
And so went forth,—a man again!

And now the priest began to see  
The fatal inpropriety,  
Of worshipping in churches builded,  
With what heathen temples yield'd.  
"Arise, ye GOTHS!" he frantic calls:  
He'd lay a train beneath St. Paul's:  
No matter now, how old or shabby,  
He sees but beauty in the Abbey:  
Of Christendom he hails the peoples,  
"Down, ye *Domes*; and up, ye *Steeple*!"  
The "olitic genry," too, he romances,  
"Ye shall not live in *Classic* houses!  
Down *pediment*, and up with *gable*!  
Or in cathedral, or in stable,  
Be still your *stalls* of Gothic cut,  
What things see'er ye in them put!  
What'er the debt, we'll have the debtor,  
Pay alone in *Old Black Letter*.  
(Thus bipeds, rich in *Classic* learning,  
Or quadrupeds of Greek discerning,  
Still save the grace the Gothist garbles  
All natural as Elgin marbles.  
And thus, the monk rev'dent critics sue one  
To Gothic art as but the true one,  
They still in Pagan Latin speak,  
And Gospel read in heathen Greek).  
E'en Lady-John can turn awry  
From all but *Gothic Glossary*:  
Apse; Battress; Crocket; "Decorat'd;"  
Early English; Foliated;  
Gargoyle; Hood-mould; Jesse-tree;  
Kernel; Letter; Mychnery;  
Nave; Oriel; Parvise; Quire and Rood-loft;  
Scullia; Turret; Vintette; Wood-loft;  
X is wanting; Yard (see Yerdie);  
Zig-zag our last Gothic word is.

But, while the *Cassierists* and GOTHS



Evangel like butteflies and moths,  
As the party woke from slumber,—  
The rich re-nascent Renaissance.  
Like Stanley twist the twine at Bosworth,  
Still thinking which his favour was worth,  
Or Dick, or Harry,—till no longer  
He might don't which should be stronger,—  
So stood the bastard, till he rather  
Chose the *Classic* for his father.  
"Fighting self" of the Grotesque,  
He'd yet preserve the Picturesque;  
And thus declared 'or *Classic*, which found,  
The favour Stanley shew'd for Richmond.

And now, while must'ring in their wreath,  
It seem'd "all Dicky" with the Goth,  
Until, said he, "Though 'tis beneath an  
Architect,—Elizabethan  
Aid shall help the true aspirant  
To overthrow this *Classic* tyrant.  
If, with foreign hirelings, he,  
Seeks to vanquish, so will we.  
To *Classic* self we'll owe our doors,  
As he invokes Louis Quatorze:  
If beggary may make us call,  
Why then let us be 'beggars all,'  
And dreary in rage ne'er fall!"

Then Renaissance, with pride elate,  
In its heraldic robes ornate,  
Rich in swelling undulation,  
Flourishing curves of elevation,  
Mix'd with shells and wanton scrollery,  
Much resembling stems of celery,  
Winding into rare humanity,  
All profuse as "Fair of Vanity,"  
Mixing Faery's varied creatures  
With the sterner *Classic* features,—  
Then Renaissance, like King Mural,  
Prince of personal *clat*,  
Rose as Fortune's low-born son,  
Splendour's chosen champion.  
Seductive, he the eye entices  
From Tudor's mongrel last devices;  
French-like, starts into the van,  
To brave th' "Old English Gentleman."  
"I join with you, ye *Classic* pure ones;  
Fight with me, ye'll fight as sure ones;  
All, that Gothic splendours yield,  
I'll surpass with this my shield  
Emblazon'd with florescent tawne,—  
The gorgeous added to the chaste!"

Stirr'd with bursting indignation  
Came the Briton into station,  
Ruffled like the up-starch'd gear  
Old Queen Bess was wont to wear  
O'er her shoulders, like the tail  
Of turk-y-cock when fowls assail.  
"You, you Gallic cock," said he,  
"Let down your feathers, for they'll be  
But borrow'd plumes; while I adorn  
My friends with 'manners to them born  
And native here; 'Bon jour,' vain fop;—  
A French adieu to your French slop."

"To the manner born!" said he of France,  
"Why, we are both but Renaissance;  
But you your future purpo-e foil,  
And what you've stolen do but spoil.  
I take the good the gods provide,  
And by my use on't please their pride;  
You take your 'pearls' from hands divine,  
And treat them, proverb-true, like 'swine.'  
We both give old things a new birth,  
But I alone afford new worth."

With this the neutrals turn'd away,  
And, neutral now no more, array  
Themselves among th' opposit' lines,  
Beneath the Greek and Gothic signs.  
Renaissance joins the *Classic* heathen,  
And Gothic owns th' Elizabethan,  
The forces then full back prepar'd;  
And war is formally declared.

But not alone the fight remains  
To the great parties on the plains;  
From forth each a chival'ry arise  
Come stray heroes to the slaughter,  
To shoot at random, swell the puer,  
All careless or for one or t'other.  
Egyptian from the tombs of Dender,  
Rises like the witch of Endor;  
Pæstan Doric, heavy, solemn,  
Sends its mighty fluted column;  
Wanderers come of Mosquitch races,  
And Abamitan with its graces;  
Comes Lombardie in striped jacket,  
Byzantine in patchwork placket,  
Continental mongrels may  
Think themselves as good as any;  
These arrive to see the fray,

And fight, or not, as choose they may;  
Gaining lovers as they stand,  
If not some root in this our land.

And now each front to front opposes,  
Like the white and blood-red roses;  
One, or both, shall now be *un-done*,  
Peter, York,—or Paul of London.  
Pediment would first disable  
Cross-upp'd, high-pitch'd, Gothic Gable:  
Battlement doth next invade  
Gothic pillar, bellic'd *Balustrade*,  
Swellthug, bellic'd *Balustrade*,  
Gothic pillar furious walls  
Its slender rods 'gainst *Classic* shafts;  
Buttress seeks to overmaster  
Flat Corinthian *Pilaster*;  
Pointed arch of segments, sticking  
Up, like "merry-thought," of chicken,  
Seeks t' o'erstride the circle-demi,  
Like Isosceles o'er Semi;  
Spurning as becometh free-stone,  
Archivolt-fast-locking key-stone;  
Dark Triforium shows its teeth all  
'Gainst the like in Greek *Hypæthral*;  
Clere-story, its plemious airiness  
'Gainst the *Attic*'s daylight chariness:  
Windows,—these with inner tracings  
Challenge those with outer tracings;  
Porch o'er-gabled, close and gloomy,  
Frowns on *Portico* the roomy;  
Tower and Steeple, ostentations,  
Envious, look upon the specious  
Dome, and think they will be view'd  
The loftier for less amplitude.  
Next, the fond allies, all hotly  
Fierce in their respective molley,  
Both, alike for others' glory,  
Fight like Jacobin and Tory;  
Battling for the parts they've taken,  
Though by principle forsaken.  
Lastly come the merry strangers,  
Shooting wild, like random rangers,—  
"Gothic sharps, and Grecian flats,  
On, like the Kilkenny cats!  
Mutual murder sure prevails,  
Ours the triumph and your tails!  
Keep it up as you begin,  
Fools fall out that rogues may win!"

Long the battle rages, till the  
Dust and thick'ning vapour fill the  
Air, and make them in the smother  
Aim at foe, but hit the other.  
Argumentative four-pounders  
Wound their shooters as rebounders;  
Fury blinds discrimination;  
Error tries recrimination;  
Truth lays lustily about him,  
Greek, or Goth, alike he'd clout him,  
Till a mist, above, around 'em,  
Densely rises to confound 'em,  
Smoother'd half, and all perplex,  
Nothing done, each cries "What next?"  
When, from forth the murky cloud,  
Comes a voice most full and loud,  
Booming o'er th' astonish'd ear,  
"Harmonious charmingly" — and clear!  
All amazed, the warriors listen'd,  
When, amid the fog, there glister'd  
Something like a sunny beaming,  
Still increasing in its gleaming,  
Till the cloud grew lighter, lighter,  
And a form still brighter, brighter,  
Soon appear'd, as off the haze went,  
Standing clear, to their amazement!

A lady fair, of matron grace,  
With honest purpose in her face,—  
Of statly build, and well knit frame,  
As e'er from womb of marble came,—  
All perfect in proportion's law,  
And beautiful as art could draw;  
Just habited, as best might be,  
To serve the time's necessity,—  
E'en such a lady bid them throw  
Their weapons down, and bend them low.  
Where'er, or whences'er her birth,  
She seem'd to claim this spot of earth,  
As native to't; and e'en the time,  
As though it were her breathing prime.

The squabblers wouder'd, in their plight,  
Who she could be,—as well they might,  
For speaking beauty like her own  
Had not of late appear'd in stone.  
They had but fought for Fashion's dress,—  
Not for the Truth in nakedness;  
And thought it was as puppy's can,  
How that "the tailor makes the man."  
The architect, at once alone  
Had seen as yet Contention's bone;  
And much blank wonderment came o'er them,  
With Architecture's self before them!

"How now, ye ill begot and bred,"  
With sternest scorn, the lady said,  
"What is't ye do, ye imps of fame?  
A deed for nothing but a name!  
Back to your tents, ye rabble rout,  
And learn what 'tis ye fight about:  
A garment, cap, a glove, or shoe-tye;  
Back! and better learn your duty.  
Learn to build a carcass neatly,  
All conveniently and neatly:  
Think upon its purpose duly;  
Strive to meet that purpose truly:  
You'll do much in this alone,  
To make fair Beauty claim her own:  
Think not what the fashion should be,  
Till the form is what it would be:  
Give the head the cap that fits well;  
Give the body that which sits well;  
Let th' Expressive give direction,  
Suit with colour the complexion:  
Whether Gothic, Greek, or Roman,  
Be a fashion-slave to no man:  
Take old forms, if any rest  
Above your own invention's best;  
Take, or modify, or alter;  
To reject may be to palter  
With the wisdom of the kings  
Ye reverse in other things.  
You, ye Goths, who go to college,  
Scorning even Christian knowledge,  
If it be not from the page  
Of your Greek Testament,—assuage  
Your senseless ire against the people  
Who aspired not to your steeple."  
(Here the *Classicists* took their credit,  
And for why? Themselves had said it.)  
"You, ye Greeks, are only fools,  
In blind submission to the rules  
Ictious follow'd, in his day;  
For right should look another way,—  
As did the Roman, when he grafted  
On his own the forms he drafted  
From fair Athens. Learn, that use  
Of present modes is not *ab-ue*  
Of manners past, although you mix 'em,—  
If harmoniously you fix 'em."  
(Here the *Gothists*' joy 'gan riot,  
Till he thought he'd best be quiet;  
For the lady raised her finger,—  
Then continued with this stinger:—)  
"Renaissance, at least, has blinded  
Old and new in junction splendid;  
Goth and Tudor have but cobbled,  
In a union ne'er ennobled;  
While the rest that hover round you  
Only do the more confound you;  
Since they multiply your choices,  
Crying all, 'Give us your voices!'  
Back, then, to your homes corrected,  
From prejudice be disinfected.  
In lieu of this or that persisting,  
Think there is no style existing:  
Unto use your fancy yielding,  
Give sole care to your building  
As a thing of walls and floors,  
Roofs and chimneys, windows, doors,  
Sheds as shelter from the show'rs,  
Balconies for sun and flow'rs.  
Perfect all in honest way,  
And then will come 'the time o' day'  
For seeing how you may impart  
To Use's form the grace of Art.  
No more be special modes contested,  
Till you see what are suggested;  
Then, should difference pervade,  
I may come once more to aid;  
And either make you all agree,  
Or give you right of liberty.  
A truce, then, to this fight for fashion,  
Which savours less of sense than passion!"

She said, and vanish'd; and again  
The cloud came o'er the battle-plain.  
Ashamed, confus'd, and stiff with bruises,  
The foes retired with wholesome musings.  
Silenced—not convinced—they wended,  
Only now to be befriended  
By the thought so sweet to sinners,  
Where all lose, there none are winners.

But,—the battle-field next day!  
What a scene of druid dismay!  
There, *enablature* was laid  
Prostrate o'er the Goth's arcade:  
Through a dome a spire protruded:  
O'er a vase an old font brooded:  
On a Gothic *survaphane* there lay  
A Gothic priest in stiff array;  
Grinning monsters lay along  
O'er a basin of egg and tongue;  
Yet, amidst the havoc round,  
Rose the Doric column, sound,



Erect and firm, as who should say,  
 "I'll stand my ground, come what come may."  
 Prostrate lay the *allie frieze*,  
 With an *Elysian* there, to seize  
 Upon its sculptured *marbles* rare,  
 Them to save with *halloo's* care;  
 Jewels they—*themselves* alone  
 Worth all the *remnant* ruin'd stone!  
 Thus, conq'ring in his fall, the *Greek*  
 Remains; and shall for ever speak  
 To future ages his election  
 For the *sculptor's* last perfection!

GEO. WIGHTWICK.

#### APPROPRIATION OF SMITHFIELD.

The report of the committee appointed by the Corporation of London, respecting the appropriation of the site of old Smithfield-market, is now before the public, and the matter is of so much importance, that we will endeavour briefly to put the present state of affairs before our readers. It appears that the committee above mentioned was nominated on the 10th October, 1849, so that their deliberations extended over a period of about eight years. During this long space, the Town Clerk and Remembrancer were instructed to make inquiry into the origin and rights of the corporation to the site of Smithfield.

As soon as it was known to be the intention of the corporation to endeavour to obtain powers to enable them to cover the site of Smithfield with a market for the sale of dead meat, poultry, &c. the governors of St. Bartholomew's Hospital communicated with the Government, for the purpose of inducing them to oppose the use, for any building purposes, of a large part of the vacant space. Meanwhile the architect prepared plans, showing, as far as could be ascertained, the ancient site of the market, and also those portions which had been purchased by the money of the corporation for its enlargement. Other plans were prepared, and in 1855, a deputation waited on the Chancellor of the Exchequer, when the matter was thoroughly gone into. Respecting this interview, Mr. H. L. Taylor, the chairman of the committee, says,—"From their first visit to the Chancellor of the Exchequer, they had decided not to raise the question as to the rights of the soil in ancient Smithfield, but they had nevertheless agreed amongst themselves to oppose any attempt at its seizure on the part of the Government."

The first plan submitted enclosed the whole of the site with the exception of a thoroughfare, 60 feet wide at one end, and 80 feet at the other. At first the Chancellor of the Exchequer seemed to make little objection; but, as Mr. Taylor says, "The hospital authorities interfered, and at their next interview with the minister, he did not appear to be so well disposed towards the plan, intimating his desire to retain the whole of the portion of the ground from Giltspur-street to Long-lane, fronting the hospital, in an open space."

Soon after this a committee, consisting of the Right Hon. W. Cowper, M.P. the Hon. H. B. W. Brand, M.P. and Mr. W. N. Massey, M.P. were appointed by the Crown to consider the question of the open space of Smithfield as a sanitary necessity, who were appointed to discharge that duty by receiving evidence and reporting thereupon to the Government.

In February, 1856, a deputation of the Markets Improvement Committee waited upon these gentlemen, when the City architect laid before them plans; evidence respecting a dead-meat market on this site was also given. After this the Government committee reported that "On the whole, they were of opinion that the site of Smithfield should be kept free from buildings; that a new metropolitan meat market should be established; and that such market should be placed in a central position." The City committee were asked whether they could not appropriate some portion of Victoria-street to the purposes of a new market; but on the authority of Deputy Hicks, it was declared to be impossible to place a thriving meat market there. Evidently the Government were strongly opposed to building on any part of Smithfield, if it could be avoided.

"Other plans," says Mr. Taylor, "were prepared in April last, and at the request of the Chancellor of the Exchequer they were left with him, and an early answer promised; but up to that time (July 10, 1857) no letter had been received. Still, however, there was a further fact which he had to communicate to the Court of Common Council, and which was this, that although no letter had been received, the Remembrancer had received back the plans from the Treasury, and the Chancellor had marked a line upon one of them in pencil, intimating to the officer verbally that if the corporation would consent to take that line, he (the Minister) and the Government would have no objection to the plan;" and thus it appears the matter of the appropriation of Smithfield rests at

present.\* It is with pain that we mention facts which threaten the covering up of this ancient historical site, which has, until a comparatively recent date, been an open space for the use of the citizens of London for more than 1,000 years. We have on more than one occasion referred to the circumstance that this valuable site was granted to the corporation in trust, to be kept an open space for the use of the citizens for ever. We therefore hope that this question may have further consideration, which will result in the appropriation of some other site which may be equally useful, and leave us this open spot.

A single walk through the dead-meat markets of the metropolis will show the necessity for change. Newgate-market, for instance, what can be worse than its arrangement? A chief portion of it is, in fact, a passage of no great width, which leads at right angles for some distance from the south side of Newgate-street, and then at right angles again leading to Warwick-lane to the entrance below the picturesque tower of the hall of the old College of Physicians. From this point the market stretches a short distance towards Werwick-square, and then again appears on the east of Warwick-lane. The appearance of this place on any hot summer's market-day is most extraordinary and unpleasant. Piles of beef, pork, sheep, &c. may be seen in stacks, both in the carcase and divided. The proper ventilation of the place (particularly the western part) is impossible: on one side is the Newgate prison, on another the high houses of Newgate-street; then there is the narrow Warwick-lane and square on the other sides. It is, we think, not saying too much to state that the improper arrangement of this portion of Newgate-market has been the cause of rendering unwholesome and useless, to the value of many thousands of pounds sterling, one of the important necessities of life. The more eastern portion is more open, but not at all what it ought to be; and yet, notwithstanding these imperfections, we believe that the removal of these markets will meet with great opposition from the present tenants.

One of the reasons which is given for the establishment of a dead-meat market in old Smithfield is, that it will be the means of restoring the value of the property which has been deteriorated by the removal of the meat for living animals. It is unfortunate that no great good can be done without some amount of damage; but in connection with the neighbourhood of Old Smithfield, it would seem that the chief portion of the mischief has already been done. Many of the old hostleries, have removed to or near the new market; and it must be borne in mind that the loss of custom to the shops in the adjoining streets has, in a great measure, been caused by the removal of many thousands of persons from the large area along the Fleet valley which is now vacant.

If we walk round the present area of old Smithfield, it will be found that the number of shops and other places of business is not so large as might be generally supposed: the hospital occupies one side of the space, and another large portion is enclosed by bare walls towards the Charterhouse. A part of the property is dilapidated, and must, as a matter of necessity, be shortly removed. Surrounding Smithfield, notwithstanding the removal of the houses already mentioned, there is a dense and pent-up population: look, for instance, into Cloth-fair, and the narrow, high-built alleys which surround the ancient church of St. Bartholomew, and the other places leading from Long-lane; and, on the side towards Snow-hill, at the maze of thickly-peopled alleys which are there placed. In looking along the streets which lead towards the open area of Smithfield,—if we except public-houses, coffee-houses, and shaving-shops,—it is curious to notice how little the business establishments would be affected by the opening of a dead-meat market in this locality; and, after careful consideration, we cannot help thinking that, if the portion of site which has been purchased by the corporation were occupied by them with suitable dwellings for the families of numerous working men employed in the City, and the other space left open and made slightly, in a short time, when the new streets are built adjoining old Smithfield, it will find a legitimate use and soon be greatly improved in appearance.

In considering the position of a new metropolitan dead-meat market, it ought to be remembered that our advanced sanitary knowledge, the facilities of railways, &c. will not much longer permit the slaughtering of the animals required for human food in the midst of a vast population: it therefore becomes evident that this necessary purpose must be performed either on the vacant space of the new cattle-market, or elsewhere. The quantity of dead meat brought by the different railways is rapidly increasing, and no doubt in time a large portion of our supply will be brought to us in this way: it therefore becomes a

\* It appears that the approximate cost, as already estimated by the City architect upon the plan alluded to, amounts to 250,000*l*.

matter of importance that a dead meat, poultry, and vegetable market of sufficient extent should form an important part of any central metropolitan railway terminus. It is uncertain yet where this terminus may be fixed; however, if it is determined to erect at once a market for the purposes above mentioned, there surely cannot be any difficulty at the present time of finding a site without the sacrifice of old Smithfield. There is the neglected and almost unused Farringdon-market, and the space of the Fleet Prison, forming a large area, which might be extended at a comparatively small expense in various directions; and in spite of the authority of Mr. Hicks, we cannot see how this site would fail to be as useful to the dealers as either Smithfield, Newgate, or Leadenhall: it would be very convenient to the Tanners, by which beef and other provisions might be conveyed to the shipping in the river and docks; and if it should be determined to make a central railway terminus on the vacant space of the Fleet-valley, nothing could be more ready than the site just mentioned for a market, such as is required, to which the meat so ready for consumption could be brought from the abattoirs of new Smithfield and various neighbouring and remote parts of the country by railway.

#### WE MOVE ON!

It is often difficult, even amid the roar and bustle of the London streets, to avoid falling into dreamy thoughts of by-gone days, which, while they do not prevent one from elbowing his way through the crowded thoroughfare, cause the rattling of wheels, the hum of voices, and the never-ending tide of human forms and faces to be as little heeded as the sounding of the sea is by those constantly living on its shore; and a slip into the mud, or the splashing of a cab-wheel, has been the means of taking the thoughts back to the days of projecting piers, highly-pitched roofs, and long spouts of lion's head and other devices, from which, at times, the rain poured on the unperceived street.

Miserable meet have been the case of the shopkeepers of London in such weather, for they must undoubtedly have been obliged to draw up the shutters of their unglazed shops to keep out the rain, and betake themselves to what?—tobacco in those ancient days had not come into use, so that they could not smoke their pipes: in reading they were not much skilled, neither had they magazines or journals.

As to the ladies, they must, as a matter of necessity, have remained within doors, for surely the call must have been urgent which could cause a fair dame to venture outside amid the splashing waters from above, and the quagmire and puddles below. To add to the difficulties of the roads, there were then no sedan chairs, hackney coaches, cabs, nor even umbrellas.

Our thoughts do not, however, at present go back to that old date when, in addition to other curious matters, long rows of peck-horses and tilt-waggons might be commonly seen in London streets conveying the various kinds of merchandise, but rather to things which many will remember not long since, but which are nevertheless now matters of the past.

The deep bass voice calling "sweep—sweep, oh!" closely followed by the tiny voice of the little sufferer behind, has ceased as regards the latter.

The dustman's bell is still. The dogs once employed in drawing cat's-meat barrows have been thrown out of work: the huge advertising vans, surmounted by monstrous hats, dust-pans, carpet-bags, and other devices; the long regiments of men bearing placards, announcing wondrous bargains, have all vanished;

"And like the baseless fabric of a vision

Leave not a rack behind."

They seem to go, and nobody misses them; and it is only when in some reveries, such as those above mentioned, that one is liable to turn round and wonder what has become of these once familiar features of the London thoroughfares.

The sedan-chair, that far-famed conveyance of our great grandfathers and grandmothers, has not been met with in the city for many a day: there may, however, be found in the London workhouse two or three worm-eaten examples, the gilding and embossing faded, and the once showy leather hangings in tatters: we imagine that one of these in Fleet-street, at the present time, would excite as much curiosity as a cocked-hat and pig-tail.

We have in old times "heard the chimera at midnight" things are now changed: the ancient Chimeras, their hourly cry, watch-boxes, horn lanterns, and other accoutrements, are gone from the sight and eye. It is the same with the mail and stage coaches and the guard's lively horn, and it will not be long ere we have a last glimpse of the lumbering hackney coaches, decked, like an undertaker's shop, with faded heraldic representations: the coachman, old and feeble, dressed



in that coat of many capes, will soon be off "the stand."

The link-boys, the street oil-lamps, the dim oil and candle-lights in the tradesmen's shops, have all been put out by that modern improvement, gas. Not more than 35 years ago, bulls were commonly baited at Spitalfields and elsewhere; then we had our cock-pits and other "amusements." The dancing bears, and other matters, which were once so common in our streets, are now no longer seen: even the parish beadle, that once great authority, is now much less thought of than an ordinary policeman.

The dress-sword, very commonly worn in Johnson and Goldsmith's time,\* has been superseded by walking-sticks and umbrellas.

It is a sight to see the "charity children" going in various processions to St. Paul's, on their anniversary; then may be observed boys in leather breeches, green and other coloured antique coats, and little girls in dresses which, however much they may remind us of old times, are anything but becoming; and although owing to a considerable extent of antiquarian predilection, we should not be sorry to see these distinctive and improper badges of charity disappear, like the things above mentioned.

The musical chimes have been stopped in several of the city churches: some of the neighbours considering them an annoyance; although we think the "Old Hundred," and other quaint tunes, sounding from the bells, are pleasant to hear for a few minutes, either in the midst of business, or in the still night; often have we lingered for half an hour, near the grey tower of Cripplegate Church, to hear the chimes there which, no doubt, were familiar to Milton's ears.

The bellmen of the different parishes and wards, who were not long since the great advertising medium, are functionaries now unknown in the metropolis. The last time we heard a city bellman was more than a dozen years ago, about one o'clock on a Christmas morning, ringing the

"Wives and maids to rise,  
And bake their puddings and pies,  
For 'twas Christmas-day in the morning."

Inside the houses we also miss many well-known objects. Few have seen for many a day past the patience-trying apparatus consisting of the tinder-box, flint, and steel, which so often troubled both dames and maidens, at early morning in particular: thanks to the inventor of lucifer matches. The spinning-wheel is gone, so are the needles and sheaths for stocking-knitting. The spinnet and other old-fashioned musical instruments have succumbed to the pianoforte. Indeed, "such changes in our time we have seen," that they are too numerous to mention in a brief paper. We must not, however, omit an important feature. In the printing-office of this paper there are still at work several hand-printing presses, some of old date. With a much more primitive machine the woodcut illustrations of Thomas Bewick's books were slowly printed. How wonderful the contrast between these and the huge power, in the same office, which throws off, as if by magic, thousands of impressions in a morning!

Nor is the change in the river less surprising. In the towns we have railway stations of a new kind of construction, and of such an extent, that it would have seemed madness a few years ago to have shadowed an idea of them. London is surrounded by railways, which will soon move into the heart of the City. The electric telegraph flashes its news below our feet, in the most bustling thoroughfares.

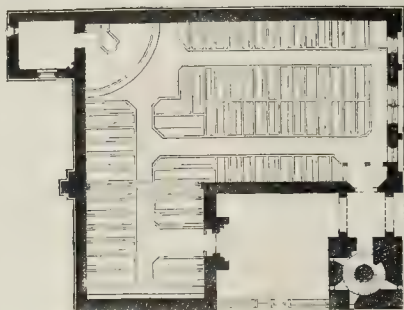
A great portion of the London dead is being taken for interment to a distance from the crowded population. The steam-engine is doing its miraculous work. Old Smithfield market has moved, though not, we fear, to a sufficient distance. Baths and washhouses, improved dwellings, improved sewerage, improved schools, and other matters, which even in their infancy give great promise, are rapidly driving away old-fashioned prejudices, and induce the hope that if every man will but do his work, the advance in the next twenty-five years will not be less remarkable than it has been in those which have preceded them.

#### THE BROTHERTON MEMORIAL COM- PETITION.

SIXTY-NINE competitors have submitted designs (several of them more than one), in reply to the committee's advertisement, and these are now open to the public (till July 18), in the Peel-park Museum, at Salford. The monument is to cost 500 guineas. The committee have printed as a pamphlet the descriptions accompanying the designs, which serve as a catalogue, and make the exhibition one of greater interest. Up to this time the course pursued by the committee appears to have been praiseworthy in the extreme. The majority of the designs are Gothic in style, and many of them very indifferent.

\* Milton, the famous etcher of foliage, and other artists, might be seen wearing dress-swords not more than thirty years since.

GROUND PLAN



UPPER PLAN



SCALE OF FEET

THE SINCLAIR SEAMEN'S CHURCH, BELFAST.

#### THE SINCLAIR SEAMEN'S CHURCH, BELFAST.

THIS church is now in progress, and will cost about 3,000*l*. It is being erected by public subscription, as a memorial to the memory of the late John Sinclair, esq. of Belfast, and is designed to accommodate the seamen of the Presbyterian Church frequenting this port. The first stone of the building was laid by the Lord Advocate of Scotland, in October last. The material used is the County Down Sandstone. Messrs. Lanyon and Lynn are the architects. A sailors' home is also about being built in the same locality.

#### STREET LINES.

IMPROVEMENTS projected in the Government offices, and the clearance which must be effected in the noblest quarter of London, before the foundations are laid, cause no little distrust, lest in the realisation of plans, however faultless, however perfect, the grand desideratum be forgotten—an effective approach and exit, together with openings calculated to afford a happy exposition of the buildings.

It would appear that hitherto little attention was paid to anything beyond the erection and completion of a grand structure: whatever its dimensions, the old curvilinear and narrow streets were allowed to remain, and in after ages, the mean domiciles and paltry business stores, along the lines, having acquired an enormously increased value, were replaced by solid, expensive, and even magnificent houses of trade. So far the old stunted causeways are irremediable, therefore it behoves us to guard against the like error in the new and magnificent quarters which the current half century is to inaugurate.

Amongst the plans put forward in competition, not a few have struck out general features of open approach and exposition; but very few have regarded the importance of preserving a clear opening from St. James's-park to the river, and fewer still the necessity of keeping a clear causeway and open view, northward, from the Palace of St. Stephen's to Northumberland-gardens, along the river bank.

By an unhappy accident, the palace has been

obtruded 50 feet upon the bed of the Thames: the mistake is deplorable; but as it cannot be remedied, and as, despite the cavils, that performance stands a monument of as yet unrivalled excellence; the only alternative left us (and that amounting to a duty where so much skill, labour, and expense have been lavished), is to remove every obstacle to the contemplation of its varied beauties, and fair proportions,—to open out the aspect on every side; and to adapt every vicinal structure in perfect consonance and keeping with the lustrous creations we already possess.

It is unaccountable, when we consider the facilities this happily and beautifully placed City affords for terminal effect in most of the grand causeways, how little attention has been paid to these points which are so material to the scenic exhibition of architecture, as well as to the health of the metropolis. All the streets, narrow though they be, terminating in Hyde or Regent's parks, derive a beauty, a healthfulness, and in consequence, an increased value from the aperture which reveals, in ever so sparing a measure, a green tree, an open glade, or a hill: how much is such a termination enhanced by internal squares on the line of street? But an opening, direct from the park to the river, adorned by *chef d'œuvres* of artistic taste, and conducting (as it must be) indirectly to the majestic flood, how noble would the aspect be!

Would that we could, by a slight incision upon Government estate in Spring-gardens, clear out another aperture (across the *milky way*) to the statue in Charing-cross,—that, as a spell of enchantment, would brilliantly illustrate our only grand central piazza.

Few, indeed, are the routes that run straight for any extent: there are none in the old City: Edgware-road is, perhaps, the largest in town, extending over two miles to Kilburn; then Oxford-street, less direct, but taking a range of four miles from Bayswater to Holborn-hill: these are actualities; incessant are the tide of population and the roll of vehicles. The Strand, for three-quarters of a mile, is a right line, and a right-royal conduit; but its continuation by Fleet-street (from St. Clement Danes to St. Paul's) is an arc of which the string would bisect the Temple-courts, passing behind the churches of St. Bride and the Knights Templars.





THE SINCLAIR SEAMENS' CHURCH, BELFAST.—MESSRS. LANYON AND LYNN, ARCHITECTS.

There is another continuous straight route leading northward, from Holborn to Hampstead-road, by Southampton-street, Woburn-place, and Seymour-street, which, by the sacrifice of some comparatively valueless property, might pass along the west side of Lincoln's-inn-fields, and strike direct upon St. Clement Dances, thus exhibiting in its course of three miles more important squares, churches, and public edifices, than any other line of the like length.

An access such as this from the Temple, the ancient pericardium of the City, would enhance the value of the fine district of its traverse, and awaken citizens to the fact, so little considered, that Hampstead and Highgate, the most elevated and beautiful of the suburbs, are also the nearest. The sinuosities of Wych-street,—the cross purposes of Clare-market,—and the insignificant straits of Turnstile and King-street, perplex and mystify the vacant rambler, who, if proposing a migration northward, would rather diverge the largo of New Oxford-street, nearly a mile

westward, in order then to pursue the certainly less agreeable line of Tottenham-court-road.

We will leave St. Martin's-le-Grand and Goswell-street, the Commercial-road and Mile-end, together with Bishopsgate-street, Shoreditch, and their continuations, as we found them, in the possession of commercialists and wise men of the east; these are all, in their way, respectable and commodious causeways, however winding; but to suppose that arteries so insufficient for the life's blood of commerce are to continue to be the main ducts of traffic, would be to determine that the command "to increase and multiply" should be suspended as to London; meanwhile, that the subjects of this realm are replenishing and subduing the remotest ends of earth.

The reformation and regeneration of structural London is now about to commence at the west: so far as the embankment of the river from Chelsea is concerned, it has been begun; but after all, the lines which are to form the principal easements of trade,

are yet to be formed along the proposed quay walls of the Thames. A new Strand reclaimed from the water, extending from Westminster to Blackfriars, and, if possible, to Paul's Wharf, is what is required for the storage and depletion of London. The project is proven to be practicable, and its utility admitted on all hands, as corrective of the tidal impurities; whilst, at the same time, floating docks and a great extent of valuable building land would be gained.

The long delay of amendments in old standard thoroughfares, such as the removal of Middle-row, of Temple-bar, of the stack opposite Meux's brewery, in Tottenham-court-road, &c. &c. occasions not only the decline of the streets immediately concerned, but transfers to other reforming quarters that prosperity and respectability which might be attracted to the old accustomed routes; as, for instance, in case of the opening and extension of King-street, Holborn, to Woburn-place, in the same width, what a location for first-rate shops would that short range offer! The



tide of population would straight set in that way: the one example may be applied to the numerous straits and obstructions of the trading metropolis.

Any well-built, but isolated quarter, exposed to the objection of a bad approach, is in like manner restricted and kept down in value. The same may be said of the low ranges of river-side stores and wharfs; these are at present accessible only by long circuits; or if by straight lines, then by steep ascivities, at a gradient of 1 in 13! A palace or castle, with one sole conduit, and that by a drawbridge, as used in feudal times, would be now valueless, except as a curiosity: every abode, or village, or town, is estimated just in the ratio of its accessibility; but in cities more especially, open, level, and direct streets are indispensable for ease of traction, freedom of intercommunication, clear ventilation, and for the obvious distinction of the several stores, shops, and houses. So, until the most valuable sites of all commercial London, the river banks (on both sides), be opened out, these vital organs of the great system must continue in their present stagnant and diseased condition.

#### NECESSITY FOR LARGE ROOMS.

THE NEW READING-ROOM, BRITISH MUSEUM.

TIME was when men eminent in literature would have thought it derogatory to their dignity to have allowed their works to appear before the public in any other shape than large and costly tomes, which completely put them out of the reach of the multitude; and one of the most remarkable signs of the present wonderful days is the comparatively cheap production of high-class works. In addition to this means of instructing the people, it is well worth while to notice the various attempts which are being made in London and other large towns by men of eminence to convey, by means of lectures and illustrations, information to large masses.

To meet the demand which is evidently growing, buildings have been put up capable of holding large numbers. Thirty or forty years ago, a room which would contain an audience of 1,000 was looked upon with curiosity. Since, Exeter Hall, the Surrey Music Hall, and other places in the metropolis, have been erected on a much larger scale; and in the provinces, the Free Trade Hall at Manchester, the halls at Birmingham, Newcastle-upon-Tyne, and other places, are remarkable, when contrasted with those formerly used for a similar purpose. The lecture-room at the Polytechnic Institution has been enlarged from time to time, and at present from 3,000 to 4,000 persons can both hear the lectures and clearly see the explanatory illustrations; and we hope the day is not far distant when men like Faraday, Owen, and others famous in art, literature, and science will have the means of addressing themselves to classes of many thousands at once. In the Surrey Music Hall from 8,000 to 10,000 persons flock week after week to hear the popular preacher of the day, and what is more, do so with him.

One of the chief difficulties in bringing about such a desirable result seems to be the difficulty in modern buildings of getting the voice of a speaker to reach a sufficient number, and there are instances in halls of even moderate size where an orator is not so well heard by a considerable portion of the audience as he would be from a platform in the open air.

Some years since it was found necessary to pull down the old church of All Saints at Newcastle-upon-Tyne, and rebuild another on its site. The choir, which, with the exception of a sort of small vestibule at the entrance, was a perfect circle, was lighted by various round-headed windows, and fitted with galleries and pews of polished mahogany: the roof was nearly flat. On the church being completed, and the pulpit placed in its intended position, it was found that those in the centre of the church could scarcely hear a word of the service: the sound seemed to travel round and round the circular walls, and then mingle into an indistinct hum. Mr. T. Sopwith at the time published a little book, giving particulars of the failure, and the means which were used to remedy the evil.

The acoustic qualities of most of the large ancient churches in this country contrast curiously with such a failure as that above mentioned.

In St. Alban's Abbey sounds are conveyed clearly and distinctly to a marvellous distance. In Durham Cathedral we have often in remote nooks and galleries heard distinctly the reading of the lessons. Westminster Abbey and other places might also be mentioned.

In St. Paul's Cathedral a single voice is not audible at a great distance. In most of the London churches which have been erected since the date of the Fire of 1666, the sounding-boards and other inventions fixed upon the pulpits show the difficulty which was felt by the architects in the proper distribution of sound, and it seems that, even at the

present day, the acoustic qualities of lecture-halls, and other meeting places, are, in a great measure, the result of chance.

In looking at the vast space of the new reading-room at the British Museum, the notion arises that a magnificent hall for the purpose of illustrated lectures might be erected on this plan, capable of holding an immense concourse of people, who would see better than those in the back-ground of a building of an oblong form; and it might be useful to make some acoustic experiments, in order to show if, for the purposes of lectures and music, similar buildings could be made available. Should such experiments be made, and found to be successful, it might lead to our having in the metropolis a structure devoted to the most useful purposes, wherein thousands at the same time might find, cheaply, instruction and delight.

#### CORRESPONDENCE ON THE GOVERNMENT OFFICES DESIGNS.

SIR,—I could scarcely believe my eyes when I read the following in your paper for last week, as part of the judges' report:—

"With regard to the design for the Foreign and War Departments, a difficulty presented itself, in consequence of several of the competitors having sent in one building more or less adapted for subdivision for both the public offices, for which distinct prizes have to be awarded, whilst others have either confined their efforts to one of the buildings, or have given separate designs for each. It will be evident that these united designs compete under considerable disadvantage with the single designs, and that unless a united design should be superior, in both departments, to all its single competitors, it could not receive a prize, because one portion of it could hardly be executed without the other." (!!!)

Well informed as the *Builder* usually is, I really trust that for once you have been misled. Surely it is impossible that the judges could come to such a decision as that stated above, and for such a reason. If they have acted upon such a principle, those who have done the least work have had the best chance, while those who have gone most comprehensively into the subject, and bestowed the most labour, thought, and money upon it, have been treated in the most enervating manner. But I cannot believe that the judges have so acted in defiance of the "conditions," in which not a word is said requiring the designs to be distinct. As to the asserted dilemma which I have italicised above, "that one portion of it could hardly be executed without the other," surely this is no award of the judges. The duty of the judges was to award the prizes to the best designs, irrespective of the consequences. If they have been frightened by this dilemma, what do they say to the far greater dilemmas arising from the facts that the prize block plans will not harmonize with the prize designs for the Foreign and War Offices, nor the latter with each other? A correspondent informs you that "the judges decided to give no competitor more than one premium." Here, again, I hope you are mistaken.

I maintain that if one competitor produced the best designs for the Foreign and War Offices, he would be entitled to two prizes; and if the best for the block plan as well, to three prizes; and I challenge the judges to point out anything in the "conditions" to the contrary. If your statements as quoted above be true, pray insert this from

A DISGUSTED COMPETITOR.

#### SEWERAGE AND DRAINAGE NOMENCLATURE FOR TOWN PURPOSES.

THE rapid extension of town sewers, as also of house and yard drains, involves frequent use of the words *sewer*, *drain*, *sewerage*, &c. There is often confusion, and consequent incoherency, in the use of these words, and no dictionary contains full and clear definitions. The word *sewerage* is not given in some of our standard dictionaries. It is frequently confounded with *sewerage*, and there is no authority to set an inquirer right. We propose to attempt a few definitions.

**SEWER**, *s. singular*. A covered or open conduit for the removal or passage of water or liquid refuse, from a city, town, village, or hospital, or from dwelling houses or other buildings. There are main sewers, secondary sewers, and branch sewers. Sewers may be of any sectional form, and may be constructed of any suitable material. It is the use, and not the dimensions, form, or material, which constitutes a sewer. A sewer may be open, like a conduit or canal; or elevated like an aqueduct; or beneath an embankment, like a culvert; or underground, like an adit or a tunnel. That which is public,—in a street, lane, yard, or court, or along any highway, or an outlet from any of the above, will be a sewer. Circular or egg-shaped, on cross section, is the best form for sewers.

**SEWERAGE**, *s.* The aggregate of sewers, if used as descriptive of the sewers of a city, town, or district. "The sewerage has been completed," that is, a system of sewers has been completed, a number of sewers has been completed, which form a system. "The sewerage and drainage of Alnwick have been completed."

**SEWAGE**, *s.* The refuse flowing through drains and sewers. *Sewage* must not be confounded with *sewerage*. They are not synonymous, nor ever can be. A tank may contain *sewage*, but not *sewerage*. This mistake is frequently made.

**DRAIN**, *s.* A conduit from a house or public building, tributary to a sewer. A drain is a duct, pipe, or passage of stone, brick, earthenware, iron, or other material, of any dimensions or sectional form, by means of which foul waters, refuse, and indeed any fluids or semi-fluids, are drained from buildings, houses, yards, or land, into a sewer. Drains may be in all respects like sewers. A sewer is in a public road, or other place, for a public purpose: a drain commences on private property, and is a tributary to a sewer.

**DRAINAGE**, *s.* A system of drains. "The drainage of a city has been completed,"—that is, the houses in such city have been drained. "The town of Alnwick is sewered and drained." The town is *sewered*, the houses are *drained*, and therefore the sewerage and drainage are complete. "The *sewage* is either passed (waste) into the river Aln, or applied to the land for agricultural use."

**Remarks**.—Sewer, seugh, sew, shoer, soocer, sough, snuff, &c., are merely variations of one word. In the metropolis there were "Commissioners of Sewers," in Manchester there is a "Paving and Soughing Committee." Town sewers are meant in both cases.

ROBERT RAWLINSON.

#### PROVINCIAL AND CHURCH-BUILDING NEWS.

**Yarmouth**.—The first stone of the new church of St. John the Evangelist, now being erected on the Dunes, at Yarmouth, for the use of beachmen and sailors, was laid on the 7th instant. The site is on the open part of the Dunes at the junction of York and St. George's roads. The church will be a small plain edifice of flint-work, with Bath stone quoins and dressings, in the Early English style of architecture. It will consist of a nave, chancel, and apse; with a steeple and turret on the south, and a porch on the north side. The nave will be 55 feet long by 26 feet wide, and the entire length of the church, including the nave, chancel, and apse, will be 87 feet. The height of the building, from the floor-line of the nave to the ridge of the roof, will be 38 feet. The roof will be of open timber staired, but that of the chancel will be boarded internally. The interior of the church will be faced with white bricks: the chancel arch will be of moulded bricks, and the jambs cased with stamped bricks of ornamental pattern. The sittings will consist of open benches of deal staired, and accommodation will be provided for about 300 persons. Mr. J. H. Hukewell, of London, is the architect: Mr. R. Steward, of Yarmouth, is the contractor. The contract is for £1,246.

**Platcham**.—At a meeting of the committee for receiving tenders from the selected parties for restoring and modernizing this church, the tender of Mr. Job Hanson, builder, Speenhamland, for £1,690, being the lowest, was accepted: between this and the amount of the highest tender the sum exceeded £400; but there was only 38l. difference in that of Mr. Hanson and Mr. Thomas, builder, Abingdon.

**Cores End**.—Tenders have been given in for repairs of Cores End Chapel and the erection of schools; Messrs. Poulton and Woodman, of Reading, architects; ranging, from Williams, 560l. to Holland and Stevens (Wycombe), 372l.; the latter accepted. The old materials were allowed for.

**Drayton**. The lately renovated church in this parish has been reopened for Divine service. The expenses connected with the renovations amounted to about 600l. of which 100l. is still owing. Mr. Davis, of Luggport, was the architect employed.

**Hereford**.—The Benedictine order of Roman Catholics are about to erect a monastery at Belmont, near Hereford, on a scale unknown in England since the Reformation. Mr. Pugin has advertised for tenders for the work. A Roman Catholic church has also been built at Belmont, at the sole expense of Mr. F. R. Wegg Prosser, formerly a member for Herefordshire, and who a few years since seeded from the Church of England.

**Walsall**.—The portion of the Walsall Cemetery appropriated to members of the Established Church was consecrated by the Bishop of Lichfield on the 6th instant. The new cemetery is situated upon a gentle slope on the south side of the town, between the South Staffordshire Railway and the canal. It is approached by a newly-constructed road, 48 feet in



width, leading out of Bridgeman-street, and comprises over 13 acres, divided as follows, namely, eight to the Church, 270 to the Roman Catholics, and the remainder to the Protestant Dissenters. It is surrounded by a brick wall, with piers every 15 feet, built by Mr. Rowley, of Walsall, at a cost of 800*l*. The laying out, forming, and planting of the ground, have been effected by Messrs. Cole and Sharp, Messrs. J. Perry Barr, under the superintendence of Mr. Clark, the borough surveyor. The lodge and entrance gates are not yet completed. They will cost about 400*l*. The chapels, which were designed by Mr. Clark, measure 37 feet by 17 feet, clear of the walls. Between them rises a tower and spire, 80 feet high including the vane; and between the tower and chapels, on each side, are robing-rooms and toilet and bier houses. The Episcopal chapel is seated for between fifty and sixty persons, the seats being of deal, stained and varnished. The roof is open, and the timber stained and varnished. The end windows are tracery. The side windows are single lancet, similar to the end one, and bordered with stained glass. With the exception of the end window, the Dissenters' chapel is the same as the other in its internal arrangements: as to external design, its principal window is a triple lancet. The chapels and spire are of brick, with Bath stone dressings; and the roofs are covered with ornamental tiles. The chapels were erected by Messrs. Taylor, Brothers, of Walsall, under Mr. Clark's superintendence, and cost about 1,300*l*. The contractors were Messrs. Taylor, Brothers, and Messrs. Cole and Sharp.

**Frederick.**—The foundation-stone of a B-pitch chapel was laid in Fishergate, Preston, on the 2nd instant. Messrs. Hildbert and Rainford are the architects. The chapel will be entered from Fishergate by a flight of stone steps, with pulpitading in front. The ground-floor will seat 400 persons. At present it is proposed to have a gallery for the choir only, but the chapel is so planned as to admit of being galleried round at any time. In the rear of the chapel will be vestries and a staircase to the organ gallery. The seats will be open, and the roof will have open framing, consisting of rafters with curved ribs and spandrels, filled in with decorated iron castings. Beneath the chapel will be boys' and girls' schools, with separate entrances from Chainey-street, and divided from each other by a moveable screen. These schools are to be 12 feet high, and to have all the requisite conveniences attached. The interior dimensions of the chapel will be 40 feet by 72 feet. The style of architecture is mixed, but with Romanesque and Italian features. There will be a square tower at the corner of Fishergate and Chainey-street, 110 feet in height to the top of the tiled roof which will cover it. The contracts for the masons', joiners', carpenters', plasterers', and ironfounders' work have been taken by Messrs. Cooper and Tullis, and Mr. Richard Angleton. The total cost of the chapel, when completed, will be upwards of 2,500*l*.

#### FOREIGN INTELLIGENCE.

**Novel Uses of Electric Telegraphs.**—Our German contemporaries do not think that the use of telegraphs for political purposes is their final destination. As the *lows of storms* have been now so thoroughly investigated, and the rain-clouds travel very slowly, the collecting and publishing of meteorological intelligence may become of great importance to the agriculturist; and means have been taken in Germany to effect that object during the sowing and harvest seasons.

**Architecture and Poetry.**—The Schiller committee of Marbach have purchased the house (now a bake-house) where Schiller was born, and it will be inaugurated on the poet's hundredth birthday.

**Kant's Statue.**—The model of this large statuary work, 10 feet high, made by Professor Rauch, has been cast in bronze by M. Gladenbach, in the foundry of Berlin: for the cast 82 tons of metal were required, which does not include Kant's head, which will be cast in a separate mould. The chasing of the statue will be done by M. Grünberg, and the work be set in six months to Königsberg, the place where it is to be put up.

**A Novel Art-Exhibition.**—The little town of Meiningen will witness an exhibition of a novel and interesting kind, viz. that of historical cartoons of modern masters. It is owing to Prince George Saxe-Meiningen, that such high art-works have been collected and made available to the public sight. Of *Cornelius* there is a large specimen, "The Four Horsemen of the Apocalypse," from the Campo Santo of Berlin; "The Creation" and "The Crucifixion" from the Ludwigskirche, in Munich. Of *Kaulbach*, the following cartoons have been procured for the exhibition:—"The Flowering Period of Greece," and "The Reconciliation between Charlemagne and Wittekind," a part of a frieze from Berlin; and the colossal figures of Moses, Salom, Egypt, and Hellas. Of *Schnorr* of Carlsfeld, some minor cartoons, and the large one

of the Nibelungen. Of Professor *Schwind*, all the cartoons for the historical frescoes in the Landgrave's Hall of the Wartburg, &c. The financial difficulty of this exhibition may be gathered from the fact, that for the cartoons from Berlin alone a guarantee of 21,000 thalers was required to be given.

#### BERN: FIRST INDUSTRIAL EXHIBITION OF SWITZERLAND.

Amongst the real conquests of our times, the national exhibitions rank surely first, and that of Switzerland has attracted great notice. The building stands near the Aathor, close to the hill whence the astronomical observatory is looking down on the beholder. It consists of a main mural building and an annex of wood. Besides the ground floor, two stories have been erected, which form halls supported by two rows of columns. The portal is of a grand proportion, the windows high, and the pediment adorned with reliefs. The most interesting items of this Alpine exhibition are those nearest to sturdy, ruddy Nature; the produce of the iron manufactories; building stones, exhibiting some huge specimens of marble and slate slabs; blocks of cement, fossil fuel, peat, and a group of huge oak casks; nicely ornamented iron garden furniture; various products of asphaltum, and other chemical produce, are also to be met with. Very interesting is the collection of Swiss watch and clock works, a series of physical, mathematical, and drawing materials: specimens of Swiss printing, lithography, and photography,—to which the homely straw plaitings from the Aargau, and the shining kitchen utensils of copper and *plaque*, form a relieving contrast. The number of exhibitors is 2,050, with 20,000 articles. Authors and publishers are separately taken account of, and 8,000 works of different kinds have been sent in by 100 of the above fraternity.

#### STONE FOR THE HOUSES OF PARLIAMENT AND PROPOSED GOVERNMENT BUILDINGS.

A CORRESPONDENT of the *Times*, writing on the subject of stone for the proposed Government buildings, says,—“I think all will admit that the stone chosen for the New Palace is a great mistake, for long since—in fact, before a portion of that material had been exposed to the atmosphere more than seven years—any practised eye could see what would be the result. In proof of this, I took occasion, in the early part of 1849, to write on the subject to your contemporary *the Builder*, but the editor, either disregarding the observations of so humble an individual as myself, or perhaps not seeing the truth of the remarks, declined publishing my communication; but now it is found necessary to coat the building with a compound to prevent its destruction, and this before the builder has completed his work.”

The truth is, with the greatest consideration for correspondents, if we were to give insertion to every letter sent to us throwing doubts on the goodness of the various stones used in building, we should damage every quarry-owner in England, and yet do little to advance the cause of truth. The evidence on which Anston stone was selected overrode any mere belief expressed in 1849; and though it is unfortunately the case that the stone used in particular situations at the Houses of Parliament is decaying very fast, it can scarcely be doubted that much of the Anston stone is a very excellent material. There is a bad bed as well as a good bed, and the stone needs selection. We have several letters before us recommending various stones, especially Portland, and we give insertion to one of them. It must be remembered, however, that of this also we have some bad specimens in the metropolis, and it is difficult to know what will stand and what will not. The fact is, no one knows much about stone: we are blundering on in the dark.

In Sir Charles Barry's remarks respecting the stone of the new Palace, at Westminster, I notice one point which, in my humble opinion, is likely to mislead the public, namely, "that upon the whole it (the Anston stone) has turned out to be at least as good as any stone hitherto employed in London." Now, if Sir Charles Barry will walk down Fleet-street, and carefully examine the Ketton stone, which is used in St. Dunstan's Church, he will be inclined, I should imagine, to alter his opinion. If not, let him proceed on to St. Paul's, and examine the Portland stone of which that masterpiece of architecture is built: he will there find that, after a lapse of 147 years, "in particular situations and under peculiar conditions," instead of yielding to the deleterious effects of the London atmosphere, it has become, in fact, case-hardened, thereby showing that the atmosphere, instead of decomposing the Portland stone, renders it considerably harder and more durable: in some of the most exposed parts, the tooled marks are as visible as on the day they left the mason's banker.

The carving also, which has been finished so many years, is now as sharp as the last flint at the New Palace. Nor do I think it as all probable that Sir Christopher Wren would have bestowed his time and talents on a material that he was not sure from experience would stand the test of the London atmosphere, and remain perfect in its most minute details for an indefinite period, without being obliged (as Sir Charles Charles Barry informs us, he intends to do so), to have recourse to various *economical* means to arrest further decomposition of a work on which so many thousands of the public money have been spent.

A MASTER MASON.

#### SMEATONIAN SOCIETY OF CIVIL ENGINEERS.

This society, founded in 1771 by Mr. Smeaton for the purpose of encouraging civil engineers, and introducing, through social meetings, a friendly intercourse among the profession and men of science, had an entertainment on Saturday last at Greenwich.

The party during the afternoon visited, under special arrangements, the *Great Eastern* ship, the Atlantic cable on board H.M.S. *Agamemnon*, and the Nautilus diving-bell at the Victoria docks. The inspection, and explanations given at the several works, were of the highest interest; and much pleasure and information were derived from the visit.

At the dinner the chair was taken by Mr. Hawkshaw, the president for the year: about forty gentlemen were present: among them, Mr. Stephenson, M.P., Mr. Locke, M.P., Sir J. Rennie, Sir J. Macneil, Mr. Mylne, the treasurer, and Messrs. Walker, Laidley, J. Simpson, &c. &c., while some few members were unavoidably absent in consequence of their professional engagements in the country.

Among the visitors were Col. Dawson, R.E., Capt. Claxton, Capt. Moorsom, Capt. Galtton, R.E., &c.: the usual loyal and ancient toasts of the society were given, and much intercourse and friendly discussion on the engineering and scientific topics of the day took place, and the festive proceedings terminated at a late hour.

#### A FEW SCRAPS FROM IRELAND.

THE Dundalk corn exchange and markets competition has been decided, apparently as much to the dissatisfaction of the competing architects (except the successful parties) as in the case of the Londonderry bridge, which has been the subject of comment in recent numbers of our Journal. Shortly after the decision, which was protracted somewhat beyond the usual time in these matters, the committee sent a printed circular to the unsuccessful competitors, being a portion of the directors' report to shareholders, stating that after "much trouble and anxiety" they awarded the first premium (30*l*.) to Mr. Murray (a local builder), and the second to Mr. Neville (the county surveyor). Since then advertisements have been issued calling for tenders.

Drawings in competition were also sought for the erection of a new mechanics' institute at Lurgan, where Union-street intersects with Market-street, and the ultimate decision was in favour of those furnished by Mr. Raffles Brown, which, it is said, cannot be executed for the stipulated sum, 1,200*l*.

The site of St. Killian's new church, Clondalkin, Dublin, is near the recently-erected conventual buildings and children's schools, which are both of Gothic character, and with them the new church will form a large quadrangle. The dimensions are (to extreme end of chancel) 123 feet by 53 feet, including a nave of 27 feet width. Interior height, from floor to ridge piece, 52 feet. Style Gothic. Mr. Calubeck, architect.

The Nass gaol competition, as also that of Kilmaham gaol, Dublin, was decided in favour of Mr. John McCurdy, architect. In the former case it is proposed to build a new wing to accommodate 100 male prisoners on its three floors, with all the requirements for carrying out effectively the separate system. This wing is to communicate with a central hall of semi-circular form, on the site of the present chapel, from which the existing buildings radiate. A new chapel will be provided on second story. The minor buildings will comprise cooking kitchens, wash-houses, drying-rooms, &c. &c. Probable expenditure about 9,000*l*. In the latter case, Mr. Curran received a second premium, and Mr. Gray a third. An extension and modification of the present buildings is adopted, and 100 additional male prisoners accommodated. A spacious hall, with iron galleries and roof of iron and glass, will connect the two large existing wings, and this is intended as a day-room for the prisoners during inclement weather. Alterations are also made in the female department, and the separate system is to be carried out.

A new Roman Catholic church is to be built at Kiltbaha, county Clare.

The Royal Dublin Society have received plans in



competition for re-arranging, with sheds, offices, &c. and roofing, the present cattle-yard in which periodical agricultural exhibitions are held. We hear that the idea of using the new structure for the triennial exhibitions of arts and manufactures is being entertained.

A new town-hall is to be built at Naas, according to Mr. McCurdy's designs, which provide market and weigh houses, commissioners' and clerks' offices, with an assembly-room to hold 400 persons. The style is Gothic of thirteenth century; the material, green stone, with granite dressings. The principal front displays a Gothic arcade on ground-floor, cusped windows on first-floor, and surmounted in the centre by a gable with clock.

The Moore testimonial (pedestal) competition has been decided in favour of Mr. Mulvany's plans, which, we are informed, anticipate the future site for the statue of "Ireland's bard" to be at the intersection of College-street with Westmoreland-street, and opposite the western portico of the Bank of Ireland. In case the corporation acquiesce in the wishes of the committee, the testimonial will be in a very central and conspicuous situation, and no doubt will be an attractive feature in the city.

#### KENSINGTON.

The first annual report of Mr. Godrich, the medical officer of health for the parish of Kensington, has just been published. From this report it appears that in the two sub-districts—Kensington-town and Brompton—into which the parish has been divided by the registrar-general, with an area of 1,244 and 698 statute acres respectively, there was a population, in 1851, of 29,183 and 14,870, which gives about 28.5 persons to each acre in the town division, and 21.3 in the Brompton. In Kensington, there were of females, 17,275; males, 11,908; excess of females, 5,867; in Brompton, of females, 8,849; males, 6,021; excess of females, 2,825. All London contains 30 persons to the acre.—St. George's, Hanover-square, 60; St. George the Martyr, 184. The number of inhabited houses in the parish, in 1851, was 6,136: this will give, upon an average, seven inhabitants for each house. The rateable value of property is nearly 226,000*l.* and the average annual value of each house is about 45*l.* The entire parish is said to be about eight miles in circumference, to contain sixty miles of road, and 180 miles of paths. From tables prepared by Mr. D. O. Edwards, of West Brompton, containing the results of 100,000 observations extending over a space of twenty years, it appears that the mean annual temperature of the parish is 49.68 deg.; while the mean extreme range out of doors reaches to 61 deg. The mean extreme range for each month varies from 30 deg. in January, to 37 deg. in June. In doors, the mean annual extreme range is reduced from 61 deg. to 36 deg. and the extreme monthly range varies from 16 deg. to 19 deg.

The estimated population of the parish for the present year is about 54,000. The total number of deaths registered during the present year has been 1,199. If from this we subtract the large number of 190 occurring in the hospitals, but non-parishioners, the mortality of the whole parish will be at the rate of 18.6 per 1,000. In Chelsea, it is 26 per 1,000; in St. Margaret's, Westminster, and St. James's, 27 per 1,000. There are only three parishes in London in which the rate is more favourable than at Kensington, namely, Lewisham, 17 per 1,000; and St. George's, Hanover-square, and Hampstead, 18 per 1,000; while Whitechapel and St. George's-in-the-East average 29 per 1,000; St. Saviour's, Southwark, 33 per 1,000; and Liverpool, 36 per 1,000. The average of London, generally, is 26 per 1,000. There is, however, room in the parish for much improvement. The visitation of cholera in 1854 cost the parish about 2,000*l.* for extra medical relief and other necessities, besides charges for behoof of widows and children on the parish rates.

#### PROPOSED OCCUPATION OF ISLINGTON-GREEN.

As you are, of course, aware, the parish of Islington contains nearly 120,000 inhabitants, and it contains only, for such a large parish, but one small open space, common to all, situated about the centre of the parish, called Islington-green. This is a triangular piece of ground already disfigured and encroached upon by a police-station.

The parochial authorities and inhabitants of Islington have lately been exerting themselves to obtain a park, feeling the want of an open space for walking and recreation; and yet, will it be believed, in contradiction to this, these authorities contemplate—even have, I believe, decided on—further disfiguring this little space by erecting a vestry-hall on it.

One of the vestrymen mentioned to me that they should only want a small space of the green—about one quarter; but if you take away one quarter from

that which is already small, how very little and contemptible will it make the remaining three quarters, letting alone the disfigurement that will be occasioned by contracting so small a space. Surely there must be some spot to obtain in Islington much more appropriate for a vestry-hall than the place proposed, which would destroy an open space so necessary to be retained amidst so vast a population.

There is already a piece of ground by the turnpike, covered by some dilapidated buildings, the remains of a fire, which have never been restored: this spot, I apprehend, might be reasonably obtained, or if not, some other site equally convenient.

CHAS. JAS. FACHE.

#### THE WELLINGTON MONUMENT COMPETITION.

THERE are nearly a hundred designs in Westminster-hall. Half the number contributed from England, Ireland, and Scotland;—Italy, Germany, Spain, and America furnish nearly fifty.

The designs by British subjects have black numbers, those by foreign artists red; so that they are easily distinguished. Many of those with red numbers are unquestionably very fine in modelling, but the general characteristic is either violent action, or built tombs, or temples; one building within another is certainly an error.

It is a great pleasure to find our own artists have come out so well, even though some of our best men have refrained from sending, through reports of a pre-arrangement with regard to the commission which have been circulated. Of course, amongst so many, and any one sending who pleased, there are some most extraordinary notions, English as well as foreign; reminding one of clock-cases, confectioners' temples, racing plates, &c. Many—and very many—look as if they could not be increased in size without losing whatever merit they now possess. This is an element that should be well considered.

Without at present going into relative or particular merit of works, and some are fine and appropriate, it may be worth while to notice, that the general impression amongst artists and the public, is, that no one work will be selected; that the premiums will be awarded, and the Government entrust the commission to whom they please. Before doing which—if such has ever been the intention—it would be wise to select four if not five of the best in the present competition, to pay them for their models, and direct them to produce works twice the size of those now submitted. We should then, without the slightest doubt, have a monument worthy of the Duke—and one that would show that *British art* is even equal to British heroism.

The following notice has been given:—

"The models will be exhibited to the public on Monday, the 20th, Tuesday, the 21st, and Saturday, the 25th of July, from 9 a.m. till 7 p.m."

On Wednesday and Thursday, the 22nd and 23rd, Westminster-hall will be open to Peers and members of the House of Commons, from 10 a.m. till 7 p.m.

After Saturday, the 25th, the Exhibition will be open every Monday, Tuesday, Friday, and Saturday, from 9 till 7, until further notice."

#### NOTES UPON IRON.

(By our Special Correspondent in Staffordshire.)

THE iron trade of Staffordshire is quiet, but healthy. The quarterly meetings, which terminated at Dudley on Saturday last, passed off without any excitement; and since that time there has been no marked demand, from either the American, continental, or the home markets.

The weekly meeting of the trade at Wolverhampton, on Wednesday last, was not numerously attended;

and the proceedings were no exception to the general rule, the week after the quarterly gatherings, no large transactions having taken place. Pigs are a shade easier than they were a fortnight ago; and if the weather continues at the present high temperature, must, at most houses, be half-a-crown cheaper in another fortnight than they are now. Indeed, we shall not be surprised if they are obtained at that reduction next week; for there seems to us to be a studied holding back of orders for pigs on the part of the makers of malleable iron. This, added to the prevailing weather checking the makers of malleable iron, whilst it permits the blast furnace to continue its operations, must inevitably throw a larger quantity of pigs into the market, to the benefit of the makers of malleable iron.

The prices recommended to the houses technically termed "the trade," are reported to be adhered to by the leading members of that coalition. They are, bars, 9*l.*; hoops, 10*l.*; sheets and plates, 10*l.* 10*s.*, at the works. How long, however, this will be the case depends upon the extent of the demand, and the resulting competition. It is a dogma fast exploding,

that good iron can only be obtained at "trade" houses and "trade" rates. Very good bars may be obtained at the prices at which they have been for some time selling, namely, 8*l.*; good bars, 7*l.* 16*s.*; and by some makers bars are sold at 7*l.* 10*s.* Plates and sheets are sold as low as 9*l.*, and good plates and sheets at 9*l.* 10*s.*—all at the works.

Pigs of a serviceable character range from 3*l.* 17*s.* 6*d.* to 4*l.* 5*s.* Good mine warm-air pigs are quoted at 4*l.* 2*s.* 6*d.*, but 4*l.* 1*s.* 3*d.* in most instances; and 4*l.* in others would not be refused. No large transactions are reported at 4*l.* 5*s.*; and pigs at 3*l.* 17*s.* 6*d.* are serviceable as a mixture; for it is a fact that a good tough bar cannot be made of the best class of pigs.

#### PROPOSED MEMORIAL OF THE '51 EXHIBITION.

WE would draw attention to the invitation in our advertising columns, addressed by the committee for erecting a memorial of the Great Exhibition, as well to architects as to sculptors. Much is advisedly left to the discretion of the competitors. The sum in the hands of the committee is about 6,000*l.* and we sincerely hope, looking to the greatness of the object and the desire of the committee, if a good design be submitted, and no difficulty arise to allow the author of it to carry it into execution, that artists of ability will compete. The Rev. Dr. Booth and Mr. Godwin act as honorary secretaries.

#### LONDONDERRY BRIDGE.—COMPETITION DESIGNS.

I HAVE looked anxiously in the columns of your Journal for an authoritative contradiction of the charges involved in the questions of your correspondent "C.E." and which, "Another C.E." has not hesitated—with some slight modifications—to answer in the affirmative. I regret, for the honour of my profession, to say that I have looked in vain: for it is impossible to attach any value to statements which you mention having received, but which are marked "not for publication." But, I venture to think, sir, that this matter can scarcely be allowed to remain as it now is. The Londonderry Bridge Commissioners must have some responsibility towards the public, and while the charges that have been made by your correspondents remain unanswered, the Bridge Commissioners not only appear identified with a course of proceeding which I should hope is unprecedented in the history of competitions; but, after having spent a large sum of the public money, they adopt a design for their bridge which was publicly condemned by a gentleman who is, admittedly, the very highest authority on the subject. Mr. Barlow, indeed, challenges discussion on his design at the coming meeting of the British Association; but the tribunal that he has chosen is not one that, on such a subject as this, will command respect. The amateurs and pleasure-hunters who will assemble in Dublin a few weeks hence, will find little interest in a discussion, on the advantages of a combination of girders and suspension chains. I would suggest to Mr. Barlow, that the Institution of Civil Engineers is the proper tribunal before which to debate this subject: a good deal of attention has now been drawn to it, and I think I can promise Mr. Barlow, that if he will bring the matter forward in the next session of the Institution, he will have the opportunity of hearing the opinion of more than one eminent member of our profession upon it. M. I. C. E.

#### THE RECENT DECISION UNDER THE METROPOLITAN BUILDING ACT,

ON THE PROJECTION AT 74, GREAT TITCHFIELD-STREET.

HAD only your report appeared, I should not have considered it necessary to have addressed you, notwithstanding some errors; but "Investigator's" letter, appended to that report, in your last number, betrays so much ignorance of the case, and it may possibly be shared by the profession, that I feel called on to offer some explanations, as well as to state that Mr. Beadon most emphatically expressed his opinion on most of the questions raised, and decided that he "could not be called on to make the order demanded."

The requisitions were, to take down the slate enclosures and to build 9-inch walls from the foundations, and to carry up one porch of the party-wall 16 inches above the roof. I did not deny that it was an alteration and addition within the meaning of the 9th section; but I contended that the projection came within the 26th section, and was constructed of the stipulated fire-proof materials, and denied that the "projection" was a "building." The 26th section distinctly marks the difference between the projections allowed on the fronts and rears of houses. The paragraphs of the section are firstly as to projections generally, where the words "architectural projection or decoration" occur, and those projections must be of fire-proof material. The fifth paragraph states that no projection shall extend beyond the general line of front; the words "architectural projection" are here carefully omitted; but "architectural decoration" are with equal care retained. It was under this view of the section that Mr. Beadon decided that there was no case, and he merely gave as an argument that if he could end so his







**COMPOSITION MOULDS.**—Mr. T. Hodgson, Brooklyn (U.S.), has invented a plastic material, capable of making moulds for metal castings, which can be used over and over again. The repeating loam mould is capable of withstanding intense heat, and of concentrating it in a superior manner upon the metal to be smelted.

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Walker, Evesham .....	1,013	0	0
Robinson, Redditch .....	998	0	0
Matthews, King's Norton .....	987	0	0
Mounsford, Birmingham .....	985	12	0
Hunt, Alcester .....	980	0	0
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**WANTED**, by the Advertiser, a SITUATION as FOREMAN over CARPENTERS and JOINERS, or to take charge of a Building. Age 37 Can produce eight years' character from the firm he has just left.—Address G. H. Mr. Richardson, 8, Charlotte-street, Pimlico.

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# The Builder.

VOL. XV.—No. 755.



**LAST** Saturday evening, the 18th, the annual *conversazione* of the Architectural Museum was held in the new building at Brompton. The Right Hon. Earl de Grey, the president, took the chair, and was supported by many distinguished men, and a very crowded general assembly, including a large number of ladies. The fact of its being the first meeting held since the change in locality gave particular interest to the evening, and induces us to give more than usual space to an account of the proceedings.

The noble Earl, on taking the chair, said he had attended some three or four previous *conversazioni*, but the present was the first occasion on which he had been able to "see" all who were present. Those who recollected the former place of meeting would remember the extreme pressure that prevailed on these occasions, the difficulty that there was of either seeing or being seen, or in properly exhibiting the examples of architectural taste which it was the object of the Museum to bring before the public eye. In its present situation, however, he thought they had no reason to find fault on that score. The change of situation from the confined position in which they formerly were was undoubtedly a great step in the advances to be made in the future progress and improvement of the Architectural Museum. He did not mean to say but that there might be difficulties in the selection of any place for such a purpose. The first spot that was selected was the best that could be obtained. In the earlier stage of its existence its position was adequate for its purpose, but it was found, long before they actually did remove, that it would be impossible the collection could progress, or that the Institution could confer that reputation on itself, or that amount of profit on the public which it was intended to confer, by remaining in its confined locality. There were many other circumstances, moreover, that made it of importance to change, if they possibly could, for the better. It had been urged that the former situation was preferable *quasi* situation, and he did not deny that there might be advantages. There might be people living in the neighbourhood of the late locality, who might be more or less inconvenienced by coming further afield, but then it was to be recollected that a great number of people might be on the west side of the metropolis, to whom the new locality would be as convenient as the old locality was to those living on the east. It had been observed, though he thought the observation was without foundation in fact, that, because they had selected a spot more or less connected with Government, and the locality of other public institutions, they were therefore likely to be what they might call absorbed by the public institutions around them. Well, he candidly confessed, although the public institutions around them might be large and very powerful, and though they might have a great swallow, he did not think they would swallow the Museum. He thought the Museum would hold its own, and that it would be a tough morsel to masticate. The great object of the Museum was not merely to collect together isolated models or casts, but to collect them in the mass. Taken in an isolated way, or individually, they were of little value; but taken collectively, in connection with specimens of the same date, and of the same style of architecture, they became for the purpose of study and comparison invaluable. It then became of value, and available by all connected with the noble profession of architect-

ture. Everything, under these circumstances, that favoured the important object of classification and separation, and avoided that of confused intermixture, by appropriating proper things to proper periods, and placing all in chronological order, in connection with all classes and styles of architecture, must be of immense value. He believed that the Institution only required to be known to be appreciated; that numbers would come to it, and that it would recommend itself to the increased support of the members and the public. It did not require a large amount of contribution. A great number of small contributions would go much further than many a swaggering donation, that sounded big, and perhaps only deterred other people from subscribing.

Mr. G. G. Scott then read the following Report:—

MR. LORD, LADIES, AND GENTLEMEN, It has been the practice at our annual *conversazioni*, though I do not know how it originated, nor see the consistency of it, for me, as treasurer for this institution, to read a report of report which has nothing whatever to do with the office I have the honour of holding, but which is simply intended to keep up in the minds of those present the objects for which our museum was formed, and the great service which it exists for the liberal co-operation of the public. I need hardly repeat, on this our sixth anniversary, that our single object is to aid those who are following up the study of architecture and its subsidiary arts, by bringing within their reach specimens worthy of their study, and which they would find it difficult to obtain a sight of, without the aid of such a collection.

Another great object was this, that though our museums contain specimens in great abundance of the styles of art of the ancient world, no collection had been made illustrating the indigenous arts of the nations of modern Europe, as exemplified in the buildings of the Middle Ages.

These two great desiderata we have, by the most strenuous exertions, been the means in some degree of supplying, or we may at the least boast of having done so in a greater degree than had ever been before effected.

In carrying out these great objects, we have had to contend against great difficulties, and, though I would be the last to make any parade of our exertions, I do think that they have been such as to enable us in some degree to the generous consideration of those who feel with us as to the desirableness of the objects we have had in view.

Our difficulty all along has been one of supplies, and, consequently, of space. The undertaking was a very costly one, involving a considerable outlay of capital in the first instance, which the committee obtained by way of loan; and also a very considerable annual expenditure, which the subscriptions were barely sufficient to defray.

In spite of these continual difficulties, we have gone boldly and determinedly on till our collection has become one of national importance, and from a small commencement in the private exertions of a few individuals, has grown to be one of the most important collections of art in this country.

Our exertions commenced in consequence of the failure of various attempts to induce the Government to take up the matter. As we progressed, however, our efforts have been recognised by the Government authorities. The Department of Art became, in the year 1855-6, subscribers of 100*l.* in return for the free admission of their students, and some other privileges. This was, however, withdrawn on their removal to Kensington, and from our making special application for its continuance, originated the proposal for the transference of our museum from Cannon-row to the building in which we are now assembled.

The proposal received on our part very long and most anxious consideration. It would be difficult on the present occasion to go through all the practical arguments for and against this step. The greatest arguments in favour were, that we had outgrown our former premises, and had no means of extending them;—that it was a great object to free our income from the burden of a heavy rent, and to be able to apply it more directly to the objects of the Institution; and that as our primary wish was to form a national collection, it was an important step to connect our museum in some degree with those being formed by the Government. On the other hand we somewhat feared that our apparent connection with a government department might be made an excuse by half-hearted supporters for withdrawing, on the plea of such connection, and we fully appreciated the much more tangible objection of the distance from the centre of London causing inconvenience to students.

The first of these objections we have guarded against, by the most stringent stipulations for the fullest possible amount of independence and self-government, and by the fact that, whereas in our old location we had received Government aid, in our new one we receive none whatever, except the premises granted us, in which we are similarly placed with half a dozen scientific societies, which, though housed by the Government, retain undisturbed independence.

We are, then, reduced to the one objection of *site*, and it would be absurd to deny that it has its weight. We all most heartily wish that the museums in which we are assembled were at Charing-cross; but how is it possible that a building requiring such an enormous amount of space, and the capacity for continual extension, should be placed exactly where we might in the abstract desire to see it? I earnestly wish that a nearer position might be found for all the collections now beneath these roofs. Yet so long as they remain here, I hold that it is advantageous to our students to be near to the other collections of art and to the art library, to which, when they come here, they may have access; and that this advantage does very much to compensate them for the additional trouble of getting here. That the distance is anything but prohibitory, I have only to refer for proof to the returns of the numbers who attend, both on the public and on the students' days. The fact is, that the number who visit our museum is increased since our removal by at least *twenty fold*; and, judging from appearances, I am of opinion that a large proportion are of the classes which it is our object to benefit.

I have gone more at length into this subject because it has been made the ground of repeated, and I cannot but think, considering the exertions and sacrifices we have made, somewhat ungenerous attacks upon us. Whether we

were right or wrong in coming here, we feel that our motives have been good, and that we are undeserving of such attacks. My object, however, is not to defend ourselves, but most earnestly to appeal to our supporters for the continuance of their aid. We are determined to press on the objects of our Institution with the same vigour which has brought it to what it is. If there are any disadvantages in our present position, there are so many reasons for more strenuous exertion. We aim at making our Museum the richest collection of architectural art in existence, especially in our leading department, the architecture of the Middle Ages. If it is too far off, we will make it all the more worth the trouble of getting to it; and all the more worth the exertions of Government to bring to a nearer point.

We therefore urge upon you redoubled exertions. We urge upon you to come forward with donations to relieve the funds of that debt which has all along been the great drag to our progress. We urge upon you to continue and add to your subscriptions, and to let us in right and led for new supporters, that we may be the better able to press on the great work in which we are banded together; and we urge upon you to use your influence in procuring for us specimens of the best periods for the continued enrichment of our collection. If you have been prejudiced against us by what has been said since our removal, all we ask is to try us, and see how we go on in our new position. But do not let what is said by irresponsible parties lead to the withdrawal of your confidence in those who have with the utmost exertion and zeal formed the collection to what it now is, nor withhold your aid from a movement which has already been of the utmost benefit to those engaged in architectural art.

Professor Donaldson, in moving the adoption of the report, observed, in allusion to the change in the Museum's locality, that they must all admit they had moved from a barn into a palace. There were to be none of the distinctions, however, that some times appertain to palaces, since the members of the Museum were to enjoy all the facilities of the new and enlarged site; and the importance of this could not be overrated, when they considered the great number that came to the Museum who would not only have the benefit of studying the casts, but the beautiful collection of pictures; and when they remembered that on Monday last, the vast number of 4,600 persons visited the Museum, they would be able to form a tolerable conception of the enlarged capacities of the Museum, and of the facilities it afforded for observing all these beautiful works of art, and so conferring advantages not only on their own Museum, but on the whole range of science and art throughout the United Kingdom. While at Westminster they were a solitary Institute, but now they were an associate with other societies of enlarged conception, and for other pursuits and studies. They were not confined to one geographical position as it were, but their conceptions became enlarged, and they regarded architecture in its fullest development. Some donations had been announced in the report, and he had great pleasure in placing on the table the first that had been presented to the Museum since it had assumed its present site. It came from a gentleman who had done more to extend a knowledge of literature in general, and the arts and sciences, than any publisher that could be named.—Mr. Bohn, who had presented to the Museum a volume he had published, on the subject of "Portery and Pottery." He had great pleasure in placing on the table this commencement of contributions that he hoped would follow in its wake.

Mr. Baden Powell, in seconding the motion, said:—The building in Cannon-row was only to be looked on as a temporary one; and had the museum remained there, there was not the same likelihood of its receiving the specimens and contributions they were now likely to obtain in its present more permanent location. They had also the greater advantages to arise from better classification; and they all knew that to the student of architecture, the architectural details of different dates and periods were very essential. Another advantage gained was the power possessed of keeping up a satisfactory and comfortable temperature in the present building. In the other building this in winter time was not attainable, and in that respect there was a gain as regarded moving.

The resolution was put and carried with applause. Mr. Scott then said, that as they had received the greatest kindness and assistance from all the gentlemen connected with the Department of Science and the Fine Arts, at the Museum, he begged to move:—

"That the best thanks of the committee and members of the Architectural Museum be offered to the Department of Science and Fine Arts, and to the Committee of Council on Education, for their general co-operation, and also for much personal attention from Mr. Cole, C.B.; Mr. Redgrave, R.A.; Dr. Lyon Playfair, C.B.; Captain Fowler, R.E. and to Mr. Owen."

The Architectural Museum was much indebted to all these gentlemen for their co-operation and assistance in a work of great difficulty and disturbance,—the removal of the Museum. They had lent every possible aid, and shown every conceivable kindness.

Mr. G. Goldwin had great pleasure in seconding the motion. He had watched what these gentlemen had been doing, and could testify to the truthfulness of the terms in which the motion was couched, and to their general efforts in the promotion of exhibitions calculated to be of so much utility in the cause of art and manufacture in this country.



applicable to the design of monuments for Christian churches, has been frequently discussed. We cannot call to mind any memorial work of such importance as the Wellington monument, executed since the works of Banks, Brown, Westmacott, Geo. Flaxman, and others, in Westminster Abbey and St. Paul's Cathedral. A considerable number of the recent monuments, as that to Sir Robert Peel, in the Abbey, have been single figures; or, under the newly recognised conditions of accordance with the character of an edifice, they have been strictly Medieval, and in a prominent degree architectural. The problem has therefore remained, so far at least as our principal national monuments are concerned, namely, how to design a monument with many sculptural accessories, or not the reproduction of an effigy, or canopied tomb,—neither obscurely allegorical, nor with emblems borrowed from people of a different creed,—not necessarily Gothic, and yet suited to a church and Christian edifice as distinct from any other public building. Had it been decided to erect the monument to the Duke of Wellington in Westminster Abbey, the designs might have exhibited more or less of the reproduction of the Medieval character, at least in architectural details: but in St. Paul's Cathedral, different details, but combined with what was valuable in the sentiment of the Gothic sculpture, might be expected, as well as perhaps from the very novelty of the field, a higher degree of merit than in the other case, in the art.

The principal monuments in the Cathedral do not, indeed, err so greatly as the more prominent works in the Abbey, against the conditions of the location: they are representations of events rather than sculptured deities. Deeply as the classical symbolism has woven itself into the thoughts of the civilized world, these forms could be understood where even Christian allegory could only have confused the observer; but, if fitted for any other situation, they are often strangely out of place in a church. Of the representative sculpture, under the same conditions, all that could be said was, that it did not attempt the distinctive character required under the associations. The problem, therefore, as we think, was left for solution, peculiarly in the present case. Let it not be forgotten that the distinctions of purpose or locality to which we have referred, are the source and not the hindrance of art.

The exhibition contains not more than one monument in which we discover an effort to introduce Gothic architectural details. There are several works which include a recumbent effigy, sometimes under a canopy or covering, sometimes within a portal and enclosing structure. These are derivations from the Gothic chantry chapel and canopied tombs, or Elizabethan monuments, without their details. In general, however, the particular sentiment which we have been supposing as required by the conditions, is not reached; but the designs exhibit prominently, allusions to the life and worldly renown of the deceased; and as if to show the difficulty of applying the principles as urged by some, the classical Victory is very generally adopted. Exactly how far such allusions should be confined to monuments not in churches, we are unable to settle. It is clear, the monument requires them in some form.

But, omitting designs which are too absurd for selection—and some which, in a combination of figures and rock-work, repeat the faults of the worst attempts in sculpture—we are glad to see many works which exhibit an advance in the direction we have been speaking of; whilst there are some productions, both English and foreign, that have great merit. The military trophies,—

“With guns, drums, trumpets, blunderbuss, an thunder,” have nearly all gone, and the art in the sculpture is all the more expressive for the omission of them.

Apart from what arises from the brotherhood of art, the exhibition is one in which architecturally there is much interest. In a recent article on public statues,\* we referred to the omission on the part of sculptors, to recognise in the whole group, principles which were those of architecture, and to attend to architectural details in the case as a whole. Although the requirements in the case of architectural buildings have not been so prominently before us as in that of sculpture out of doors, similar points require to be considered in all monuments. It does not follow that the sculptor is to adopt the form of a pedestal which may have been used, or would be suitable as part of a building, or choose the alternative of a plain block: these are common errors, from which the works in Westminster Hall are not free. But every accessory should be designed specially for the purpose, and for the principal monument, and architectural accessories and sculptured figures should all group as parts of one whole,—the product of one intellect. Sometimes the architectural, and sometimes the sculptural element will predominate. The

former occurred in the Gothic canopied tombs, and strikingly in the enclosed chantries, and also in a very marked manner in the Elizabethan works, which are essentially monuments produced by architecture: the latter predominant element would best effect the aim of recent works, where a story has to be told, and where, therefore, the portraiture and “phonetic” character of figure sculpture gives it peculiar advantages. In the present collection there are, however, several works worthy of notice, which fail, we think, from the too great prominence of the architectural element—as compared with the works which merely use architectural details, and a general architectural principle of grouping. One of the works,—nevertheless, one of the best in the collection,—has a defect, as we must consider it,—though following the example of the Chiosian monument of Lysistrates,—of being in appearance an architectural structure, with roof or domed covering, yet being really a solid mass decorated externally, though with sculptural accessories. It was suggested in our last, in allusion to the architectonic works of another class, that one building within another might be an error. In the Gothic cathedrals, there was a reason arising from the services in the monumental chapel, for the distinct structure of the chantry. For modern monuments, unless where the structure itself enclose the actual entrance to the grave—as in the Church of the Holy Sepulchre—we should be disposed to prefer a monument mainly sculptural; and in this class there are some at Westminster Hall, making all the use of architectural elements for which we have at any time contended.

A considerable number of the works appear questionable in principle, inasmuch as unity of expression is not kept up in the same monument. They are like the pictures such as those by Holbein at Hampton-court, which represent in the same scene several different incidents. Thus, as parts of one monument, we have above, a figure of the hero in action, and a representation of a monument to him, with a distinct figure recumbent, below. If it were the fact that the body of the deceased were actually beneath, a simple sarcophagus in the lower part of the monument of which the portrait statue is in the upper part, would have peculiar significance: otherwise the tomb, whether with or without the recumbent effigy, seems not strictly correct. The design is less objectionable when the sarcophagus occurs in the upper part of the work,—it is there obviously only emblematic, a part of the monument, and not presented in the way of mimicry of the actual tomb.

The models themselves are eighty-three in number, ranged in three rows along the Hall, and on the dais, on temporary pedestals or supports (two models on each), which are covered with crimson cloth.\* The foreign competitors muster in considerable force, as may easily be discovered: but the numbers have now been altered, so that the distinction does not appear as when our former notice was written. The general effect, viewed from the dais, is very good.

Many valuable thoughts will be found expressed in works by foreigners, and an equal amount of merit in those by our own artists. Owing to the requisite attendance of the competitors to put up their models, authors' names can be no secret at the Office of Works—more than they were generally in the Public Offices competition. It is very questionable whether any advantage results from the system of concealment. It would be quite sufficient to make it optional. One whose name has any prestige is sure to make himself known; and it would be rather better that this should be done of course, than done secretly. Where much depends upon the execution of a work, a reputation even might be taken into account. The authors of really meritorious designs had better, in any case, have the positive advantage which accrues from publicity, than the uncertain one dependent upon the best-named and most honourable of judges.

Amidst the designs which carry out the sculptural as well as architectural principles that should be always observed, and which also convey the idea of a certain lavish devotion of art required by the importance of the subject, we have marked No. 41, which appears to be the work of a foreigner. The grouping of the whole is excellent, and the architectural details of the base are subordinate to the sculptural element; and are novel and good.

\* The designs were advertised for at the beginning of September in last year; they were to be one-fourth the size of the monument, which was to stand upon a space of 13 feet by 9 feet, under the first arch on the north side of the nave of the cathedral—2½ ft. from the arch below the dome; the cost was not to exceed 20,000l.; any materials might be suggested, if properly shown on the model; the sum of 7000 500l. 300l. 20l. a day of 100l. each; the artist to whom was awarded the highest premium, however, if employed to execute his design, was not to receive the premium; and the successful models were to remain the property of the Government.

whilst not those of an ordinary pedestal. Many of the works which are amongst the earlier numbers of the series,—even where otherwise unexceptionable,—do not gain by the fulness of the theme. Such is the case, both with works which are mainly sculptural, and those which are mainly architectural. In the sculptural class under this general category, are No. 2, where a figure of Britannia is crowning Wellington, and the principal interest of the composition would have to be looked for in the equestrian figures of his camp-followers in arms, surrounding the dais of the oval pedestal. Alto-relievo on the curved plan would be very objectionable, as the model shows. Likewise (as in No. 7), a mere statue of the Duke as the State-sword bearer, with whatever accessories of figures around the base, would not satisfy the national object, or the other conditions. No. 11 is a work from Rome, of so much beauty and merit that we may be induced to give illustrations of it; but it is a work abominably architectural—a building designed for erection over the vault—making use of sculpture only in five statues, which are placed in niches, and are therefore very subordinate to it. There is a distinction between a memorial or monument and a monumental tomb, which, we say, should be observed. The details of the work are beautifully designed in the style of the Renaissance, and deserve examination as illustrating the real character of that style,—as to which, from the indefinite use of the term, there has been much confusion of ideas of late. We are more pleased with the admirable work which is placed next. In this (12), the architectonic element is indeed prominent; but figure sculpture is also freely introduced, and by its treatment at once claims attention. The architectural details and ornaments also are novel and suggestive. The principal mass consists of a superstructure of sculpture, well combined with the architectural details, and supported by an arch highly enriched with carved ornament on the face, and colour on the soffit, and spanning a bronze lid of a sarcophagus, on the ends of which are seated figures. One of these is a mourner, and the other appears to be recording the great deeds of the deceased. In the podium, coloured marbles are introduced in panels. A statue surmounts the whole.

Polychromy is not generally adopted, unless by the use of coloured marbles in pedestals. Bronze and granite, and also the same materials and Carrara marble, are sometimes combined with tolerable effect, as in one work at the end of the Hall; but bronze as the sole material of the figures is adopted in only one or two works; and these are more remarkable for their good modelling, than for the beauty, or at least originality, of their design. The modelling in general, through praised by the newspapers, has not appeared to us equal to the requirements of the case; and unquestionably it is such as to detract in many works from the expression which the artist intended to convey. It deserves consideration whether it is well, even for the temporary purpose, to neglect the expression of the faces so much, as has been done in many instances. The Duke of Wellington himself is not always identified readily—as the notice of the monument requires: and in one instance, the face bears more resemblance to that of Sir David Wilkie, than to that of the other great man intended to be commemorated.

Polychromy, however, enters largely into the effect of the domed shrine, with seated figures at the angles, and a recumbent figure beneath, which is numbered 13 in the collection. The scale of a model is peculiarly unfavourable to it, from the resemblance to pastry-cooks' work liable to be suggested to those who do not make allowance for dimensions, or who are touched with that besetting sin of amateur criticism,—the making out in every work resemblances to something common or vulgar, however far-fetched,—an objection, this referred to, which is not lightly to be encountered, but which is often preferred as though it were the sole object of criticism, and as though the beauty and enjoyment of the present and actual were of no importance. Portions of No. 13 show a pretentious hand in monumental sculpture. No. 14 has also a recumbent figure under a structure of Byzantine character, which would be chiefly dependent upon its coloured details. These are only sketched on the model, not shown as the instructions require. The letter of the “instructions,”—assuming the exact site on the lithographed plan to be binding—would be departed from in No. 15. It has a good seated figure on a pedestal, which, of course, would have to be placed transversely to the line of the nave. The same thing occurs in at least one other group; and it would curiously exemplify the error in the more important case, of which we have said so much, were it found here that works of merit sent in could not be allowed to compete, or that the strictness of definition had prevented the appearance of some suggestions. Perhaps, however, the advisers of the Office of Works or of the cathedral authorities,

\* See p. 213, ante.



have given consideration to what would best conduce to the effect of the cathedral itself.

No. 36 has the motto "Past Away," and one of its principal figures is an angel, with finger on lip, and closing the bronze gate of a tomb, near which lies the British lion. The upper part of the monument consists of a group of figures, including one of the Duke. This design will probably be that which will tell with the public. The prominent feature in it is unquestionably a fine conception: probably in those qualities of art which it has, it is not surpassed by any other work in the collection; and simplicity of treatment, and intelligibility, by no means necessitate poverty of thought. But we question whether as a whole, the monument does not offend against the unity of aim for which we have contended. Like the tablet by Marochetti, lately placed in St. Paul's Cathedral, and which exhibits a representation of a monument in the actual monument, the work here before us, mixes up different motives in its expression,—or confuses the objects of actual *fac-simile*, and imitation in art. The confusion referred to, however, is greater in No. 38, where the recumbent figure, on a tomb, is placed within a structure, which supports a distinct figure.

No. 49 is noticeable for its combination of figure sculpture around a central stem, or support; but here the design, though it has considerable beauty, has not the same merit as those works where curved lines are less used in the structural part; and it seems better fitted for objects of small dimensions.

In No. 55, there is an equestrian statue in advance of a group of allegorical figures and a pedestal, with a victory at the summit. No. 65 has some good details of ornament, and generally an architectonic arrangement. No. 68, which we have already referred to as involving what is somewhat defective in principle, is, nevertheless, a work of extraordinary ability. Its author says:—"In this design, the aim has been to make an architectural mass, in harmony with the structure and position in which the monument is to be placed, and to embody the chief features in the character and principal incidents in the life of the warrior and the statesman."

No. 76, a work not without merit, fails in grouping—by the use of two pedestals not well combined; but rather on the principle of design sometimes adopted in Birmingham manufactures, where a portion of one antique work is thought good anywhere conjoined to any other.—No. 80, for bronze, chiefly remarkable for its modelling, we have alluded to; and in No. 83 is the granite sarcophagus of archaic form, in the superstructure, with figures reclining on it, or grouped around, which we have mentioned; and we have omitted to give due attention to No. 27, in which the greatest variety of materials is employed with best effect, especially in the bronze figures, seated around the pedestal of the central statue. But we were not prepared by the short inspection that we could have this week, to do justice to all the merits of the works, and much less to enter into description: we have, however, ventured to offer some remarks on general principles—which we believe have lately been more considered in our special branch of art, than by sculptors—though ever required, and we are quite sure that with consideration of these, the technical skill which is now put forth could produce works monumental and memorial, second to none, modern or antique.

#### THE SCULPTURE OF THE ROYAL ACADEMY EXHIBITION.

FROM wandering through the five rooms in which paintings are exhibited, the ordinary visitor to the Royal Academy descends, tired and weary, to the Sculpture-room, or Sepulchre, as it is variously called, by the Academicians and the public respectively. Occasionally some one visits this small receptacle to see the work of a friend, or the portrait of some well-known individual; but after the brilliantly lighted rooms upstairs, and the bright colour of the paintings there, the darkness and muddle of the sculpture-gallery do not tempt him to prolong his search after the expected work is found. Of course the newspaper critic visits it, and sees the sixty busts looking like sixty clean casts from moulds of last year's busts, and the arrangements of the figures enable him to see a distinct view of the backs of a dozen when looking at the front of one. No doubt he is greatly edified by the *spectacle*, and sculptors and their students go there to mourn over the position of their works, and breathe something which is not a prayer, for the academic administration which consigns all their thoughts, and toil, and trouble, to the darkness of such a tomb.

You see the sculptor there pointing out his work to a friend, half unwillingly, for he says that the light strikes it in exactly the opposite direction to what he intended; that all the strong points are in shadow, and those parts which he paid least attention to are

thrust forward by the misplacement. His friend naturally asks why the academic sculptors do not propose a more suitable place for the exhibition of sculpture; but is answered by the information that it has been done over and over again. "There is no reason," he says, "why the room should not be enlarged and properly lighted, or that other means of exhibition should not be made use of. It has been proposed, for instance, to place two figures in each of the three large painting-rooms,—one on each side of the central passage, with pedestals to bring them on a level with the eye, and so arranged that the contrast of sculpture and painting, form and colour, might enhance the appreciation of both. This," he adds, "might easily be done, without any great expenditure, and with considerable advantage to the sculptor; but how are the five academic sculptors to obtain anything from the thirty-five painters? Painting reigns triumphant, and sculpture and architecture, on which it depends for its very existence, are both thrust aside as things of no importance. And so, I fear, it will continue, until a pressure from without causes a more equitable distribution of space."

Let us hope that this influence is already in operation. The sculpture this year is said to be very far below the average of late exhibitions, and the public verdict is never very wide of the mark. Nevertheless, there are some works in it which deserve to be remarked, and a few of the highest art. There are a greater number of works holding a secondary position in the scale of art than in any exhibition of several past years; and perhaps the reason why, as a whole, the exhibition is said to be bad, is that no one work standing out from the rest has been a source of attraction. A single fine work, however, does not constitute a good exhibition, and there is more hope, and more vitality, in this year's exhibition, than if an "Eve at the Fountain," or "Youth at the Stream," attracted daily crowds to their solemn places of entombment; for in the latter case we should see the advance of one man only, whereas we now see the advance of many.

In 1209, and 1215, we have the marble repetitions of works previously exhibited,—“Adam consoling Eve,” by Bailey, R.A. and the “Young Naturalist,” by Weekes, A.R.A. who contributes also, 1218, “The Mother’s Kiss.” Both of these last works are indicative of high promise. The design of the “Young Naturalist” is simply the study of a girl, who in all the simplicity of a child is wandering on the seashore, gathering shells and aquatic specimens. Meanwhile the “breezes dance in her golden hair,” and blow her drapery close upon her delicate limbs, causing her to stoop forward and place one hand upon her knee, whilst with the other she holds a starfish. All the artist has aimed at is natural beauty without much design, but with fine workmanship to produce a pleasing study; he has succeeded perfectly in it. “The Mother’s Kiss,” by the same artist, is of a higher order: it is maternity embodied. The figure is well felt, and admirably modelled.

It is worthy of remark that Mr. Weekes is his own poet, and whether his sculpture is in illustration of his poetry, or *vice versa*, it is not a little to say that they are both true to nature, full of grace, and fit each other admirably.

1211. “Beatrice Cenci.” This reclining figure, which is the production of a young lady, a pupil of Gibson, Miss H. Hosmer, although forcibly reminding one of modern monumental sculpture, is vastly superior to it in design and execution. It is well that so poetical a character should find so able an exponent, and well also that the sculptress should select subjects to grapple with which are evidently within her powers.

1237. “Portrait Statue of the Hon. E. Cornwallis Anderson Pelham,” by W. Thred. This is undoubtedly the finest work in the exhibition. It is seldom that one can speak well of portrait-sculpture, for few men have the power to make a portrait-statue convey more than the likeness and character of their subjects. Here, however, it has been regarded as the vehicle,—the means, and not the end. The portrait no doubt is excellent, for the face shows a close resemblance to the individuality of nature; but if it were not a portrait, the statue might stand on its own merits as an ideal work of the highest order. It is a child holding a bird in its hand, skipping along regardless of the little pet, who is pecking the child’s hand rather in love than illnature. The drapery, which falls to the knees, blows back close upon the figure and thighs of the boy, and its disposition, displaying what it is meant to conceal, viz. the beautiful form of the child, is so true to nature, and yet so grand in its treatment, that regarded with other parts of the figure, we might cite this as a perfect instance of the union of natural with ideal beauty. Examine well the little feet, and let painters take a hint from them, how feet bearing the weight of the figure should press upon the ground, and not be merely tangential to it: and then look no less carefully at the hands, espe-

cially the one holding the bird. This is Pre-Raphaelitism in sculpture, and of that kind which does not indulge in eccentricities in order to make itself conspicuous, but adheres closely to nature as the greatest element in beauty.

It is to be regretted that English architectural sculpture should be non-existent. Sculpture, as the enrichment and perfection of architecture, is a field that might well tempt many, yet how few, with the feeling and education of artists, are content to enter upon it! And here it would be well to notice how lamentable is the result of our painters and sculptors regarding their several arts as subjects independent of architecture, for much of God’s time is wasted, and his talents abused, by this selfsame conceit. Let both painters and sculptors remember that they are the ministers of the architect, and that their arts are merely the result of the development of architecture, and then we shall have works true in their adaptation to purpose, and beautiful in their truth.

There are, however, several works here which profess to be architectural. Amongst them may be noticed Nos. 1225 and 1232,—the first a statue of the Bard, by W. Thred, for the Egyptian-hall, in the Mansion-house; and the second, a statue of Hippocrates, by Munro, for the New Museum at Oxford. Both these figures are proofs that architectural sculpture is non-existent. Together with the statues of Fox and Chatham, they show what little attention has been given to architectural effect; and their special object was to produce this.

It is some comfort to find that part of the third and lowermost circular ledge which runs round the room, and has previously been devoted to busts, has been set apart for statuettes. 1250, “Dr. Latham,” by Papworth, sen. is an example of portrait-sculpture possessing some fine feeling, and much good modelling. Amongst the statuettes worthy of notice are 1243, by S. Ruddock, and 1245, by H. H. Armstrong. The former, illustrating the passage, “He hath regarded the lowliness of His Handmaiden,” is well designed, and shows considerable power in the treatment of masses of drapery, and delicacy in the modelling of the face. One of the best features of this year’s exhibition is the comparative absence of bad imitations of Greek models. It is impossible to be too severe on such pieces of hypocrisy, and their failure will bear out the severity. English sculptors seem unaware that the respect paid to classic works results chiefly from their historic value, and because they were the exponents of a creed in which the artists believed, and which possessed much poetry. Neither of these qualifications can be attributed to the works or motives of our modern imitators, and therefore they will never obtain the same consideration. It is impossible to produce better Apollos, or more graceful Venuses, or more anatomical Laocoons, than we already have; neither do we ever see such things at the present day, or think of such things; nor are our most beautiful thoughts, or most pleasing reminiscences, in any way connected with such things,—so that we need them not, either for the satisfaction of our intellect, or the cultivation of our imagination. The creation of works of art with inspiration drawn from heathen mythology, is like speaking bad grammar in an unknown tongue, and deserves a similar reception. To be appreciated, a work must be understood,—and who understands Greco-English sculpture?

WALTER SMITH.

#### PRIZES TO THE DISTRICT SCHOOLS OF ART.

THE award of medals to the successful students, in local competitions, of the London district schools of art, took place on Thursday, the 16th day of July, in the new Lecture Theatre at South Kensington.

The Hon. Mr. Cowper, in addressing the students, said that it gave him great pleasure to be the means of the distributing of medals so fairly earned. He had examined many of the works which were to be rewarded, and thought them very highly creditable to the producers of them. He had also been told, by those who were better judges of such things than himself, that there were some beautiful works amongst them, and that they showed a very considerable advance on previous years’ works. He would call upon Mr. Redgrave to address the students.

Mr. Redgrave said that, in addressing the students upon the subject which had brought them together, he must tell them how he had been struck by the works which had been brought before him. They showed much care and delicate manipulation. He would more especially notice the progress made in applied design in the Central School. The designs showed a more correct appreciation of nature than he had yet seen, and the designs themselves were bolder and better. He would remind the students of the Head School of their many and great advantages. He took the first opportunity of their assembling in the new Lecture Theatre, to congratulate them on



the position and advantages which were to be derived from their making use of the means in their hands. They had the Museum of Science and Art, and they had the library with most valuable books in it, which they ought to consult and study. He did not hesitate in saying that, as a school of art, the Central School was the best to be found, much better than the Royal Academy for earnest students. The number of works in the Museum, and also the number of casts, should be of incalculable benefit to the students. He would especially mention the extent and beauty of the ornamental casts there. A friend of his had applied for admission to the Royal Academy, as an architectural student, thirty years ago. Most of those present were aware that the architectural drawing had to be accompanied by a drawing of ornament, and, after searching in all the plaster-shops in London, he could not find a piece either good or bad, and was obliged to have a piece squared on purpose. That was at a time when Italian boys were in the habit of taking casts of Toby Philpot round the country, brightly coloured, with blue coat and yellow breeches. Instead of these, the Italians now sold casts of the best works of antiquity at a low price. Amongst other contents of the Museum would be found some beautiful photographs, coloured, of jewels belonging to the old French kings, and furniture, and such-like things, which in themselves were works of art, were there preserved from decay. Then there were galleries of modern sculpture and painting. Pictures had been given for the sake of public education, in the most noble manner. Art was always unselish; and a good illustration of that was Sheepshanks's stripping his own walls and generously giving his pictures to the public. Vernon and Turner had done the same, and Sir Francis Chantrey and Soane. He would recommend all students of architecture to see the Soanian collection, and whoever wished to do so might obtain tickets from him. He would remind the students that, in a similar spirit, art should be followed unselfishly,—not as a trade to improve their positions, but in love; and although it might turn to their worldly advantage, it should not be followed merely from that motive.

Mr. Cole then proceeded to call the names of the successful students, and Mr. Cowper distributed the medals.

The medal bears the Queen's head, with "Victoria by the Grace of God, Queen," and on the reverse,—"National prize for success in art, awarded by the Department of Science and Art." The medal itself is of copper, very thin, and not so artistic a work as we should naturally expect as a reward for success in art by a Department of Science and Art.

#### FRATERNITIES.

In answer to "An Architect's" letter (p. 390), I would only say that he appears to have misapprehended my aim, which was only to urge the benefit of more mutual co-operation amongst architects in carrying out into practice any principles of art whatever.

Take the most extended view of art which he himself advocates,—this practical personal re-union is still wanted, quite independently of the falseness or truth of principles which have been admirably worked out and systematised. Allow, too, to the fullest extent the fine sentiment which your correspondent puts in the mouths of Phidias, Bramante, and Wren, and the full meed of praise due to their respective works. I only maintain that the magnificent architecture of the Gothic period, to which he so forcibly alludes as having passed through its four distinct eras, emanated not so much from single individuals as from the conventional agreement of those who worked it out in accordance with certain laws and principles; and it is upon this that I base my plea for that close personal intercommunication which I hold to be essential to any successful development of art.

W. W.

#### THE METROPOLIS.

*New Works on the London and North-Western Railway.*—The operations for rebuilding the general goods station and warehouse of the London and North-Western Railway have been commenced by Mr. Jay, the contractor for the building, under the superintendence of Mr. Baker, the engineer, and Mr. Stansby, the architect of the company. The new building will occupy precisely the same site as before, but will extend over a considerably enlarged area, and will cover, altogether, a superficies of 59,000 square feet. The part of the original basement that was vaulted, and which has not suffered from the late catastrophe, will be retained; and the basement of every part of the enlarged building will, in accordance with the new design, be vaulted. The ground-floor of the building, together with the platforms, will be clear of all obstruction throughout, for the better accommodation and management of the extensive goods traffic. The clerks' and managers' offices will be on the upper

floor, and will be vaulted, and rendered fire-proof. On all sides of the building, which will be very nearly a square, the warehouses for storing of goods will be constructed, and the interior will be lighted from above by a glass roof. The walls will be of brick-work, and the girders of the floors of wrought and cast iron, supported by iron columns. The stabling and smiths' shops that hitherto formed part of the building, will, to prevent as far as can be all possibility of future fire, be removed from the building altogether to the other side of the Gloucester-road, but communicating with the goods station by means of a tunnel; and the ground thus gained will be appropriated for store-rooms. The new stabling will be extensive enough to contain 270 horses, with all the requisite smiths' shops, harness-rooms, and machinery: water-pipes will be laid on throughout the new structure, and there will be rails all round, to bring up the goods trucks to the goods platform. It is expected that the building will be completed in about four months from this date. New stations are being constructed at Watford (Mr. Palmer, contractor), and at Harrow and Pinner (Mr. Parnell, contractor), in consequence of the widening of the line out of London, which will ultimately extend, in quadruple rails, down to Bletchley, some forty-six miles from London. In noticing the new structure now erecting in front of the Easton Station, p. 396, for the shelter of vehicles and the public, it was stated that Messrs. Lawrence were the contractors. It should be said, however, that they are so for the iron-work alone; and that Mr. Parker, of Thrapston, is the contractor for the structure, which we understand will be completed in about a month.

*The Works at the Ornamental Water in St. James's-park.*—The operations in connection with these improvements appear now to be completed. The contractor's men have been engaged during the week in carting away the plant, and in general clearing up.

*Street Nomenclature.*—The Metropolitan Board of Works have just taken the first step in the proposed reform of "street nomenclature," about which a short time since there was much discussion. They are causing to be issued notices to the owners and occupiers of all houses in the New-road, between the Angel Inn, Islington, and the Edgware-road,Paddington, ordering them to affix or paint upon their houses or buildings such names or numbers as the Board shall approve or direct. The Board have determined that that portion of the New-road between the Angel Inn, Islington, and King's-cross, shall be called "Pentonville-road;" that portion between King's-cross and Osnauburg-street, "Easton-road;" and the portion between Osnauburg-street and Edgware-road, "Marylebone-road." The names of existing roads to be abolished. The Board state that the proposed alterations have been approved by the First Commissioner of Works, and that they are to take effect from and after the 31st of this month.

*Westminster Improvements.*—On Wednesday last week, the committee of the House of Commons threw out this Bill. Its object was to "wind up" the affairs of the Westminster Improvement Commission, and to appoint three official Managers for that purpose, to be called "The Westminster Encumbered Estates Managers." The promoters of the Bill alleged that the commissioners had not been able to complete the contracts entered into for the purchase of outstanding interests in lands lying on both sides of Victoria-street, and that in consequence thereof the lands could not be sold or leased for building, nor could the existing dilapidated and unsightly buildings be removed, to the injury of owners of outstanding interests, and of the mortgagees and bondholders, and of persons interested in the improvement of property in the parishes of St. Margaret and St. John, Westminster. The promoters, therefore, sought power to have the lands and property of the commission sold, collected, and divided among the creditors, whether by mortgage, bond, or otherwise. The Bill was thrown out, consequent on the opposition of certain of the bondholders.

*Finsbury Park.*—The Committee of the House of Commons have passed the Bill promoted by the Metropolitan Board of Works, for establishing a people's park for Finsbury. The City withdrew their opposition, and that on the part of St. George's, Hanover-square, was declared by the committee to have no *locus standi*.

*Westminster Palace Hotel.*—This is the title of a new undertaking, just registered under the Limited Liability Joint-Stock Act, for erecting an hotel in some central part of Westminster, and to purchase leasehold lands for that purpose. The Messrs. Moseley are the architects; Mr. Adam C. Hook the surveyor. Nearly half the shares, we are told, have been subscribed for.

*Two House and Estate Companies* have also been registered under the same Act; one called the Gresham House Estate Company, to take a convey-

ance of the Gresham House estate, acquire lands and build thereon, in the City; and the other the House and Estate Investment Society, to purchase houses, land, and estates, and sell same; and also for the letting of property, in the metropolis and its suburbs.

#### THE TREASURY, WHITEHALL.

If the intentions of the present energetic Chief Commissioner of Works be carried out, we shall soon see great changes in Whitehall, and we have been led, therefore, to precede the illustrations we intend to give of the selected designs for the Government Offices, with a view of the St. James's-park front of the Treasury, as designed by William Kent. As carried out, it will be found, a little to the south of the Horse Guards, to have the projecting central portion with two windows only on each side of it instead of the extension shown in the engraving. It consists, as will be seen, of a ground-story of Doric character on a rusticated basement, and an upper story, which has, attached to the projection in the centre, four three-quarter Ionic columns, carrying an entablature and pediment; the entablature running through, and forming the termination of the front wall of the wings. Several offices, of which we will presently speak, were destroyed in 1733, in order to erect the present building facing the Parade, the expense of which, according to Malcolm (*Londonium Redivivum*, vol. iv. p. 312), was estimated at 9,000.\*

Whitehall, it may be well to remind our readers, extends from Scotland-yard down to Canon-row, and from the Thames to St. James's-park. It was originally known as York House, and belonged to Cardinal Wolsey, and was first called Whitehall when King Henry VIII. took possession of it:—

"You  
Must no more call it York Place—that is past;  
For, since the Cardinal fell, that title's lost;  
'Tis now the King's, and called White Hall."  
King Henry VIII. Act iv. s. 1.

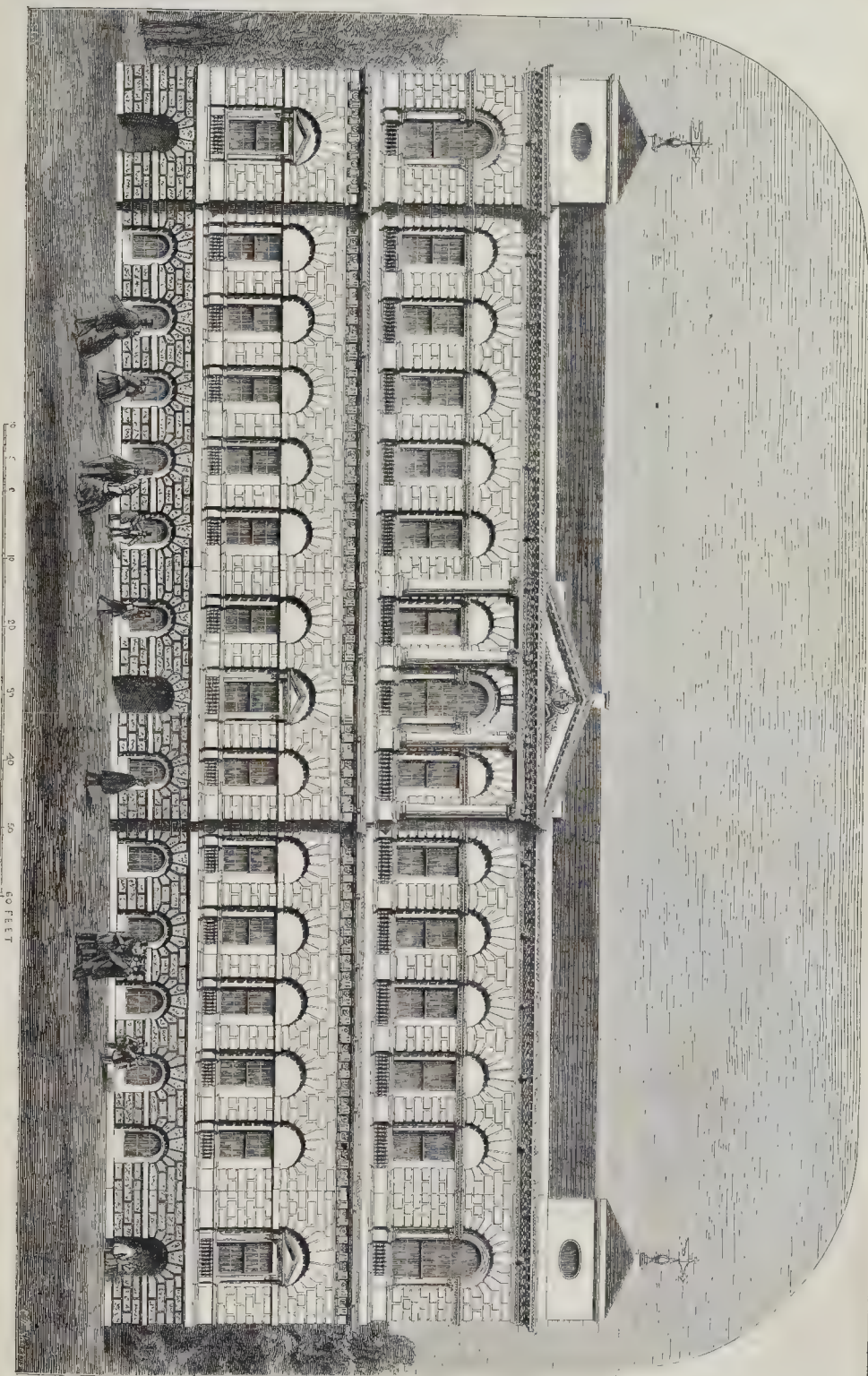
The King's Palace was seven years in building. There was a public way through it, with two gates, one of which was built under the direction of Holbein, at the north end of King's-street. This gate was taken down in 1759. Amongst his other works, Henry constructed a cock-pit, close by this gate: the gate, indeed, came to be called "Cock-pit-gate." This cock-pit, after various changes, settled down into "The Treasury." Godolphin, Lord High Treasurer in the reign of Queen Anne, sat three or four times a week "at the Cock-pit." Mr. Timbs, in his "Curiosities," says the phrase—"Given at the Cock-pit, at Westminster," was in use within his recollection. It occupied nearly the site of the Whitehall front of the Treasury,—the Board of Trade Office, first put into architectural shape by Soane, and then, as our readers know, made to take its present appearance by Sir Charles Barry.

Whitehall Palace, after previous mishaps, was finally destroyed by fire January 4th, 1697-8. The old Banqueting-house had been burnt down in 1619; the present Banqueting-house was commenced, by Inigo Jones, in that same year, and was finished in 1622, at the cost, according to Mr. Cunningham, of 14,940l. 4s. 1d. The Admiralty was commenced in 1723. Thomas Ripley was the architect, and Thomas Churchill the builder. In 1724, 600 planks of mahogany were brought from Jamaica for the inner doors and tables of this building; and, judging by the way in which the wood is mentioned in the public papers, it was evidently far from well known. Looking south of the building we have illustrated, in King-street the poet Spenser died from want, and here Cromwell lived when Member of Parliament. In a house facing Charles-street lived the poet Prior; and in Gardener's-lane, extending from Duke-street to King-street, died (1677) Hollar, the celebrated engraver, at the moment when he had an execution in his house. He desired of the sheriff's officers, says Oldys, "only the liberty of dying in his bed, and that he might not be removed to any other prison but his grave."

\* The same writer says,—"The value of the freehold, and inheritance of the ground and buildings from Spring-garden-passage to the Admiralty was estimated, in 1757, at 25,344l. exclusive of a brick house adjoining the old gateway near the Horse Guards, said to be worth 1,371l." What is the value now?



PARK FRONT OF THE TREASURY, WHITEHALL.—As Designed by WILLIAM KENT.





## THE WORKS AT DOVER HARBOUR.

THE works now going on for the formation of what is called a harbour of refuge, at Dover, are of such an extraordinary character, and involve such an enormous expenditure, that the particulars should be better known than they are. During a recent debate on Supply, Mr. Henley made some statements which deserve consideration. Gulphe, as these are, in the ordinary reports of such debates, it may perhaps elicit information, and be of some advantage, if we publish some of the principal points. Mr. Henley first wished to know whether the Government intended to carry out the works which had been recommended, or whether they had other intentions. The operations at Dover commenced about seventeen or eighteen years ago, when a commission was issued—known as the James Gordon's Commission—to inquire into the state of the south-eastern ports. Nothing, however, appeared to have come from that commission, and about 1842 a committee—known as the Shipwreck Committee—sat, and recommended many things, but only touched lightly on harbours of refuge. In 1844 and 1845 another commission was appointed, in which also the fighting element largely predominated, and they recommended, on the 7th of August, 1844, that a harbour be constructed at Dover, and that the works should be immediately commenced by carrying out that portion which communicated with Cheesman's Head. Mr. Walker, and several other engineers, were next employed to prepare plans for the harbour, and also to state their opinions as to whether the shingle and silt would destroy the works when completed. They reported in favour of beginning at Cheesman's Head, but said that no safe conclusion could be arrived at with respect to the shingle and silt, and, in 1845, they recommended that the south front should be proceeded with. He now came to the resolution of the commissioners, which was communicated to the Government in 1846. The commissioners stated, in the first instance, that they were decidedly in favour of a harbour in Dover-bay, adding that the chief points for consideration were the area, the outlines, the position, the entrances, and the mode of construction. In the second and final report they recommended that the works should be commenced at as many points as practicable, and expressed their earnest hope that no pecuniary considerations would be allowed to delay the accomplishment of an object of such vast importance for the welfare of our shipping and the general interests of the country. They also went, at some length, into the question of construction, and the consequence was that two of the commissioners—Sir William Symonds and Sir Howard Douglas—dissented from the report, the former stating that a large area was unnecessary, as the harbour would be visited only by war-steaming, post-office packets, and a few disabled or straggling merchant vessels, and that the evidence in favour of the mode of construction adopted by a majority of the commissioners was conflicting and unsubstantial. At last, however, in the autumn of 1847, after a deliberation of seven or eight years, the works were commenced, the commissioners having decided—Sir Howard Douglas and Sir William Symonds dissenting—to build the walls nearly upright, and to enclose an area of about 520 acres. The estimated expense was stated to be about 2,500,000. He now came to the progress of the works, and here he must express the strong opinion, which he thought would be shared by the committee, that it was very desirable the country should be informed what the Government really meant to do with these works—whether they intended to carry them out upon the original plans or not. They began with taking some 30,000, or 40,000, a-year, and the first contract, which was for a length of 800 feet, was concluded in 1854. A second contract was then entered into for 1,000 feet, still proceeding upon the plans which accompanied the final report of the commissioners, and in which no material alteration was made, except as to size and the position of the entrances. Up to the present time, therefore, the progress of the works had been extremely slow. Only 800 feet out of one mile and three-quarters, which was the length of the whole plan, were completed in 1854, with some little extension of the foundations, and the contract which had been entered into since then for 1,000 feet was to extend over ten years, ending in 1864, being at the rate of 100 feet per annum. It did not seem to him that the works had progressed even at that rate, and he would presently make some observations to show the reason why they had not done so. This work had to be executed by means of the diving-bell in deep water; and here he could not refrain, in passing, from paying a tribute to the skill, ingenuity, and perseverance displayed by the engineers and all employed under them in carrying out such an arduous and difficult undertaking. The work, however, was proceeding at a very slow pace. To carry out great works of this nature in a dribbling manner was nothing less than a waste of public money. The commissioners

had advised that the works at Dover should be begun simultaneously at more places than one, and completed as rapidly as possible; and they also attached greater importance to this harbour than to any of the other works which they recommended. These suggestions had not, however, been practically attended to. Only 800 feet of the masonry had been finished in seven years up to 1854. Another, 1,000 feet were contracted to be finished in ten years more, which would bring them to the year 1864. The former part of the work had been executed in comparatively shallow water, but now the operations had to be carried on at about 46 feet below low-water mark. There still remained to be completed, according to the plans, 8,500 feet, which, at the present rate of progress—viz. 100 feet per annum—would take eighty-five years. If they added to this the seven years required to finish the 1,000 feet contracted to be finished up to 1864, this would give them a period of ninety-two years over which the work would extend. Surely this slow rate of progress involved a great waste of capital. But taking the work done in deep water and averaging it with that done in shallow water, they would find that between 1847 and 1855 the actual rate of progress was not 100 feet, but only 86 feet per annum. Indeed, in 1855 only 46 feet of the foundations had been laid, and in 1856 50 feet more; and as it was clear the work could not proceed faster than the foundations, instead of the undertaking being completed in 100 years, if it went on at the present rate it would probably require 200 years. Surely this was a very unsatisfactory prospect; and he was therefore anxious to learn whether the Government intended to carry out this work according to the recommendation of various commissions. Sir W. Symonds apprehended some difficulty as to the foundations. Let the committee mark the facts disclosed on this point in successive reports from Messrs. Burgess and Walker. In April, 1855, Mr. Walker said, "The progress of the works has been much delayed by the weather, and also from the chalk foundation not proving so good as in the portion nearer the shore, as stated in our special report of the 29th of July, 1854." The special report here referred to had not been laid before the House. In July, 1855, Mr. Walker followed up his former statements in these words:—"The surface of the chalk being still of an inferior quality, it has been necessary to sink the masonry a considerable depth into it, to obtain a good foundation. The foundations are 41 feet below low-water spring-tides." The report of the 10th of October, in the same year, said the foundation was still retarded from the necessity of removing a large quantity of soft material before it could be laid. It added, "The foundations are being laid 43 feet below low-water spring-tides." In July, 1856, Mr. Walker reported that "the soft nature of the bottom still retards the progress of the works;" and on the 8th of October of the same year, he said, "The foundations are being laid upon the same description of bottom as described in our former reports, 45 feet below low water spring tides." Another matter which bore very much upon the time at which the harbour would be completed, was the interruption that the work had experienced from time to time from gales of wind. Mr. Walker's reports, curiously enough, stated some things which certainly throw some light upon those discussions which took place some time ago as to the form in which the harbour should be constructed. One point discussed by learned men at that time was, whether, in point of fact, there was any percussion in the sea, some maintaining that there was, and others that there was not. Mr. Walker's report, dated January, 1851, referred to the storm which took place on the 23rd of October, 1850. Mr. Walker stated that portions of the new works were thrown down during the storm, as they were unable to withstand the continued shocks. Now, he (Mr. Henley) apprehended that shocks meant something like percussions. The successive gales and continued shocks washed upwards of 200 tons of stones out of their beds. He had been told by persons conversant with the subject that these stones were of very large size, and that they had been fastened to each other in the strongest manner possible. On another occasion the same thing took place. In 1853 many stones were replaced, and it became necessary to take up many other stones in order to replace them. Again, in 1854, a portion of the stones was displaced, and 240 feet of the staging was carried away. These accidents had, no doubt, occasioned great delay, but it was a matter of great importance to the House to be informed whether the Government really intended to complete the work as recommended by the commissioners, and whether they intended to proceed at a more rapid rate with it than at the rate of 40 or 50 feet a-year, for, if not, it would occupy from 150 to 200 years in construction.

Sir C. Wood, in reply, said, as regarded the great question whether the Government had made up its

mind to construct the whole harbour as recommended by the commission, he was afraid he could not give the right hon. gentleman any satisfactory explanation, because, as far as he knew, that subject had never seriously been considered by any Government. The two commissions which had reported differed as to the area which should be included in that harbour, as well as upon other points, the estimate in the one case being 2,000,000, and in the other 2,500,000. If the ultimate decision of the Government should be not to construct the larger harbour, a most valuable work would still have been completed, capable of sheltering vessels and of holding a steamer at any state of the tides.

## THE FAILURE OF GIRDER, WOLVERHAMPTON.

MENTION was made in our pages of the breaking in June last of an iron girder, and the consequent fall of the arches of a new building, on the premises of Messrs. R. Perry and Sons, Temple-street, in Wolverhampton. A young man, named Thomas Lewis was seriously hurt, and has since died. At the inquest held on the 7th and 13th inst., evidence was given that the girder which broke had been substituted for one in which there was a crack about 4 inches long and one-sixth of an inch wide, stopped up with putty. Amongst other witnesses, Mr. H. C. Hurry, civil engineer, who had been employed by Mr. Bridges to make an examination of the girder, having been called by Mr. Haynes, handed in a report upon the cause of the breakage, which was received as evidence. It stated that the broken girder was one of a number used in the construction of a fire-proof floor, and was carried at each end by a brick wall, the space between the walls being 13 feet 6 inches. The section of the girder was one of an inverted V, with three cross webs in its length. The girders were placed about 7 feet 9 inches apart: they were tied together by wrought-iron rods, and from girder to girder were thrown brick arches, with brick paving above forming the floor. The weight of the portion of the flooring carried by such girder was about 7 tons 5 cwt., including the girder. For the situation and circumstances, and allowing for a weight of one ton per square yard to be put upon the floor, a girder was required of a theoretic strength of about 27 tons. The maximum theoretic breaking weight for the girders used he found to be about 86 tons. He therefore considered that the girder used was much below the strength required. However, the only load upon the girder at the time of the breakage was the flooring, a few workmen, and its own weight, which united might be taken as equal to about eight tons, or to a central weight of about four tons. Making the usual allowance for imperfections, a girder of a theoretic strength equal to about twelve tons was required to carry the weight that was upon the girder that broke. He therefore concluded that the girder was about thirty per cent. less in strength than it was prudent to trust the weight upon. He did not consider the iron of which the girder was made to be of first-rate quality, but it was such as he should without hesitation have accepted as fair contract material for the purpose. Where the fracture had taken place there was a small imperfection in the casting, but not, in his opinion, at all sufficient to account for the accident. The distribution of the metal in the girder was considerably at variance with the theory of cast-iron girders as established by the best authorities. He was of opinion that had the rules given been more closely observed, a stronger girder might have been obtained with the same weight of metal. He was consequently forced to the conviction that the accident resulted from the girders having been made by some mistake constructively imperfect, and therefore inadequate in strength.

Mr. John Coley, manager to Mr. Bridges, who gave his evidence in a nowise satisfactory manner to the coroner and jury, said there was no written contract for the supply of the girders. The section of the girders, the specification, and the qualities were supplied to him by Mr. Veall. The witness admitted, after much questioning, that it was his duty to examine the girders before they were sent out from the foundry; but he could not say he had examined all the girders supplied to Messrs. Perry. He particularly examined the girder which broke. He did not detect any flaw in it. Mr. Bridges' men erected it. He and their moulder expressed an opinion that the girders were too weak, but they did not tell Mr. Veall. He was not satisfied with the principle of the girder; he never saw one like it before. The other part of the building had been prevented from falling by columns being placed under the girders. He had examined the girder which broke, and there was a flaw in it which was supposed to arise from a "cold shut," or, from two metals, one colder than the other, coming in contact and not uniting. His



opinion was that the flaw arose from a small portion of scoria being mixed with the molten iron. The cause of the breakage was the defect in the casting, but such defect could not be seen before the girder broke, there being a shell over it. Mr. Veall tried some of the girders with a chisel and hammer. The moulder was paid at per cwt. for good castings: he was not paid at all for defective ones.

Mr. F. R. Wheldon, engineer, and manager for Messrs. Thomas Perry and Sons, of Highfields, said that by request of Mr. Veall he examined the girder which broke. He observed a defect at the part where the girder broke which would fully account for the occurrence. The girder was generally very defective in consequence of "cold shuts," which were not apparent to the eye, but he detected them by striking the girder with a hammer. If he had examined the girder before it was sent from the foundry, he should have ascertained that it was defective. The witness then produced two pieces of iron broken from the girder, in both of which he pointed out very extensive illustrations of his statement that the defects were produced by "cold shuts"—each piece not being a solid mass, but composed of two layers, which had not united.

The jury returned a verdict of "Accidental death," accompanying it with an expression of opinion that great blame attached to Mr. Coley, Mr. Bridges' manager, for not testing the girder in question with a hammer, in the absence of a hydraulic press, his attention having been particularly drawn to the subject by the girder—while the casting that broke replaced—having been found defective.

#### THE DISTRICT SURVEYORS AND DANGEROUS STRUCTURES.

##### METROPOLITAN BOARD OF WORKS.

At the usual weekly meeting of the Metropolitan Board of Works on Friday, the 17th inst., a deputation from the Association of District Surveyors under the Metropolitan Building Act, presented a memorial praying the Board to institute an inquiry into the mode in which the provisions of part 2 of the Building Act relating to dangerous structures had been carried out, more especially by the memorialists. Mr. John Thwaites, President, in the chair.

Mr. Woolverch having read the memorial,

Professor Donaldson then explained that the object of the District Surveyors' Association was for the purpose of "establishing uniformly and respectability of practice amongst the district surveyors; for their protection in the discharge of their duties; for the discussion of all matters relative to the Metropolitan Board Act, or any Act under which they may hold office; and for co-operation in carrying out any such Act efficiently, and with advantage to the public." These were the broad, liberal, and public grounds on which the Association was founded, and the deputation came before the Board which had the appointment of district surveyors, and the superintendence of the way in which they discharged their duties, in order that they might not rest under any unjust accusation as to the way in which those duties were discharged, or lose the confidence of the Board, which they were most anxious to possess. Part 2 was a very important portion of the Building Act, and perhaps there was no other portion of the Act in which the public were so materially interested as that which related to "dangerous structures," and there was one part of it, the following, he would read, which was all that related to district surveyors:—"Whenever it is made known to the Commissioners hereinafter named, that any structure (including in such expression any building, wall, or other structure, and anything affixed to or projecting from any building, wall, or other structure), is in a dangerous state, such Commissioners shall require a survey of such structure to be made by the district or some other competent surveyor, and it shall also be the duty of the district surveyor to make known to the said Commissioners any information he may receive with respect to any structure being in such state." By this provision the duty of the district surveyor was simply limited to this—that if any party gave him notice of any structure being in a dangerous condition, it was his duty immediately to send a notice to the Commissioners of Police. Now as directly bearing upon the provision of the Act, and with respect to the recent occurrences in Tottenham-court-road, he would read the notice that had been given in that matter to the Commissioners of Police.

Having read the notice, the speaker went on to say,—"It would be found that the district surveyor ought not in fact to make a survey, because the survey is to be made by the surveyor to the Commissioners of Police, but as soon as the district surveyor found the premises in a dangerous condition he forthwith sent notice. Then the Commissioners of Police sent their surveyor, presumed to be competent, and he made his survey, and he served notice of condemnation,

sent by one of the Commissioners of Police on the premises or the parties. The terms of this notice were very general.

The President.—What was the date of the accident in Tottenham-court Road?

Professor Donaldson.—May 9.

The President.—And what is the date of the notice given by the district surveyor to the Commissioners of Police?

Professor Donaldson.—April 18. No copy of the condemnation was served on the district surveyor, and after this the district surveyor heard nothing about the matter of dangerous structures; in fact, he had nothing more to do, because the Commissioners of Police take the care of it. But the district surveyors have been very anxious to know to what extent attention is given to their notice, as regarded any required supervision; and application had been made to the Commissioners of Police, in that special case requesting them to furnish a copy of the notice.

The application was ready in reply Sir R. Mayne said,—"The sending as suggested to the district surveyor a copy of the Commissioners' notice to the owner of a dangerous structure in each case, would add so much to the correspondence, already very heavy, in carrying out the Act, that I am unable to comply with the suggestion. I understand that the builder is required by the law to communicate with the district surveyor before the work is commenced, and in this way the information will be given to the surveyor instead of by the communication from this office."

Now, what was the result of this? The notice of condemnation of a dangerous structure might be forwarded to an owner in the country, and might never reach the builder. In fact, it was found that the owners kept it as much to themselves as possible, so as not to let the district surveyors be cognizant of the extent of the work to be done; but the builder is desired to go on with operations. Consequently, the district surveyors never saw the notice, and they were left quite in the dark as to the result of the information they had given. It appeared from the report of a gentleman who was called in as assessor, in the Tottenham-court-road case, as to the way in which the district survey was carried out, Mr. Marsh Nelson,

"That the primary cause is to be ascertained from the evidence of the district surveyor. He stated that no detailed survey was made before permission was given for the alterations, the walls were not examined either in the basement story or in the roof. Now, had the district surveyor considered it part of his duty to make a proper survey in the first instance, the result would have been that the party and front wall would have been condemned."

This was a contradiction to the very notice given by Mr. Baker himself, calling attention to these premises. Then again, in the same report, it was stated:—

"The effect has been to create a difference of practice and division of authority, and the Act in this respect is more complicated and confused than before. The Metropolitan Board of Works who appoint the district surveyors, have no power to interfere with dangerous structures, and the Police Commissioners adopt one course of proceedings in one part of London, and the Commissioners of Sewers another within the City. The two latter bodies dislike the duties imposed upon them by the Act, not being in any way connected with the ordinary duties of their departments. The Commissioners of Sewers have not appointed surveyors to administer the Act, but return the notices to the district surveyors, directing them to be carried out, however arbitrary they may be. The Police Commissioners employ the surveyors, and the result is great jealousy on the part of the district surveyors, who are called upon to superintend the works ordered by the Police Commissioners, and which as in this case they may consider improper, but still they are required by the Act to superintend those works and see them carried out."

Now the deputation on behalf of the District Surveyors' Association begged to repudiate any such imputation as the above, in reference to the discharge of their duties. There was no jealousy on their part, and they were willing to give every authority and power they had under the Act, and see that all works were carried out in a sound and efficient manner. He would rather say that there was no division of authority among the body represented by the deputation, but rather a concurrence or combination of authority, and a desire to discharge their duty not only faithfully and to the satisfaction of the Metropolitan Board of Works, but to the public generally. It was under these impressions and circumstances that the deputation brought the matter before the Board, hoping that in its eyes they would be found to have discharged their duties properly and efficiently, and requesting the Board in the terms of the memorial to institute an inquiry into the question.

Mr. Bristow then moved that the memorial be received and referred to the General Purposes Committee. He thought that the gentlemen representing the deputation had established a case of considerable moral grievance. There were many matters in the memorial that called for inquiry, including the question of application to the Police Commissioners for fees for special service. The facts, he thought, went to show that Mr. Baker did his

duty efficiently and well, and he would take that opportunity of saying that, in his humble judgment, and as far as his experience went, he knew of no body of men who did their duty better, taking them as a body, than did the district surveyors. Mr. Brown, in fact, in his (Mr. B.'s) district, was what he might term a model surveyor.

Mr. Burslem, representative of Paddington, seconded the reference. He believed that the district surveyors might be made the most useful body of men in the whole metropolitan district. He believed that their duties were much checked and complicated by the Act of Parliament, and he hoped that the present reference would be the result of placing them in a clear and intelligible position.

Mr. H. L. Taylor supported the reference to the committee, for he thought that by the Act injustice was done to the district surveyors. He thought Part 2 of the Act, correctly read, meant that the district surveyor should be the party employed, though it did say "some other competent" surveyor to be employed by the commissioners. The further consideration of the matter was then referred to the General Purposes Committee, and the deputation withdrew.

#### CONDITION OF COLNEY-HATCH LUNATIC ASYLUM.

SIR.—A good deal of discussion having arisen as to the state and condition of the Panper Lunatic Asylum, Colney-hatch, it occurs to me that the following report which I have obtained on the subject will not be without interest to your readers.

S. W. DAUKES.

"Having been requested by Mr. Daukes to examine the Lunatic Asylum at Colney-hatch, with reference to certain alterations now being made in the building, and particularly by the removal of the roofs and arches, and to express unreservedly our opinion as to the alleged defects in the design and construction of the building, and as to the necessity or non-necessity for such alterations,—

We beg to report that we have carefully examined the structure, and upon such examination we have arrived at the conclusion that the alterations now in progress are unnecessary; that the few settlements that exist are due to natural causes, and are of a very unimportant and even insignificant character; that the alleged defects in the roof are of no structural importance; that the forms of the arches have generally remained unchanged from the time the centres were removed from beneath them; and that there is nothing in their present state to excite any apprehension of danger, much less 'serious alarm.' We are, therefore, of opinion, that the heavy expenditure which is now being incurred is wholly uncalled for; and that there is nothing to justify an imputation of want of skill, judgment, or diligence on the part of the architect in the design or construction of this most extensive work. This opinion we shall be prepared to support by our testimony whenever occasion may require.

WILLIAM TITE, ANTHONY SALVIN,  
T. HAWESLEY, O.E. T. H. WYATT.  
July 15th, 1857.

"\* \* \* Our readers will find it very difficult to reconcile reports on the condition of this building by Mr. Lewis Cubitt and others, already mentioned in our pages, with the above very clear and positive statement, and will doubtless ask, who is wrong?"

#### CORRESPONDENCE ON THE GOVERNMENT OFFICES COMPETITION.

HAVING been requested by several professional friends, now that the decision of the committee is made public, to mention in your periodical the names or numbers of the superior designs I alluded to in my article entitled "What a Foreigner thinks of the Government Competition," you will oblige me by publishing in your next number that in the Renaissance style I fixed upon No. 77, by Mr. H. B. Garling; and for the second, No. 94; both the designs approaching one another very much in harmonious arrangement; but as, in my opinion, the tower at the right-hand corner of the elevation in No. 94 might as well not be there, I alluded to No. 77 as the first, and was glad to hear, since I wrote the article, from the able designer, what I did not know before, that he himself pointed out in his memoir that he did not consider the tower an improvement to the elevation; but that there was no time for alteration. The other two I selected as next in merit were Nos. 54 and 112.

In the Gothic style, No. 116, by Mr. G. E. Scott, is the design which distinguishes itself above all others, and I intended it to occupy the first place in my previous writing. Perhaps the non-professional visitor may not have been so much struck as myself; because, as there was not a general view, it required the mind of a professional man to group the several beautiful elevations into one picture. But I remain by my former expressed opinion, that it is unquestionably the best of the Medieval designs. Next to these, No. 140, by Messrs. Pritchard and Sedgwick, and No. 129, by Mr. Street, are the ones I alluded to, while No. 61, in the Elizabethan style, and Nos. 76 and 99, give eminent proof of great architectural ability and refined taste; but, as I have said before, the styles adopted in these designs, however meritorious they may be in themselves, I did not consider suitable for the object in view, and it seems that the committee has been of the same opinion.

Having accomplished the wishes of my friends in the above remarks, I cannot forego expressing at the same time my fervent hope that Sir B. Mainwaring Hall may continue in the same judicious and liberal path he has entered upon, by entrusting the successful



competitors with the execution of their own plans, for it would seem to me hardly fair to place the productions of the labour and thought of those gentlemen in other hands; besides the danger that the designs themselves should not be carried out according to the intentions of their projectors.

DE JONG.

#### THE PROPOSED TRUSSED SUSPENSION-BRIDGE FOR LONDONDERRY.

MR. P. W. BARLOW, in the *Builder* of the 27th June last, publishes a sort of challenge to all comers who disapprove of his designs for a trussed suspension-bridge for Londonderry, to carry both railway and common road traffic, stating that he purposes to bring the subject before the mechanical section of the British Association at its meeting in Dublin, in August next, and there have the subject, which he affirms is of great importance to railway interests generally, thoroughly ventilated and discussed. Perhaps you will permit one of the competitors for this said Londonderry bridge, who knows something of British Association sectional discussions, and especially of those of the mechanical section, to say that the challenge is a *very safe* one,—that as few engineers of any practice, mark, or station have ever attended this section of the British Association, in a professional aspect,—as probably not one competent or recognised engineering authority may be present in that section at Dublin,—and as the audience at such sectional meetings is no practical judge of such questions,—so Mr. Barlow, if permitted to bring forward his subject at all, will probably have “a walk over,” or no discussion at all. It may be hoped, however, that the officers of the Association will guard its legitimate object—“the promotion of science”—from this very cunning device to prostitute the name and the authority of the British Association to the promotion of a private object. If we were to have Mr. Barlow’s pet project there, it certainly would be both fair and satisfactory to the ill-treated competitors of the Londonderry bridge designs, that Mr. Charles May would also appear, and let us feast our eyes upon the design of Sir William Cubitt’s clerk, to which he gave the first prize, and which has been as invisible to all men so far as Fortunatus, with his cap on;—and that the commissioners also would come into court, and explain why it is that, passing over all the designs to which their prizes were given, and those others purchased by them, with estimates far within their prescribed limits of money, they employ Mr. Barlow, who won no prize, as their permanent way, and to whose imperfect estimate for his injudicious structure, Sir William Cubitt tacks on one-sixth at the first blow, and is then cautious of his approval. The arena which Mr. Barlow offers is quite as fit for the latter as for this proposal. But, no hidden enactment of acrobats, and of Polichinello’s theatre on four legs, surely it is infinitely more important that the narrow strait to the Park-wicket, through which over 20,000 persons pass daily, should be kept free and unobstructed.

This privileged entrance to the park is really much valued by the populous neighbourhoods to which it subserves, and as the stall-holders now threaten violence to any wayfarer who passes on the public pavement between the outstanding tables and the houses, it is time that the local authorities or the police should interfere to put down the nuisance.

Q.

#### THE LATE MR. C. H. WILD.

WE have this week to record the death of a young engineer of great promise, Charles Heard Wild, who, as is well known to his professional brethren, has for some time past been the victim of a painful and lingering brain disease,—the result of over-work at an early period of his career. Mr. Wild was a pupil of John Braithwaite, and afterwards studied practically in the factory of Messrs. Braithwaite and Co. At a very early age he was entrusted with an important mission in France, to superintend the construction of Ericsson’s propeller boats. On his return to England he was placed at the head of Messrs. Fox, Henderson, and Co.’s drawing-office at Birmingham, where the designing of many very important works was confided to him; and he here displayed such a remarkable aptitude for engineering science, that he was, on being introduced to Mr. Robert Stephenson, engaged by him as one of his principal assistants, on several works of magnitude,—amongst others, the Britannia-bridge, where Mr. Wild largely assisted in devising and carrying out the boating of the tubes.

In Mr. Edwin Clark’s work on the “Britannia and Conway Tubular Bridges,” there is a very valuable paper on “The Deflection and relative Strains in single and continuous Beams,” from the pen of Mr. Wild, which furnishes a very high idea of his powers. On the recommendation of Mr. Stephenson, Mr. Wild was appointed assistant engineer under Sir William Cubitt, to the building in Hyde-park; and on the formation of the Crystal Palace Company, Mr. Wild was appointed engineer to the building at Sydenham, which was erected under his engineering

superintendence. It was at this period that the painful disease, which has just terminated fatally, first declared itself; and he was recommended by his medical adviser to resign his post, and to travel abroad for two years, which he did, with, however, but little benefit. Since his return his health has gradually declined, until he was relieved from all suffering on the 19th instant.

Mr. Wild was the author of several valuable improvements in railways: his railway switch is now universally adopted, and it is considered by engineers that he completely solved the problem of a change of rails.

“Warren’s girder,” which is now so much employed for railway bridges, owes its success to Mr. Wild’s assistance, notably at the Newark-bridge and the Crumlin viaduct. His “Hexagon turn-table,” and “dock-gates,” are also amongst the valuable improvements which Mr. Wild has left behind him, in some way to compensate for a life of such great promise being thus early terminated.

#### PARK-WICKET, KNIGHTSBRIDGE.

THIS access to Hyde-park, lately so much improved by the clearance of the Old Life Guards public-house, with its external tipping-seats and tables, and also of a row of costermongers’ stalls, now replaced by the Duke of Wellington’s riding-house and stables, is one of the most important easements to the districts of Brompton and Chelsea. Its length is about 160 feet, and the mean width throughout about 14 feet, the whole being paved level from house to house. None of the approaches to the park by wicket is more thronged than this, and yet, narrow though it is, we find the greater portion (about 100 feet next the park) obstructed by tables, benches, and settles, thrust out upon the pavement. There are, beyond the riding-house on one side, three small houses, and on the other side four, all of which, with only one exception, are turned into shops, with open doors and windows, exhibiting all sorts of fluid and solid refreshments, together with nondescript confectionery for children, nursemaids, and idlers in dalliance; but the worst feature is the array of benches on either side, which narrow the too stunted way to the width of an ordinary hall entrance.

On emerging from the park, these free stalls, for eating and drinking *à fresco*, are certainly not required here, for in this very passage there are two public-houses, and at the end of it, in Knightsbridge, within 100 yards at either hand, there are no less than seven gin and dram-and exhibition palaces, with many coffee-shops and other places of turbulent recreation.

If the aristocratic squares and genteel streets are conserved by the police, and kept free from the unbidden enactment of acrobats, and of Polichinello’s theatre on four legs, surely it is infinitely more important that the narrow strait to the Park-wicket, through which over 20,000 persons pass daily, should be kept free and unobstructed.

This privileged entrance to the park is really much valued by the populous neighbourhoods to which it subserves, and as the stall-holders now threaten violence to any wayfarer who passes on the public pavement between the outstanding tables and the houses, it is time that the local authorities or the police should interfere to put down the nuisance.

Q.

#### CHURCH-BUILDING NEWS.

**Norwich.**—The restoration of the last side of the tower of Norwich cathedral is now nearly completed. The works have been executed under the superintendence of Mr. J. Brown, architect to the Dean and Chapter.

**Dorking.**—The new church of St. Paul, Dorking, was consecrated on the 22nd inst. It has been erected at the sole cost of Mr. John Labouchere, on a site presented by Mr. H. T. Hope. The edifice will accommodate between 500 and 600 persons. It is in the Early Decorated style, and consists of a nave and chancel, with open south porch. In the west gable is a rose window of painted glass, opposite to which is the large east window, of stained glass by Mr. Hudson, of London, representing the four Evangelists. The roof, the ridge of which in the nave is at a height of 44 feet, is of stained open timber work. Staffordshire tiles, laid in variegated patterns, form the pavement of the passages. Above the windows and doorways are devices, stamped on the stucco. The walls, formed partly of Bath stone, are faced with the flints of the neighbourhood: a small bell-turret is covered with red shingles, while the roof is covered with variegated tiles. The whole cost, including a parsonage-house, is about 2,700l. Mr. B. Ferrey was the architect; Messrs. Shearburn, of Dorking, the builders.

**Abingdon.**—Mr. Scott and Mr. Wilkinson, the architects, are said to have now examined into the

dilapidations of St. Helen’s church, with the view of reporting upon them. It is hinted that the committee will be advised of the practicability of restoring the building.

**Elkstone.**—The west window of the old church at Elkstone, near Cirencester, has been fitted up with coloured glass, designed and executed by Mr. G. Rogers, of Worcester. It is a four-light window. The figures of the Evangelists form the main design. The tracery of the lead presents a foliage pattern.

**Macclesfield.**—An obituary window, designed by Mr. James Stevens, of Manchester, architect, and executed by Messrs. Edmondson and Son, of that city, has just been set up in Christ Church, Macclesfield. The ground is an interlacing pattern with florid border: at the top is the Alpha and Omega; at the bottom a family shield, and on a ribbon behind it the obituary notice. There are two medallions, the upper subject being the little child in the midst of the disciples; the lower, the return of the prodigal. There are also three fanlights over the two west and north doors; subjects, “The Sower,” “The lost Sheep,” and “The good Shepherd.”

**Bacup.**—The foundation stone of a new Catholic Church, at Bacup, was laid on the 2nd inst. The style of the building is Gothic. The architect is Mr. Wm. Nicholson, of Manchester.

**South Shields.**—A new church is now in course of erection at Mile-end-road, South Shields, by the United Presbyterian congregation of Hough-street chapel, under the superintendence of Mr. Thomas Oliver, of Sunderland, architect. The buildings, *i.e.* church, school-room, and vestry, are designed, says the *Gateshead Observer*, in the Gothic style of architecture, with the characteristics of the Geometrical period. The church is cruciform in plan, with nave, aisles, and transepts, and a tower with spire at the south-east angle, with deacons’ vestry and boiler-house below. There will be no galleries, but provision will be made in case they are required afterwards. The ground floor will afford accommodation for about 500 persons. The entrance is in Ingham-street, by a deeply-recessed porch, with carved capital and arch-mould. The end windows are each four lights, and are to be filled with stained glass. The nave columns are of iron, and the arches above, which support the roof, are of wood, filled with ornamental iron tracery. The whole of the woodwork will be stained, as well as the roof, which is to be of open timber work, some portions carved. The iron will be represented as such, but painted in appropriate colours, and otherwise ornamented and moulded.

**Edinburgh.**—At a recent meeting of the City Council, a letter from the minister of Greyfriars Church was read, in which complaint was made of the want of ventilation in the church. This was attributed by Mr. Cousin, the city architect, to a refusal of Messrs. Ballantine and Allan to allow arrangements to be made in the stained windows for ventilation; but he suggested that if authorised, the edifice could easily be otherwise ventilated. The subject was referred to the Plims and Works Committee.—Notice of a motion was given at the same meeting of council, by Professor Dick, the veterinary surgeon, to the effect “that as it is now determined that the old stones of Trinity College Church shall not be re-erected, and as they have been kept at a considerable expense, they ought now to be sold, and the money placed in the bank, and the rent of the ground on which they are laid got rid of.”

#### THE BRIDGE IN ST. JAMES’S PARK.

A CORRESPONDENT writes to the *Mechanics’ Magazine* respecting this bridge as follows:—In the *Builder* for 27th June, I noticed an admirable illustration of the new bridge of Messrs. Rendel across the ornamental water in St. James’s Park, and in an article accompanying it, a description of the new bridge is followed by this remark: “It was intended originally,” says your excellent contemporary, “to cross the lake by a viaduct, but this was objected to on the score of its obstructing too much the view along the lake, and a suspension-bridge was finally agreed upon as the form of bridge least open to that objection.”

On Sunday evening last, I strolled, through the showers, along the lake, and passed the bridge in question. On approaching it, and on looking back towards it after passing it, I was astonished to observe how seriously it interfered with the view of the lake. In fact, the entire body of the water beyond it was concealed from me during my walk along the greater portion of the distance between the bridge and the palace end of the water. As I am a man of moderate height, with my eyes about 5 feet 3 inches from the ground, I fear the great bulk of the foot passengers who seek refreshment at the lake side will experience the same disappointment as I. If so, I would recommend them to reflect, as I reflected, that although their gaze is obstructed, the eyes of their Sovereign and her estimable family, looking



down from the southern apartments of the palace, will be blessed with the complete view, and will find in the bridge nothing but another and a novel ornament. How fortunate are monarchs and courtiers, and how luckless we!

The obstructiveness of the bridge arises from the close lattice-work of which its sides are formed. Had these sides been composed chiefly of rods, formed and arranged with regard to the taste and pleasure of its plebeian pedestrians, I should have seen almost as much of the cool crystal beauty as the Queen. I suppose it is now too late to hope for such gratification.

Since Sunday I have again looked at the *Builder*, and I find that if the artist had been far enough from the bridge to throw the water and not the opposite shore into the background of the picture, he would have perfectly illustrated my letter. But then the only thing visible beyond the bridge would (from the cause which I have explained) have been the Horse-guards and the heavens.

As I write with perfect resignation, you will, I hope, give place to my reflections.

A LOVER OF LAKES.

#### STABLE FLOORINGS.

PERHAPS some of your intelligent readers would advise me as to which is the best flooring for *cart horse* stables, being at the same time good and durable. There is a species of fir wood, driven in as piles, and cemented with lime: there is also asphalt, especially that of a foreign company, and used, they say, in the imperial cavalry stables of France; and there are the old bricks and dressed flags, besides, I dare say, many other sorts. Which of all, however, do your readers and writers recommend?

At the same time, perhaps they would advise me upon the best sorts of paint for the same stables, occupied by cart-horses.

EBOR.

#### Books Received.

##### VARIORUM.

THE new number of the *Quarterly* contains a discriminating article on the "Manchester Exhibition," of which the writer, with full reference to its shortcomings, says:—"It would yet be difficult to form a more instructive and interesting collection—one which, at a moment like the present, when art is beginning to be better understood and more widely studied, could afford more useful hints, and could teach more to the English public." An article in the same number, "The Internal Decoration and Arrangement of Churches," is a strong protest against the result, in a theological point of view, of the architectural teaching of the Ecclesiological (late Cambridge Camden) Society, and which the writer, by the way, erroneously designates as simply the Camden Society, an entirely different body.—The *National Review* (Chapman and Hall, publishers) has also an acute article on the "Manchester Exhibition," pointing out some of its weaknesses, the presence of many second-rate copies, want of sequence in the ancient pictures as arranged, but arriving at the conclusion that it is, nevertheless, an honour to the great industrial community which has carried it into execution. The writer of the article "London Street Architecture," in the same Review, points out that the metropolis now sees the necessity of henceforward affecting the perpendicular instead of the horizontal direction of expansion; and says,—"In this necessity lies the great hope for the domestic architecture of London, which has hitherto been wholly below contempt." This is quite true, as far as architecture is concerned, although there may be great question as to the advantage in a social and sanitary point of view. A feeling adverse to the use of lofty structures containing numerous dwellings one above the other is growing in Paris, where endeavours are being made, beyond the walls, to introduce the English mode of building small houses for a single family each. This is a point to which we may return.—"Abridgments of the Specifications relating to Marine Propulsion, Part I," forms a very interesting little shilling blue book, published at the Great Seal Patent Office, Southampton-buildings, Holborn, by order of the Commissioners of Patents. This is one of that useful series of classified abridgments now in course of publication, and of which those on drain-tiles and pipes, on the manufacture of iron and steel, on manure, sewing and embroidery, and on preservation of food, together with the one under notice, are already either published or in the press, most of them costing only 6d. each, so that they are within the means of even the humblest inventor, and enable him to examine for himself whether his discovery has ever been patented or not. Neither are they mere dry abstracts, but almost little treatises on the special subjects, with connective matter, and notes giving references to notices of the inventions in scientific and other works, and to law

reports and proceedings as to infringements of patents, &c. &c. Attached to the part under notice is an index of names of inventors, patentees, and others who have had anything to do with marine propulsion; and also an index of the subject matter itself, affording great facility of reference to the contents. These pamphlets are a most valuable and important boon to inventors, especially those of restricted means, and, besides, contain much matter of interest to the general reader.—A useful school series of "Questions on M'Leod's Class-Atlas of Physical Geography," by the Rev. T. Bowman, A.B. Vice-Principal of Bishop's College, Bristol, has been issued by Messrs. Longman, and Co. Physical geography is a most important subject—or series of subjects rather,—yet it has never obtained that attention from instructors which its varied information demands. The publication of a text book such as this must greatly tend to do away with this defect in school teaching.

#### Miscellaneous.

THE ATLANTIC TELEGRAPH.—By this time doubtless the whole of the 2,500 miles of Atlantic telegraph cable has been shipped on board the British ship *Agamemnon*, at Greenwich; and the American ship *Niagara*, at Birkenhead; and in less than a month's further time it may be at work across the whole breadth of the "big pond." The most notable feature in the cable, as it lies twisted round and round in its many folds on board the *Agamemnon*, is the fact that at every base of a second's pendulum an electric life-spark flashes through and through its innumerable coils from head to tail, so that this veritable sea-serpent may be shipped alive and well conditioned. The purpose of course is to ascertain at a moment's notice, whenever and wherever any vital injury may affect it, so as to call for immediate examination and repair. The same thing will take place while it is being laid down in the ocean, and should the electrometer fail to indicate a free circuit, the working engine, by help of which it is paid out, must reverse the process and coil it up on board again till the flaw be discovered. It had been decided to sail right off into mid ocean, and there to initiate the marriage ceremonial between the American and the European moiety, but an idea seems now to prevail that it will be better to lay the line down from the western Irish coast at once, the *Niagara's* half being joined to the half laid down in mid-ocean. The "tight little island" in which an Atlantic telegraph cable has been made, and in which a "Great Eastern" steam-ship is getting into "ship shape," is still resolved, it appears, to continue Mistress of the Ocean.

PROPOSED PUBLIC PARK AND OTHER IMPROVEMENTS AT DEVONPORT.—The military parade-ground, or brickfield, will probably be converted into a recreative ground for the public at a cost of about 500*l.* of which Mr. St. Aubyn has offered 100*l.* besides shrubs and trees. The authorities of the War Department are said to have approved of the plan, on condition of having still the use of the ground for parade purposes. New roads are also in contemplation, one 40 or 50 feet wide from the Stoke-road along the boundary-wall of the pleasure-ground in front of St. Michael's-terrace, and parallel with Tamer-terrace, to the proposed railway station at Stoke, which is to be erected on the south side of St. Michael's Church. The railway company will contribute 500*l.* towards its formation, which will nearly cover the cost. It is also proposed to form a direct road from Stonehouse-hill to the head of Fore-street, for the convenience of the military from Plymouth and Stonehouse going on guard at Keyham and Bull Point, and also for a ready means of access to the general military parade-ground,—the brickfield. The plan for constructing a new road at Stoke Church, leading to Fellowes-place, is prepared, and the work will probably be commenced shortly. It is to be a carriage road, about 40 feet wide.

DISCOVERY AT POMPEII.—Connected with the baths near the Stabian Gate, a Naples correspondent of the *Athenaeum* announces the discovery of a vaulted chamber, with a species of basin six palms in depth: the use of this chamber rather puzzles the Neapolitan antiquaries, although it is thought probable it was a Fulonica or public washhouse, the ancient Greeks having washed their clothes by treading on them, as is sometimes done in Scotland and elsewhere at the present day. We would thus find washhouses associated with baths in ancient as in modern times. At one side of the entrance to the chamber there are two leaden spouts in the form of the beaks of geese. On one side of the apartment are four very small chambers, each with a small bath. An inscription in another room adjoining records the restoration of the baths by the Ediles, from money assigned by the law for the public games and for monuments, thus showing that the ancients had "a budget" as well as the moderns.

OPENING OF THE ROYAL WELSH SCHOOL, AT ASHFORD.—The new school, at Ashford, Middlesex, belonging to the Society of Ancient Britons, of which we gave illustrations some little time since, was opened last week with the usual ceremonies by the Prince Consort. The building is from designs by Mr. H. Clutton. It will contain 130 boys and 70 girls. The total cost of erecting the building was 15,000*l.*, 14,000*l.* of which, it is said, will be covered by the sale of the old building in Gray's Inn-lane, which was purchased by a carriage manufacturer. There are 13 acres of ground attached to the new school, two acres of which will be laid out for the instruction of the boys in cultivation. There will also be a small plot of land set aside for the girls to cultivate as an amusement. The foundation-stone was laid in August last.

THE SOCIETY OF ANTIQUARIES OF SCOTLAND.—A meeting of this society was held in its hall, George-street, Edinburgh, on the 20th inst. Mr. Cosmo Innes in the chair. Mr. Stuart reported that he had received a communication from the secretary of the Board of Manufactures, announcing that the Board had allocated the gallery and two octagon rooms in the Royal Institution, presently occupied by the Royal Academy, as suitable apartments for the society's museum, in terms of the Treasury minute of 1851. Mr. Stuart also reported that he had received a communication from Mr. Farrer, announcing the resumption of his diggings in Orkney. Dr. Smith presented some remains found near a standing stone in Yarrow, sent to the museum by Mr. Currie, Darnick. Amongst the papers read was a "Notice of an Ancient Oration on the Island of Inch Colm, with drawings." By J. Y. Simpson, M.D. F.S.A. Scot." in which Professor Simpson maintained that this oratory was of the same character with that of St. Colomba at Kells, and others in Ireland.

PROPOSED HOSPITAL FOR DISABLED MARINERS.—It is proposed to erect an hospital for master mariners, mates, and seamen of the mercantile marine; a proportionate number of each class, being married, without children living with them; to be under the government of the committee of the Shipwrecked Mariners' Society, incorporated by Act of Parliament, 13th Vict. with power to build asylums for seamen, and hold land for the purpose; the society having, at a general meeting held on the 29th ult., voted 5,000*l.* in furtherance of the proposition. A very large and influential meeting was held on 17th inst., in the Egyptian-hall, Mansion-house, London, for the promotion of the same object (the lord mayor in the chair); and resolutions were passed, one of them to the effect that a building be raised on the banks of the Thames, within the port of London, to be called (with Her Majesty's permission) "The Royal Hospital for Worn-out and Disabled Merchant Seamen;" that the said building be prepared for the reception of 500 persons, selected from the different grades of the mercantile marine; and that it be commenced as soon as there is a fair prospect of 50,000*l.* being subscribed.

THE SCOTCH INDUSTRIAL MUSEUM AT EDINBURGH.—Dr. Wilson, director of this Museum, has presented his annual report to the Department of Science and Art. In the outset the reporter states that the progress made during last year will best appear by considering separately the Museum, the Laboratory, the Chair of Technology associated with them, and the incidental relation of all three to the interests of the public. This he does, showing that considerable advances have been made in the various departments. The Museum has been largely enriched, since the date of last report, by donations and purchases. The Duke of Argyll has presented examples of the granites and building stones occurring on his estates. The Duke of Buccleuch has authorised the receipt by the director of specimens of the minerals wrought in his lands, and of the tools with which they are worked; and a series of the lead ores and products of the Wanlockhead mines and works is nearly completed. The collection of building-stones, commenced last year, has been increased by a gift from the Museum of Practical Geology, Jermyn-street, London, of their duplicate specimens, and by donations of interesting examples from various individuals.

THE ORDNANCE SURVEY.—On a motion by the Duke of Buccleuch, the Lords have agreed to pray Her Majesty to appoint a Royal Commission to inquire into the whole subject of the National Survey, and as to the scale or scales on which it should be made and published.

DESTRUCTION OF A BUILDER'S PREMISES IN SOUTHWARK BY FIRE.—On the 15th inst., the premises belonging to Messrs. Wilson and Co. of Great Suffolk-street, Southwark, were destroyed by fire. The whole of the saw-mills, carpenters', and joiners' shops, stabling, and several piles of timber, were destroyed, and nearly a dozen houses adjoining were more or less damaged by fire and water.



**REDBILL.**—A public meeting of the Conservative Land Society was held last week, at the Infant School-room, Redhill, Reigate, to take into consideration the allotment of the Redhill estate of the Society, situated close to the railway station. The Viscount Ingestre, M.P. took the chair, supported by the Rev. Dr. Worthington, Mr. Morgan, surveyor, and Mr. Gruneisen, secretary to the Society. Some objection having been taken to the plan, on the ground that the allotments were not sufficiently small, the deputation explained to the meeting that the Society's operations were not exclusively confined to provide plots for low-class houses, but were extended to villas of the first class, and that the Redhill property did not admit of being apportioned in small lots.

**ST. MARY'S (R.C.) CHURCH, ATHLONE.**—The foundation-stone of a new Roman Catholic church has been laid at Athlone. The edifice will be erected on an elevated site, commanding a view of the Shannon. The plan and design have been supplied by Mr. John Bourke, the architect of Longford cathedral, and the hospital of the *mater misericordie*, Dublin, now in course of erection. The execution of the design of the Athlone church has been entrusted to Mr. John Molloy, of Athlone, builder. The style selected is that of the first period of English ecclesiastical architecture, slightly approaching towards the Decorated, particularly in the chancel and the upper part of the tower. The plan is cruciform, with north and south aisles, opening into the transepts, and divided from the nave by arcades of pointed arches, supported on circular columns of Wicklow granite, on either side of the high altar, and side chapels opening also into the transepts and chancel through lofty pointed arches: four arches of stone will connect the chancel and transepts with the nave. At the northeast end will be the sacristy and porch. The chancel will be lighted by an eastern window, filled with tracery of geometric design, and will contain sedilia and a piscina, and be separated from the side chapels by open screens in wood. On the south-west angle of the church will be the bell tower. The upper part of the bell tower will be surmounted by a spire pierced with lancet openings, and by a Medieval cross, 170 feet above the surface of the ground. The transepts are designed to be lighted by triple lancets; but it is intended, if the funds permit, to substitute wheel windows filled with stained glass. The west gable will be decorated with an entrance doorway, and a window in five compartments, only three of which will be filled with glass, the blank recesses being intended for statues. The roof timbers will be exposed. The windows of aisles and clerestories will be double lancets. The extreme length of the church will be 140 feet; the interior breadth across nave and aisles 56 feet, and the height to top of gable crosses 70 feet. The material will be limestone of the district.

**PUBLIC DRINKING FOUNTAINS.**—Notwithstanding the reiterated endeavours of the press, and particularly of the *Builder*, to obtain for the metropolitan public an increase of public drinking-places, both for man and beast, we regret to say that there is still a sad want of such conveniences. Pumps there are, in abundance, but they are carefully kept locked, or deprived of their handles, for fear the public should obtain a mouthful of water without payment. In every Parliamentary grant of privileges to water companies there ought to be a clause compelling them to provide such public accommodation. The necessity for it is somewhat notably manifested at St. Paul's Church-yard, where a poor woman appears to find it worth her while to devote her time to the supply of clean glasses to the public at a public pump well. Would it not be worth the while of water companies who grudge the poor so cheap a refreshment to erect a number of fountains in thoroughfares, and let them at a small rent to just such persons as this woman, with a limitation of charge to a halfpenny, or a farthing, for each separate supply? Mr. Melly, of Liverpool, has added fourteen drinking fountains to those he had previously supplied at Liverpool. On the 7th inst. at one of these, no less than 2,500 persons availed themselves of Mr. Melly's excellent provision. The *British Workman* states that Birkenhead and Raucorn are following the good example of Liverpool, and adds, "we trust that in London and many other places gentlemen will be found with hearts as large and purses as heavy as Mr. Melly's, by whom water for the people will be provided by means of these public drinking fountains."

**THE KILKENNY ARCHEOLOGICAL SOCIETY.**—The July meeting of this society was held in the Tholsel, at Kilkenny, on the 1st inst., the Dean of Ossory in the chair, when fourteen new members were elected. Various donations were announced, and articles of interest exhibited, including some rubbings of inscriptions found at St. Mary's Church, Clonmel; and after some other procedure, a paper, by Mr. T. L. Cooke, was read, describing an ancient wayside cross slab at Drisoge, in King's County.

**M. LASSUS, ARCHITECT.**—We hear with great regret of the death of M. Lassus, who was the architect of the restoration of the Sainte Chapelle, at Paris. This sad event took place at Vichy, after a very short illness. It was M. Lassus, who, with M. Viollet le Duc, undertook the restoration of the old cathedral of Paris, Notre Dame.

**BILSTON SCHOOLS, COMPETITION.**—The committee for the erection of St. Leonard's National Schools, Bilston, have selected the designs of Messrs. Briggs and Everal, of Birmingham, submitted in competition.

**THE CARPENTERS' STRIKE AT WORKINGTON.**—The carpenters at Workington have returned to their work at 24s. per week, the amount offered to them before the strike, which has lasted six weeks.

**ART-TREASURES EXHIBITION MEMORIAL.**—The members of the Manchester Academy of Painters, headed by Mr. J. A. Hammersley, as chairman, have addressed a letter to the citizens of Manchester, calling upon them to contribute to a public subscription for the purpose of procuring portraits of the executive committee of the Art-Treasures Exhibition, to be placed as a memorial of the Exhibition, in the permanent gallery of the Royal Manchester Institution.

**ST. GERMAN'S CHURCH, CORNWALL.**—I send you a rough sketch of a capital from St. German's Church, Cornwall, which appears to me interesting from its strongly marked classical character [the angle terminates in a well-developed volute]. The church itself was originally a large edifice of the semi-Norman period, but the whole of one aisle and the chancel have fallen down, and a great portion of what remains are additions, in the Decorated and Perpendicular styles. The porch is very fine, consisting of a doorway of 6 feet span, surrounded by seven semicircular arches, richly ornamented with chevrons and other characteristic ornaments; the arches supported by pillars and pilasters, enriched with chevrons alternately. The width of the seven arches is 7 feet 3 inches, giving for the total span 20 feet 6 inches: the depth or recess of the arch is 5 feet; and as the face of the porch projects beyond the front of the building about 4 feet 3 inches, the arches have hardly that appearance of richness in depth which their recess should give. The centre doorway, of 6 feet span, has a rise only of about 2 feet 7 inches. This produces a great flatness in the outside ridges. It was caused no doubt by a sinking of the arch in the first place, owing to want of proper weight on the haunches. The porch itself is a good deal weathered, but some massive Norman piers (semicircular), inside, surmounted by lancet arches, are as fresh as when first put up. The stone is a green trap rock, common in this part of Cornwall, portions of which are beautifully variegated by red marks; but unfortunately it is precisely such portions which most rapidly decay, the red marks proceeding from the presence of iron. The porch is at the west end, between two towers, inside the northern of which is the capital referred to. Externally this tower is carried above the roof in an octagon, the southern being finished in a square, like the original Norman basements. As the date of the porch and Norman part of the church appears to be the twelfth century, it must have been erected after the time St. German's was the seat of the Cornish bishopric.—A. H. PATTERSON.

## TENDERS

For the Medway Union, Chatham:—

	Building.	Schools.	Total including Fountains, Wells, &c.
	£.	£.	£.
Cobham, Gravesend .....	20,809	4,517	30,166
Wood, Gravesend .....	20,954	4,706	29,500
Wilson, London .....	19,540	4,385	28,121
Sellworthy, Gravesend .....	19,531	4,589	27,936
Smith, Ramsgate .....	18,152	4,297	27,481
Dethick, Hackney .....	19,011	5,220	28,258
Moxon, Dover .....	18,806	3,492	26,319
Forrd and Sons, Rochester .....	18,685	4,212	26,385
Meyers, London .....	18,193	4,149	26,422
Spicer, Strood .....	17,789	3,902	25,500
Naylor, Rochester .....	17,765	3,984	25,480
Stump, Brompton .....	17,390	3,916	24,300
Kirk and PARRY, Chatham .....	16,844	3,892	22,504

(All the tenders being above the estimate (10,000) of Messrs. Peck and Stephens, whose designs were selected in competition, the guardians refused to accept any of them.)

For rebuilding three houses in Tottenham-court-road, for Mr. Mayles. Mr. Raggett, architect:—

Laurence .....	£3,098 0 0
Lucas .....	3,016 0 0
J. Anson .....	2,994 0 0
Trollope and Sons .....	2,978 0 0
Piper .....	2,967 0 0
Downs .....	2,930 0 0
Willson (accepted) .....	2,791 0 0
Pollock and McLennan .....	2,887 0 0
Brass (too late) .....	2,800 0 0

For residence at Abbey Wood, Kent, for Mr. Van Voort. Mr. Henry Jarvis, architect. Quantities supplied:—

Ford and Sons .....	£1,909 0 0
Marsland .....	1,940 0 0
Downs .....	1,758 0 0
Lucas, Brothers .....	1,734 0 0
Willson .....	1,720 0 0
Patman and Fotheringham .....	1,675 0 0
Crawley .....	1,567 0 0
Tarrant .....	1,550 0 0
Taylor and Buckley .....	1,549 0 0

For rebuilding warehouse, 72, Watling-street, for Mr. Southgate. The same architect. Quantities supplied:—

Gannon .....	£1,700 0 0
Crawley .....	1,690 0 0
Cannon .....	1,699 0 0
Taylor and Buckley .....	1,669 0 0
Tarrant .....	1,647 0 0
Downs .....	1,480 0 0
Peake .....	1,479 0 0
Willson .....	1,461 0 0
Carter .....	1,439 0 0

For additions to warehouse, Creed-lane, Ludgate-hill, for Messrs. Ellis and Everington. The same architect. Quantities supplied:—

Downs .....	£3,830 0 0
Cobitt .....	3,822 0 0
Brass and Son .....	3,698 0 0
Gannon .....	3,727 0 0
Lucas .....	3,471 0 0
Lucas, Brothers .....	3,188 0 0
Lawrence .....	3,140 0 0

For erecting two houses on Tower-hill. Messrs. Willshire and Parris, architects:—

Nixon .....	£1,197 0 0
Brass (too late) .....	1,175 0 0
Patman and Co. .....	1,165 0 0
Laurence .....	1,142 0 0
Hill .....	1,132 0 0
Trollope and Sons .....	1,113 0 0
Willson .....	1,099 0 0
Gannon .....	1,097 0 0
Higgs .....	1,075 0 0

For works at Belle Sauvage-yard, for Messrs. Petter and Galpin. Messrs. Tress and Chambers, architects. Quantities supplied by Mr. G. Raggett:—

Lucas .....	£2,127 0 0
Nixon .....	2,097 0 0
Piper .....	1,894 0 0
Macey .....	1,825 0 0
Brown .....	1,757 0 0
Trollope .....	1,727 0 0
Perry .....	1,695 0 0
Coleman .....	1,690 0 0

For alterations and improvements at Messrs. Hampton and Russell's, Leicester-square. Mr. John F. Mathew, Reigate, architect. Quantities supplied:—

Downs .....	£1,493 0 0
Gannon .....	1,497 0 0
J. and C. Hanson .....	1,484 0 0
Patrick and Son .....	1,455 0 0
Laurence and Sons .....	1,390 0 0
Dennis .....	1,318 0 0

(Tenders did not include shop-fronts.)

For finishing seven houses at Stratford:—

Sturmeay .....	£1,321 17 9
Stevenson .....	1,100 0 0
Cobham .....	1,015 0 0
Woolgrove .....	980 0 0
Watt and Co. .....	934 0 0
Wood .....	824 0 0
Coch .....	857 0 0
Heard .....	850 0 0
Dennis .....	850 0 0
Willson .....	825 0 0
Tubby .....	817 19 0
Showell .....	798 0 0
Rivett .....	783 0 0
Adams and Beckwith .....	783 0 0
Bennett .....	794 0 0
Stone .....	754 0 0
Ellis .....	779 0 0
Cave .....	765 0 0
Leggo .....	760 0 0
Reader and Mitchell .....	738 0 0
Saunders .....	720 0 0
Smith .....	698 0 0
Rose .....	690 0 0
Riggs .....	699 0 0
Sutton .....	679 0 0
Bleakard .....	679 0 0
Hill .....	676 0 0
Knowles .....	675 0 0
G. R. Saunders .....	670 0 0
Ford .....	669 0 0
Cross and Whitworth .....	655 0 0
Single .....	650 0 0
Hole .....	649 0 0
Cooper .....	630 0 0
Ingersent .....	595 0 0
Chesher .....	560 0 0
Skilton .....	482 0 0

(This curious list of tenders was received in reply to advertisement No. 1,100. I think the list suggestive, 1st, that the building trade must be exceedingly slack; 2nd, that there are others besides builders in the trade, or surely there would be less contrariety in their estimates; 3rd, that an architect's remuneration should be regulated not by the estimate of the builder, but by his own.—A. B.)

## TO CORRESPONDENTS.

O. J.—W. M.—R. M.—T. D.—J. M.—A. Prisholder.—J. J. M.—J. P. W.—Edinburgh. B. W. S. N. under our immediate looker-on. P. F. N. V. a little too slow for our quiet column.—W. J. P.—J. E. T.—F. C. F.—A. Competitor.—J. M. M.—H. and F. C. C.—H.—D. N. (we are unable to assist).

\*Books and Addresses.—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.



# The Builder.

VOL. XV.—No. 756.

**F**URTHER examination of the models for the Wellington Monument,\* now being exhibited at Westminster hall, has afforded us additional evidence of the ground of the opinions put forth in our last article,—especially as to the fact of sufficient technical or manipulative skill amongst our sculptors, yet conjoined with deficiencies—detri- mental to the power of expres- sion through the higher fields of their art. The doctrine of division of labour as necessary to pro- ductiveness, has been followed prac- tically, so far as to lead men to trammel their own thoughts, and to assume the existence of demarcations having no foundation in nature. No man has been able to map out the domain of any asserted branch of science or literature, as a distinct subject of study; and the pursuit through separate professional callings, of what still are called the *sister arts*, should be in some degree suppo- sitions,—though the arrangement is essential for convenience and expediency. All this, it is true, we may have ventured to urge before the present occasion: at least, we have done so as to architecture,—though not forgetting that there are qualities peculiar to each of the arts—*media* of expression, which they never happily imitate from one another. What it is now im- portant to bear in mind as to the present case is that, if one of the arts can in works of humble pretensions, trust to itself, co-opera- tion is absolutely necessary to produce works of the highest class,—and whichever special art be the first intention. In short, we have apprehended that lately, architecture has been neglected as a branch of study by sculptors; and that the philosophy and universal principles of art—which have been so much under discus- sion in writings on architecture—have not re- ceived attention generally. The want both of the special and the general aid to the sculptor, manifests itself now when a work of the first class is really required. To produce the highest art, the mere craftsmanship of the statuary is not enough; and the want is not supplied by getting from an architect a design for a pedestal to the statue or group of figures. This, how- ever, or something like it, has been done in several works by sculptors of eminence in the case of the present competition, as it had been previously, in cases within the knowledge of our readers. A work intended to be mainly sculptural, ought, in our opinion, to be designed throughout by a sculptor-artist—one having so much knowledge of construction and archi- tectural principles as to be independent of assistance. The result could then be truly a *monumental work*; and originality of conception would accrue by which the field of architecture itself would be expanded.

Under the disadvantages as apparent in many of the works exhibited, we are not surprised to find that the merit which we have discovered has not been the subject of general remark. Indeed, as to grouping, and architectural de- tails, the great majority of works in the col- lection exhibit no advance on those of the last generation of artists. We have endeavoured to suggest what is mainly wanting to complete the excellence of the school of British sculp-

ture. We have naturally given less attention than others to the question of allegory.

We differ from some who would exclude this element from the resources of sculp- ture. Unless we were prepared to admit the propriety of statues painted in semblance of natural figures—which supposing them to be justified by ancient precedent, we should consider rather as belonging to a distinct branch of art—we should hold that the modern art of sculp- ture, like, indeed, all *truth*—is one—that is addressed to those having some educational faculties for judgment. Representation, there- fore, which would seem to be the alternative, is not the object of the highest department of the art. Such highest art requires capacity, and we may say time and attention, in the observer, commensurate with the thought given in the production of the work itself. The work must, indeed, have its intention expressed by no means obscurely, or under the guise of types and symbols—conventional with sculptors, but not readily apprehended or borne in mind by people of ordinary intelligence. We would exclude utterly many of the personified attributes and sensations—as in many of the works at West- minster Hall—which no person whatever would recognise without the written descrip- tion. We are not prepared, however, to reject all conventional representations of the virtues, or of Peace and War, or of Britannia, or other actual or ideal things—where the inten- tion can be made apparent by familiar emblems and accessories. So that the personification is not to be mistaken for a represented natural figure, can be itself understood, and has given to it some new beauty of form or position, there can be no reason why sculpture should reject what is the real material of it as an art, and is the vehicle of its poetry in expression. Allegory has got into contempt—first, from the use of the Pagan mythological forms of it in Christian monuments; secondly, because the author of a work has forgotten that art should speak to the people, and that the expression should be at least perspicuous; and, thirdly, because the conventionalities and mere statuary work have been put forth without mind—without the real art. If the observer can only follow out the chain of ideas, he will then realize that emotion which is the object of art, and which cannot be anticipated from simple representative sculpture; and he will experience all the higher gratification, from the feeling of having passed through the intellectual process.

Again we say that we would not recognise the slightest obscurity in the expression and sense. It may be difficult to avoid this: but the grand aims of art must ever be difficult of attainment. What is clear and simple in ex- pression to others, must often be the result of the utmost intellectual labour. But we see no reason why inscriptions should not be used, as names or mottoes, not in substitution for the sculptor's art, or so as to be in anywise obtrusive in themselves, but to facilitate observation. In a work making some use of the archi- tectural element—as we have tried to show, monu- ments of the first class must do—inscriptions could be introduced with advantage—to the general effect, as to the whole result. This is shown, indeed, in the case of some of the best works in the collection—those few in which are recognised all the points of importance that we have been advancing.

It was not to be expected that any very large proportion of the models sent in, should realize the unusual conditions of a Wellington monu- ment. In several works, as it will have been understood, the figures are in themselves good, whilst the general conception is tame or else obscure. Others merely recognise our several conditions, whilst not giving the due importance to some of them. There are, however, three or four works—mentioned last week—which,

we think, deserve particular notice, as truly coming under the head of monumental sculpture. No. 41, which bears the motto (quoting literally), "The man whose exploits and labours have been recovering for many peoples peace and liberty, deserves to be rewarded with an im- mortal honour," is one of the best, as we have said, in the collection, so far as it exemplifies the due relative proportions of the sculptresque and architectonic elements. The principal figures, however, are inferior in design and modelling to those of some other works; the mailed knights, placed as accessories of the pedestal, are dimi- nutive as compared with the figures of Well- ington and Peace above; and the structural part itself of the design fails—inasmuch as it is not apparent in the front view, that the truncated obelisk, which bears a figure of Britannia, re- presented holding a wreath over the head of the duke, has a sufficient support on the pedestal. The architectural details, and the general grouping, are, however, especial merits of the work, besides that of due prominence of the sculptresque, which we have already noticed.

In No. 12, which has the motto, from Shak- speare—

"Tis not my profit that doth lead mine honour;  
Mine honour it is."

we regard the *architecture* as tending to undue prominence. There is, however, so much that is clever and good in the details, conjoined with much that is beautiful in the groups of three figures, and in the single figures, that we should regret to lose sight of the design with the closing of the exhibition. With all the demerits, the Wellington monument, if erected from this design, would, we think be a fine work of art, and an advance in memorial sculpture in our country. The ornament in the tympanum over the arch, on each face, formed of trophies and a coat-of-arms, is unequal to the rest of the work.

The eminently valuable characteristics of No. 68, which has the motto, "Integritas," are to be found in the conception of the sculp- ture, which is poetical and allegorical. When this part of the design is looked into for a few minutes, and the expression of thought is gathered, the architectural element is no longer seen unduly prominent, whilst the idea of the build- ing with no interior, like that once called by the strange name of the Lanthorn of Demosthenes, vanishes.\* Perhaps the comparison was not likely to have occurred to any one but an archi- tect; and there is no resemblance between the model and the monument at Athens, excepting in their being both circular as to the general plan, and being without apertures, for entrance or light. The model, the author says, "is left to tell its own tale;" no written "argument," or description, is offered. In the allegorical intention of the sculpture, the leading thought is clear and beautiful. This is expressed by the figure of Peace (represented with a rayant crown, and wings tinged with gold) on the *domed covering*, as we called it, of the monu- ment, but on what is rather designed to rep- resent the globe, over which the light of Peace is diffused in golden rays from the spot whereon she descends. The domical or globular feature is encircled by the cornice which terminates the structure of the monument, and which is of novel character, enriched with lions' heads, and inscribed with the names of Wellington's chief victories. The main portion of the monument is divided into four fronts or compartments by winged figures on pedestals, and by sedent figures below; and the whole is elevated on an appropriate pedestal, enriched, like other parts of the work, with reliefs and inscriptions, carrying out the general illustration of peace

\* The Choragic Monument of Lysicrates, was not in fact, as we called it, "a solid mass;" but the inter- columns were all filled in; so that there was no door or window.

\* See p. 416, ante.



and war, and the commemoration of Wellington in his two great spheres of action. The principal front has a statue of the Duke. Towards the head, two of the winged figures extend their arms, holding gilt wreaths, whilst in the other hand, each sustains a sword. The pedestals are inscribed with the words "Honour," and "Duty." The corresponding figures in the opposite front have the attributes of Peace, and under them are inscribed "Firmness," and "Truth." On this side of the monument, in place of the statue of the Duke, there is a seated figure of Justice. Below it is an alto-relievo of Wellington addressing the House of Lords, whilst in the corresponding position on the front is a finely-executed representation, in a similar character of relief, of the battle of Waterloo. Below this is a simple panel, with a work in low relief, expressive of the simultaneous announcement of Victory and Peace. In the corresponding panel at the back, Commerce and Industry, with Mechanical Science, are represented in active operation. This sort of contrast and variety as to the sides of the monument, and as to the sort of rilievo, is observed throughout. Thus, at the ends, one of the rilievos represents the field after the battle, and the opposite one reapers at work. Of the sedent figures at the angles, that of War is finely conceived, and the allusion to letting "loose the dogs of war" is well expressed. The thinking figure under which is written, "The prudent are crowned with knowledge," is excellent in design and treatment. An inscription in a prominent position gives the words in the Duke's despatch of the 19th June, 1815,—"Believe me, nothing except a battle lost, can be half so melancholy as a battle won." On the whole, we consider this work has more of the poetical requisites of monumental sculpture than any other in the collection. It might, perhaps, have been better had the architectural or rather structural element been subsidiary instead of prominent. The winged and seated figures, however, are not quite so plain in their personification as we should have desired them; though now they excite thought—like those on the Portland Vase, to which have been given one or two different renderings. The meaning of some of the figures is obscured rather than popularized by the inscriptions under them; and these might well be reconsidered. To be understood, a work of art into which allegory enters, must have its personified virtues or qualities, such as may stand marked in a character: it should not attempt minute psychical definitions. Also, to be understood, the language of the allegory must be strictly logical. We are not certain that the author of No. 68 does not intend distinct personifications of Integrity and Truth. The design, however, as we have shown, has great merit.

It should not be forgotten in judging of the collection, that whilst competitors do not by any means necessarily, call forth the efforts of the leading artists, they are very likely to excite delusive hopes amongst the incompetent. This is the only explanation that occurs to us for the contribution of many works, which have the worst faults attributed to the monuments of Westminster Abbey, and are altogether behind the standard of ability of our chief sculptors. We would show in what we consider these last are still wanting. But, how is the presence of the works just referred to, to be explained?

There is a very large class of persons engaged in the production of cemetery monuments—in which art of the lowest grade has long prevailed; and there are a considerable number of others who are able to carve or model in some manner for articles of furniture or decoration, but who are scarcely to be called sculptors. This would account for the exhibition of several models which, without mention of execution, are in design what we never expected to see again. They resemble the works in the Abbey more nearly than we might have deemed possible, after the little that we have had lately of Roman costume, and of that sort of conventional personification which is supplied without artistic grouping, and new conception or thought. The circumstance shows that bad works are permanently injurious: they are referred to as models, simply because of their number or prominence.

The real artists of the day have abandoned the lifeless mannerism of works that had brought the true art of sculpture into contempt, and through which allegory has been forbidden, unmindfully of the conclusion that would cast aside the "Faery Queen," and some of the most beautiful conceptions in art and literature. Influenced by the general demand for portrait sculpture, and seldom engaged on buildings or grand public memorials, our sculptors have not through their own works corrected the vicious example of those who preceded them.]

We have learned particulars of exertions that have been made by working men, in which we know not whether to express our admiration of the perseverance by which their models were produced without the common tools and ordinary modelling and casting processes, or the regret that so much should have been wasted merely to gain a lesson of fortitude. It is well to feel that any man may attain to eminence in any calling; but the odds are in favour of those who have had the start, and have never dispensed with known appliances, or consecutive and gradual steps, or with the best available means of instruction and example.

But on no supposition can we account for the exhibition of the work which first meets the eye (No. 1) in the collection, "The Wellington Star Monument." A production so completely destitute of art, it has never been our lot to encounter. This one work surely will not be ascribed to an artist, British or Foreign. Proceeding with our notice,—No. 6, with the motto, "Wellington fortis viri sapiensque," exhibits a group of Wellington delivering his sword to Britannia. There are four figures seated on the pedestal. There is little art of sculpture or architecture in the composition, though it is one which has some pretension by its dimensions and mass.—No. 7, "Beatus ille qui mercede palmam onusque tulit," before noticed, is like many of the models, better in its accessory figures than as to its principal figure and centre in the composition.—No. 9, is a foreign production, having the motto—

"Uno dei due  
Duri illustre vittoria andrò superio;  
Il cimento è comune, ed avrò speso  
Che morte incontra chi di darla ha speme."

and displays less merit than is to be found in several English works. There are, as in other cases, tolerably good sedent figures on the lower pedestal, but the principal figures are almost absurd.—The author of No. 10, "Arno," also a foreigner, believes that the monument should be simple in its main lines; and he, therefore, gives architectural details in which we see only poverty of thought. Wellington is habited in the toga, and is led by the hand by Victory—Peace kneeling.—No. 11, the Renaissance tomb, has the motto,—"Non a caso è virtù angì è bel Parte."—No. 13, the coloured and gilded shrine over a recumbent figure and tomb, has the motto from Richard III. :—

"Death makes no conquest of this conqueror;  
For now he lives in Fame, though not in life."

There are some good details in this work, but much injured in effect by the want of sufficient care in putting on the colouring and gold.—No. 16, with the device of three crosses, is a curious design, which is all pedestal, except that there is a figure of Fame on a pedestal of a much smaller size, on the lower pedestal. This lower one is decorated with arches and columns, and rilievos of lumpy figures, in marble and bronze.

—No. 17, "Spero Meliora," presents the Duke as "a central figure in English history," &c. This the artist accomplishes by having a recumbent figure in bronze on a pedestal, around which stand figures of some of the principle "celebrities."—No. 18, "I know of but one art," is a model for an Elizabethan kind of monument, for bronze, with a recumbent figure and an equestrian statue at the summit. It would reach, we think, to not less than 40 feet in height. There is some vigour in the groups which are introduced at the ends, of Truth overcoming Fraud or Falsehood, and of "Valour with Cowardice at her feet."—No. 20, "Finis Coronat Opus," is probably the best of the simple statuesque monuments. Wellington stands on a plain pedestal, round which ar

good figures of Europe, Great Britain, India, and Ireland.—No. 21 bears the inscription, "A design in clay resembles life: a stucco copy resembles death: the execution in marble, however, is the resurrection of the work of art." It consists of a group of six figures on pedestals. The latter, we may remark, exhibit one of the mistakes which we have often found, the mouldings giving the appearance of badly designed joiner's work. The figures of Wisdom, Strength, War, and Peace, with Britannia in the front, have considerable merit.

No. 22, which is inscribed with a motto from "Dante—Di quell' umile Italia," has a figure of the Duke, on a pedestal, round which are sedent figures of Britannia and India, and two others. This part of the monument has some merit of treatment; though no greater invention than just the moderate quantity, which, as it will have been apparent from our notices, is to be observed in a considerable proportion of the models. The sculpture in No. 22, however, is placed on a high pedestal of most tasteless character. It has a Doric entablature, with cannon in place of columns; and cannon balls are heaped around. All these "decorative" features have a profuse application of gilding. We have no evidence certainly in this competition that good art is to be procured necessarily from the continent; and as in the case of the competition for the Government Offices, we can look to Italy only to feel how low she has fallen. The voice of Dante speaks, but cannot restore. Is it liberty alone that she needs to revivify the dead—the body which is all that she offers in place of the living art?

No. 26, "I have done my duty,"—a tomb and figures, open to several objections which we offered to works of the class, and to those in which unity of thought was not observed, is clearly double the scale intended for the models; and ought to have been excluded, considering that in other cases models with accessories which would have overstepped the limits of the space shown on the lithographed plan, were denuded of their additions before the opening of the exhibition.—In No. 27, "Immer Strebe zum Ganzen," mentioned in our last, the commonplace treatment of the statue with four sedent figures on a lower pedestal, is much re-deemed by the good proportions of the monument and its parts, and by the attitudes and effect of the figures individually. The coloured materials we have spoken of. The lower pedestal of Peterhead granite has mouldings and rilievos in bronze. This monument would reach to a height of about 34 feet. There seems to be considerable difference of opinion, amongst the authors of the works of the better class—whether a low monument or one coming to above the springing of the arch, would be best suited to the building. Experiments might be tried at very slight outlay, in the cathedral. We hear that one or more of the models were accompanied by an enclosing arch. This it was not thought proper to have exhibited.

No. 29, apparently by the author of No. 16, already noticed, has an equestrian statue of Wellington in bronze, planted on a rock. In the lower portion of the monument are a number of figures—to be in part marble, and in part bronze.—In No. 30, her Majesty is represented "mourning the memory of the counsellor, the hero, and the friend." A draped urn, and the British lion are amongst the accessories. We should scarcely do our duty were we to pass by these miserable pretences for sculpture. Let the real artist look to it: he must do more than he has yet attempted beyond skilful modelling in portraiture, or the commonplace and mindless presentation of mere allegory; he must set free new currents of ideality, and infuse new thoughts into the marble and bronze. The misfortune is that attempts—such, for example, as No. 31, where Wellington is laid out on a draped car drawn by lions, and attended by Britannia, attract attention,—as though the object of a visit to Westminster Hall, were to be tickled with such puerilities, and not to have the more intellectual and dignified sense impressed by the works which may be found there,—such as are real works of art, if still sometimes showing that British sculpture is, like architecture, in a peculiar stage of transition—yet one which is hopeful as to



the future.—No. 32, "Alpha," is one of two works by the same author, which surely cannot deserve what has been said in favour of them. In this one, Wellington is shown attended by Peace and War—Peace proclaiming to Europe that throughout the victories of her hero, Britannia is still triumphant. Britannia is drawn through the sea, in a car, around the base of the group. In the other work by the same hand (No. 35) the Queen, Lords, and Commons—the two latter represented by figures robed and wigged—are paying a tribute of respect to their hero, whilst Peace and War are raising a trophy to his memory. The Queen is seated in front, and is pointing up to Wellington, who stands on a pedestal above. There is, doubtless, something to admire in the separate figures in this latter work. But the idea, like others, is not removed from common-place; and further, the endeavour to express the raising a monument, as part of the real monument, were better, we believe, not made. In the other model (39), there is attempted a complicated kind of action, which belongs essentially to dramatic art, or which, in sculpture, must generally fall where there are allegorical figures. The aim should be, we think, to steer—narrow though the channel may seem—between, on the one hand, portraiture and representative sculpture, or common-place allegorical figures without action; and, on the other, that combination of allegory with dramatic action, which essays to express what is beyond the limits of the sculptor's art. Whereas, by a mere connected sequence of thought suggested by the allegorical figures—somewhat separated from one another, and grouping into one whole by the aid of architectural mass or details; and with the episodes, which may be expressed through rilievo and ornament, we believe a more complete result can be actually attained. The real difficulty, as we have said, is to make due use of architecture, and yet present a sculptural character predominant. Of the two works last named, one makes no use of architectural features, and the other attempts them only without invention: whereas the work which above, we have felt deserving of much attention, would probably be deemed too like a structure in its general outline. The aim of the artist should be to present something which can be understood at once—though to aid and leave scope for the observer to become impressed with further sensations of poetry, received through the medium of his own consecutive thoughts.

# THE TOWER OF LONDON AND THE MIDDLESEX ARCHEOLOGICAL SOCIETY.

THE members of the Middlesex Archaeological Society, and their friends, met in force on Tower-green, on the 21st ult. as arranged. After a few words from Lord de Ros, in which he alluded to the changes which the Tower had undergone since the fire, of about fifteen years ago, and stated that the most anxious desire of all the authorities was to preserve inviolate the original features of the edifices committed to their care (an assertion not altogether borne out by some of the doings of late years).—

A paper was read by the Rev. Thomas Hugo, as an introduction to the examination of the various buildings. Mr. Hugo divided his subject into two parts, a history of the fortress itself, and a survey of the ancient portions which yet remain. The former division commenced with an account of the erection of the White Tower, by Gundulf, Bishop of Rochester, under William the Conqueror, and included chronological notices of the various additions by subsequent monarchs, together with a list of the more celebrated prisoners who have from time to time been immured within their walls. The latter placed before the company the actual disposition of the various towers, walls, bridges, moats, &c. and enabled them to understand the original arrangement of the fortress, as well as the relative bearings of all the ancient forts which are still extant, a result which the vast masses of modern erections, for ordnance and other purposes, have on all sides availed to prevent. The great Keep, or White Tower, and the towers of the outer and inner ward, were then described in greater detail. The former consists for the most part of some lower apartments, now converted into armouries, and above these of the noble Council-chamber, and the interesting Chapel of St. John. The Council-chamber possesses a wooden roof, sustained by vast piers of the same material, but without mouldings or other ornament. The

chapel has a nave and aisles, separated from each other by an arcade of semicircular arches, without mouldings, which are supported by twelve columns, and two half columns. The form of the eastern extremity is apsidal; and it would appear that the otherwise rectangular outline of the building was purposely interfered with in order to give the chapel this favourite peculiarity. Over the lower is an upper arcade, divided by a plainly-chamfered string-course, which arcade opens into a gallery that occupies the space above the aisles. Among the smaller towers of the fortress, which the paper proceeded to notice, and which are with one or two exceptions of the period of King Henry III. Mr. Hugo drew particular attention to the Bell Tower, the remains existing in which have never been figured, and but very briefly alluded to. Of this tower he promised a memoir, with accurate drawings, for the next evening meeting of the society. He concluded with an expression of thanks to the authorities for the manner in which they had responded to the solicitations which the council had commissioned him to offer in the society's behalf. The visitors were then divided into a certain number of parties, each attended by a warder, and each took a different route to visit various parts of the fortress.

Mr. Charles Baly received the company in the Beauchamp or Cobham Tower, and pointed out the interesting memorials with which its walls abound. These, as our readers well know, consist of inscriptions, devices, and coats-of-arms, the work of many unhappy prisoners, who thus beguiled the tedium of captivity, terminated, in the case of many of them, by a violent death. Among others, those of Tyrrel, Thomas Howard Earl of Arundel, John Bullock Earl of Warwick, John Storey, Jane (the wife, perhaps, of Lord Guildford Dudley), Egremont R. d. d. d. &c. were duly noticed, and the history of their inscribers briefly detailed. Amongst the inscriptions, a namesake of the gentleman who thus kindly officiated, "C. B. Baly," has let upon the walls this apothegm:—"The most unhappy man in the world is he that is not patient in adversity; for men are not killed with the adversities they have, but with the impatience which they suffer." Some of the ladies who were in a hurry to get round, and found themselves compelled to adhere to the arrangement, and wait until the party in possession had left the narrow staircase free, had almost given practical illustrations of the truth of the remark.

Mr. Alfred White was stationed appropriately in the tower of that name, and pointed out its features to each successive batch of visitors. What he said was to this effect:—

The chapel of St. John, from the position in which it is placed in the White Tower, clearly belongs to a period shortly after the erection of this tower in 1078. Some of the details of the capitals of the columns would induce us to believe this date is somewhat too early, and this opinion is strengthened by their general outline, which partakes of a form that prevailed in the beginning of the next century. The history of this chapel is very imperfect, but we may suppose that it could hardly have escaped the great storm in 1090, which threw down several hundred houses in London, and overthrew the roof of Bow church, causing it to fall in Cheshire. From this circumstance we learn that the wind was blowing from the south, and this chapel, being on the south side of the White Tower, must have been the part most exposed to its violence. Stowe says that "This tower was by tempest of wind sore shaken in 1090;" and the speaker said he had examined carefully the walls and columns of the chapel to ascertain if any traces of injury from this storm are to be seen, but found that every part is uninjured, either by being out of the perpendicular, or rent by cracks. We may therefore suppose that this chapel was the part shaken and restored, and in this way we should be brought to the beginning of the twelfth century before its completion, a period which would well suit its architecture. The peculiar form of the cross which appears in most of the capitals is unusual in church architecture, and was much used by the Crusaders as an ornament of their dress and accoutrements.

The next mention of this chapel is in 1241, when Henry III. ordered certain decorations, viz. that the chapel be whitewashed, and this order may have included the coat of plaster which covers to this day the rough stonework in the upper part of the building; such covering, when applied to stone, being nearly as lasting as the stone itself. He also directed that in one of the windows on the north side should be placed a "little Mary holding her child," and in those on the south side, an image of the Trinity, and of St. John the evangelist. He also directed that the rood beyond the altar (which would have been placed upon the second pair of columns in the apse) be painted well, and a figure of St. Edward placed there presenting his ring to St. John, which

act was the foundation of a curious legend, in which the sainted king is said to have given his ring to St. John when appearing to him under the form of a poor beggar. Henry III. ordered much decorating at the same time for the church of St. Peter: but in addition to what was ordered for St. John's, he directed that stalls should be made for himself and queen; and from this we may suppose that St. Peter's was the church frequented by the royal family, and that this chapel of St. John was, perhaps, used by the garrison, or by the noble prisoners frequently detained in the fortress. We find little notice of this chapel till 1512, when Stowe tells us the chapel in the high white tower was burned. Having carefully examined the stonework, he had not been able to find the effects of fire; nor does there appear to have been any lead melted out of the joints, and from the absence of these injuries so generally found in churches which have been subjected to fire (as the choir of Canterbury Cathedral), it would seem as if this fire was confined to the burning of some inconsiderable woodwork within the building, or the wooden roof might have been burned off; the effects of which would not have been felt in the chapel, as both the body and aisles are covered with a thick stone arch. The party were afterwards conducted round the triforium, and saw the entrances on the west and south, which formerly formed a means of communication between this chapel, the council-chamber, and ante-room. These openings have been bricked up within a few years. So far Mr. White.

In the chapel on the Green,—St. Peter's *ad Vincula*,—the Rev. Mr. Boutell, on whom the general arrangement had devolved, and who did his duty well, received party after party, and pointed out briefly the principal objects of interest. He was not able, he said, in entering upon the sketch of his friend, Mr. White, in his description of the chapel in the White Tower, dedicated to St. John, to engage their attention with a venerable example of early architecture; nor could he hope, from this building itself, as an architectural structure, to elicit anything which would excite their interest. The present church was the result of even an unusual amount of barbarous maltreatment under the pretext of restoration and improvement. Probably, nothing visible was earlier than the time of Henry VIII. and but little indeed so early as that. When the Tower was first erected, as a Norman royal fortress, the chapel of St. John was probably the only church within the circuit of its walls; and when the outer works of this renowned castle were extended and consolidated by Henry III. it would seem that a distinct church was erected by that prince, which church was, in all probability, represented by the church of St. Peter of the present time. But if the existing church could advance no strong appeal as work either of ancient or of noble art, through its associations it was able to appeal to our deepest feelings and our most cherished sympathies. Inseparably it is connected with that dark page in our country's annals which records how, just without the wall, where the pavement is marked with stones of a darker hue, so many of the wisest, the noblest, the best, and the fairest heads of the English men and English women of times now long passed away, fell from such a block, and beneath the stroke of such an axe, as they had just seen yonder in the armours. It would seem to be ordained, by inscrutable Providence, that national greatness can only grow up from national calamity, and that in proportion to the exaltation of the greatness must be the severity of the preceding trial. Amongst the more remarkable sufferers were Queen Jane and her husband, Queens Anne Boleyn and Katherine Howard, Sir T. More, Bishop Fisher, Archbishop Lud, Buckingham, Northumberland, Norfolk, Surrey, Essex, Strafford, &c. &c. Mr. Boutell then adverted to the comparative uncertainty attending the permanent internment of many of the illustrious victims; possibly, in many instances, when time had altered circumstances, the remains of some might have been removed for what might have been considered more honourable sepulture. But many, without any doubt, after their "life's awful fever," here still "sleep well." Yet uncertainty hangs over the resting-place of the most interesting of all—Jane Grey: there appears to be no positive record as to her interment. The last victims of the axe were the rebel lords of "the 15," whose coffin plates were lately found, and were exhibited in the chapel. The speaker, after describing the past uses and associations of this chapel, and the circumstances of their visit, briefly described the monuments, including a high tomb, which had been raised, for convenience sake, to a corner of the chapel, and supported effigies of a knight and lady; tomb of Sir R. Cholmondeley, kt. who held a high command under Surrey at Flodden, and died in 1508, holding an office of high trust in the Tower. The costume and armour were described, and the propriety of instituting comparisons between the latter and the actual armour of the same period







paddle wheels worked by manual labour. In the experimental trips of 1786 and 1787, he was assisted by Mr. James Taylor (the tutor to his two young sons), and at the suggestion of the latter it was determined to substitute steam-power for manual labour. For this purpose, in the early part of 1788, Taylor introduced William Symington, an engineer at Warrickhead Lead-mines, who had previously obtained letters patent (June 5, 1787) for "his new invented steam-engine, on principles entirely new." An arrangement was made with Symington to apply an engine constructed according to his invention to one of Mr. Miller's vessels; and, consequently, the engine which forms the subject of this notice was made, the castings being executed in brass by George Watt, founder, of Low Calton, Edinburgh, in 1788. At the beginning of October in that year, the engine, mounted on a frame, was placed upon the deck of a double pleasure-boat, 25 feet long and 7 feet broad, and connected with two paddle-wheels, one forward, and the other abaft the engine, in the space between the two hulls of the double boat. On the steam-engine being put into action, it propelled the vessel along Dalswinton Lake at the rate of five miles an hour. After Mr. Miller and his friends had made a series of experimental trips in the boat, the engine was taken into Mr. Miller's house, where it remained in the library until his decease in 1815. It subsequently passed through various hands, and ultimately came into Mr. Woodcroft's possession in April, 1853. This interesting relic, which we are told had a very narrow escape from being broken up and sold for old metal, is of the class known in the early history of steam machinery as the "atmospheric engine;" and great credit is due to Symington for combining various improvements in the same engine. In 1801, Symington was employed by Lord Dundas to construct a steam-boat; and having by former failures learned what was required, he availed himself of the great improvements recently made in the steam-engine, in combination with a boat and paddle-wheel, on the plan which is now generally adopted. This boat, called the *Charlotte Dundas*, was the first practical steam-boat; and for the novel combination of all the parts, Symington obtained letters of patent on the 14th of October, 1801. The number of the patent is 5,544.

It is not only curious, but highly instructive to examine this engine, prepared for Mr. Miller, which was probably the first attempt to apply steam power to nautical purposes; and we have only to look upon the walls to see correct portraits of the different men concerned in this important work. Here, close to Wedgewood and Cori, is a very fine medallion of Patrick Miller, presented by the Misses Nasmyth; and not far off are those of Symington and others; and immediately above the portrait of Miller is a beautiful water color drawing, executed by the late Mr. Nasmyth seventy years ago. In this scene is the residence of Mr. Miller, at Dalswinton; and in the front of the house the identical artificial lake, on which the experiments were made; and lying near the shore is the double boat, with the engine to which we have alluded. Close by is the town of Dumfries, far in the distance wanders the river Nith. There are also hung here drawings of various paddle-wheeled vessels, some moved by hand labour, amongst these one with a paddle at the stern, similar to the screws which have lately come into use.

Amongst the models are machines for printing calicos, specimens of the blocks used for printing calico by the hand, bridges, inventions connected with weaving and spinning, bleaching apparatus; the paddle, screw, &c. of the *Great Eastern*; models of signals; an interesting collection, showing the progress of the screw propeller; and other things too numerous to mention.

A considerable space is occupied by an imposing library of folio and quarto volumes, which, however, prove on examination to be "dummies," but which, in course of time, will give place to real and substantial books, containing printed and engraved particulars of all patents granted since the introduction of the new Act of Parliament, which came into effect on the 1st of October, 1852. The number of patents granted since then are as follow:—1st October, 1852, to the end of December, 1,211, and in the following years, 2,644 and 3,045; and it is for the regular recitation of the de-cription of the patents granted each year, that the space to which we have alluded is reserved. The volumes already completed occupy—the specifications 16 feet, and the drawings, &c. 16 feet more; and it is calculated that about 40 feet will be required for these books each year for the future. Duplicates of these volumes which are prepared by Mr. B. Woodcroft, of the Great Seal Patent-office, in Southampton-buildings, Chancery-lane, are also sent to the British Museum, and some other libraries in London, and to several of the chief manufacturing towns of England, and also

to parts abroad. It is intended to print and bind the particulars of all the patents since No. 1 was granted in 1617. From this date to the passing of the new Act in 1852, the number of patents granted amount to 14,359, being on an average 235 patents for each year, and the increase in the number at the present time is seen by the comparison of that number with the 3,045 patents granted in a recent year. It is evident that it must be a labour of considerable time for inventors to search through all this mass of material in order to discover if any one has preceded him. In order to save this trouble and expense, a series of small books, which sell at 6d. each, are in course of preparation: each of these contains a complete list, and brief description of the patents of each class. There have already been published abridgements of the specifications connected with sewing and embroidery, drain-tiles and pipes, manufacture of iron, naval architecture and propelling, preservation of food. It needs but a glance at this department of the Brompton Museum, to feel sure that what is now here is but the germ of a large and useful collection, which will show the progress of our mechanical skill, and where in course of time we shall be able, by an examination of the models, &c. here placed, to trace the progress of spinning from the time of the ancient distaff and spinning-wheel, to the most recent improvements, the progress of printing, &c. &c. No time should be lost in getting specimens of the spinning-wheel, and the other machines connected with it, once such familiar features in our houses, but which are fast vanishing. There are a few of the old-fashioned hand-printing presses still remaining; but we apprehend, that if specimens are not soon secured, the existing examples will run a similar risk from the old iron merchants, as did Mr. Miller's first steam-boat engine.

#### RANDOM DESIGN.

THE five centuries that elapsed between the time Athens built St. Sophia's, at Constantinople, and the erection of Pisa Cathedral, by Buschetto, are called the Dark Ages of Architecture. Few records or remains of that period exist, and those positively referred to are not considered accurate. Very little labour has been bestowed upon the research, partly from the want of means individually, and partly because the edifices of that time have been until lately unpopular, not revived professionally, in deference to the spirit of reviving ancient Greece and Rome. As some large cities were founded during these centuries, and the inhabitants were emigrating from countries where architecture had flourished and fallen off, it is naturally conclusive that their public buildings, particularly places of worship, were erected with some degree of order; and, as they decayed, were burned, or became otherwise unsafe, were rebuilt in an improved and enlarged manner. Change of climate would induce many departures from old forms, and the law of necessity is as absolute in design as in any other branch of human industry and taste. Moreover, men of talent have been known to deduce styles of architecture from the customs, habits, and dwellings of the original people, far more suitable to their adopted countries than any, the most complete, combination of material elements left upon their native shores.

It is difficult to understand why those ages cannot be called, by a more enlightened name, when out of them appeared a style that adorned the greater part of Europe for several hundred years. This peculiar mode of construction was suited nobly to the wants of the age,—improving, extending, expanding with human advancement, and becoming more costly and elaborate as the communities grew wealthier. It came to perfection, according to some connoisseurs, at a certain stage, and then began to decline, although it is doubtful whether the last arrangement of constructive composition was not as judicious as that of the so-called perfect section. If it were not so, it may be more in accordance with the spirit of that time; and it is evident that architects, following successfully in a beaten track, only introduced such improvements as were warranted by their knowledge of these circumstances. They distinguished between the days when beads were thumbed, and those wherein the introduction of books into churches called loudly for light; and accordingly the old lamp alerics grew longer and wider, until they filled up every gap and bay between the buttresses.

There still remained some popular attachment to the expiring style, which is found in small parish churches or other edifices, either newly erected or rebuilt, after its general application ceased. Where the true principles were attended to, the result is very pleasing. The square windows, which (according to a well-known authority) are essentially Gothic, were finished similarly to the latest period, and where arches were introduced they were depressed, on account of the lowness of walls, and the small pitch of roofs. Rigid necessity produced economical work

throughout, without departing from the harmony of antique examples, and at the present moment they are peculiarly interesting and instructive, requiring very little depth of architectural lore to distinguish the vandalism of modern repairs and innovations from the shielded elegance of the original outline, both in design and workmanship.

Notwithstanding that all the applications of study and improvement were before the eyes of the architect, and within easy reach of his mind, the progress of leaving the Pointed Style was very slow and inconspicuous. He began to build again in the mediæval character, without understanding or consulting its features, or studying to know the reason why it should be so delineated. This is evidenced by the misapplication of many details in the new Gothic. The mystery which wants solution is, how a man requiring such a general fund of knowledge and scholastic discipline to learn the application of Greek and Roman proportions to his designs, could die in a flaming style at once, and carrying out, the most elaborate and intricate of all architectural studies, without any previous preparation, more than perhaps a mere oblique inspection of such portions, in a condensed style, as he thought suitable for revival?

When the style began to be aught out and understood, having less cause for ignorance in the general outline, and when the architect commenced giving permanent specimens of his skill, it is surprising that he did not begin where his predecessors left off. Instead thereof he went back some hundred years, and picked up these dark and austere designs of the first stage, that was aside by the Mediæval and Tudor architects, and inconsistent with every sense of civilization. The Norman followed next, in point of succession, until it was exhausted and despised; and even the Saxon character has been attempted, where zeal mastered reason. Every roundabout way was taken, to arrive at that perfection manifest in the latest specimens. And it was not until certain spirits, at great personal losses, produced several existing monuments on paper, with the measurements and mode of delineation, and gave sections to show the original method of carrying out the whole construction, that any approach even to mere truthfulness was made. Still, with all this instruction, and every proof of its not being applicable, the original Lancet style, producing a mere twilight within walls, is vigorously obtruded upon the public by many. It is lauded as beautiful and appropriate, and recommended as the most suitable for ecclesiastical purposes, by those whose imagination cannot distinguish between an age when few Englishmen could read books, and that wherein reading is become almost universal.

Parsing over the frippery of what is called the Debased and the interixture of various sections of the Pointed style by modern artists, without any notice of what might have been done, there is more than sufficient now before the world, of random design, to call for observation. Though it may be lawful to improve and extend the details applied by former architects, and to vary legitimately every break, base, entrance, and roof, nothing can warrant a direct violation of these rules, which, from the improved state of art, are considered to belong exclusively to certain orders, and do not admit of intermixture, without exciting disapproval. This is strangely remarkable where the Norman Gothic is confounded with Roman a clerical style, and the very outlines interwoven with each other, as may be seen in many warehouses and new mansions of the present day. Indeed, the matter is more serious where semi-Gothic, Grecian, Roman, Italian, and Elizabethan, rise, story above story, until a Babel is produced, from which the scriptural one only differed in magnitude. Architectures are returned at the very door-step without a plinth, and similarly on window-sills and strings, and they are signified by a few of a tiny spring resistance (which is Gothic) in Italian buildings. The Norman decorations are also introduced into French doors, which are sunk and moulded in Gothic style at a vast expense, looking far more unsatisfactory when the puerile novelty becomes more familiar to the eye, than the easy recesses of legitimate architecture, which admits of ornament sufficient to relieve from sameness. As for passing off such random designs under the general name of Byzantine, it would be equally judicious to assign some positive class for the nonsense long pilasters upon the three stories of deeply-sunk windows, crowned with arches, over which is what may be meant for an attic, on a plain surface of wall. These gignitic niches are anything but pleasing, at a distance conveying a notion of one very lofty story within, being comparable only with the theatrical pictures for the admission of immense framework. Again, there are three awfully frowning cornices to many buildings, one to the ground story, and the third to the attic. Common sense alone would suggest coping for an attic, whatever may be the case for crowning the ground story.



Still there are admirers who dogmatize these errors as excellent in design; and it is not until some well-executed *façade* arises alongside the meretricious composition, and popularly shames it out of expression, that amateurs acknowledge their oversight, by the usual method practised in sophisticated pedantry—silence.

Amongst modern buildings may be noticed several banks, which have every appearance of chib-houses, and excellent club-house fronts they seem, whether copied or worked out laboriously. It must be admitted, however, that there is a first-class specimen of a bank in King-street, Manchester; its appearance at once indicating the purport of its business. Few designers seem to keep this object in view; and hence, being wholly occupied by producing a handsome *façade*, the work is brought to a close without any specific expression. The purport of the edifice should engross the mind, and it that be so satisfactorily impressed on the imagination that it is never forgotten when producing the outline and its details, there is every chance of arriving at what cannot be mistaken as to its appropriation. However, the style adopted at the first must be carried forward faithfully, even to its minutest details, without borrowing from others of a different class. In order to be able easily to accomplish this, it is necessary that the designer should be intimately acquainted with all the orders, styles, changes, and improvements in existence, both from books and by copying every example within his reach. Without these two conditions the design will be random, and the production displeasing to every person of taste and judgment.

Many instances may be cited where new elevations do not represent what they really are, but rather impress a beholder with opinions quite the contrary. It is true that those temporary constructions lately set up for exhibitions required a great latitude of idea, and, on account of the materials used, do not come within the range of ordinary practice. Indeed, it is scarcely architecture, any further than that required in the erection of hot-houses on a gigantic scale, but rather belongs to some department of engineering. As for design, that is out of the question, unless arches incapable of self-maintenance, if not iron-bound, and wings like the stables of an aristocrat's hall, have any pretensions thereto. The circular transept of Hyde-park, raised intentionally to preserve some trees from being lopped, has rendered it necessary that in future all such buildings should have circular roofs. They are suitable enough for their temporary purposes, and as such should be classed by themselves; but they are as far removed from true architecture as a pavilion, a monster circus, or any other moveable place of shelter.

Two questions are asked, which, though very simple and well known, are sufficiently important to be repeated here. Why do the Classical, Grecian, and Roman remain look, on revival, so sublime, solid, and awe-inspiring; and how is it that the eye is not dissatisfied with their introduction into many buildings for modern usages? How is it that the Pointed style, in its complete condition, strikes the mind with astonishment and admiration? Because they possess concord, unity, and singleness of design. Many monuments exist to prove this on a large scale; but the lathorn of Demosthenes, and several Medæval fonts and their canopies, exemplify the assertion in very reduced proportions. Similar to any ordinary investigation, the irregularities which cause displeasure in modern buildings will be found, if properly traced out, to originate in a want of discrimination, caused by neglecting to consult the principles of art,—probably the fundamental ones. Under such circumstances, a great many varieties will be produced, and none of a permanent description, which will ever assist in making progress; unless, as an absurd argument, they convince men of errors to be avoided. The most elaborate details, beautifully wrought out and decorated, cannot save a composition from being a failure, under such negligence. But if committees, who have some responsibility in the matter, were to act with strict impartiality, and call in qualified professional assistance to guide their decisions, very few specimens of random design would disgrace the country.

FRANCIS SULLIVAN.

#### THE CHESTER CONGRESS OF THE ARCHEOLOGICAL INSTITUTE.

THE first meeting was held in the Town-hall, on Tuesday, the 21st, Lord Talbot de Malahide, presiding. The Bishop of Chester welcomed the Institute to the City, also the Rev. Canon Slade, and Mr. Hicklin. The Bishop of Oxford, on the part of the Institute, replied, and in the course of his address, said, I believe that my revered friend and brother, the Lord Bishop of Chester feels that he has done well in welcoming such a society as this; because, after all, there is far more than the mere gratification of a somewhat idle curiosity in gazing in the dust of antiquity in

such pursuits, and carrying our inquiries to the dim past. The great Creator and Ruler of the world has so ordered the affairs of man that things every day return again as in a perpetual cycle, the past reproducing itself in the present with only slight external alteration; but in reality and thoroughly the kernel remains the same it was before. Therefore, when people do set themselves to study the past, not for a mere superficial acquaintance with it, but to know it as it was to see how it lived, moved, breathed, and had its being—to understand it in its temper, and circumstances, and inward life, those persons do get, if they pursue the task with application, a certain sort of prescience for the future, from that acquaintance with the past.

Mr. Markland and Sir Charles Anderson also addressed the meeting. Papers were read in the evening. On Wednesday morning, in the Section of Antiquities, Professor Earle read a paper on ancient names of places and things in Cheshire. In the Architectural Section, Mr. J. H. Parker read a paper on St. John's Church, Chester, an ancient Norman structure, built about the middle of the eleventh century. The paper had reference to the architectural features of the building, its history being reserved for another paper. An adjournment took place, and the members proceeded to inspect the building, and Mr. Parker pointed out the distinguishing features of this noble pile.

At half-past six the annual dinner of the Institute, presided over by Lord Talbot de Malahide, was held in the Music-hall.

On Thursday, the meeting visited the Art-Treasures Exhibition at Manchester. Mr. Geo. Scharf, having on the previous evening given some particulars as to its formation, and a review of some of the works it comprises. In the course of his address, he gave some facts communicated by Mr. J. B. Waring, in reference to the Museum of Ornamental Art. "The Museum of Ornamental Art, which forms so important a feature in the Art Treasures Exhibition, at Manchester, originated in the idea of collecting together the most remarkable relics of the Middle Ages and the Renaissance, somewhat on the plan (as it was expressed in the prospectus) of the Hôtel Cluny, at Paris. How far anything resembling the Hôtel Cluny could be obtained in an open space about 600 feet long and 104 feet wide, may at once be conceived by those who are acquainted with the picturesque arrangement of that fine old mansion and its contents. Thus the original idea of forming rooms, illustrative of various epochs of art, appeared out of the question; and the only object which the directors had in view was, to form a museum as simple as possible in its plan, and calculated not only to interest the general public, but to be of some service in placing before the eye a chronological series of the several arts therein illustrated. Before proceeding further, it may be well to state, that with the exception of the promise of the Meyrick collection, nothing had been done towards forming the museum by the 1st of November, 1856, on which day Mr. Waring commenced his duties at Manchester; even then, many precious days were lost for want of any office for the department, and the necessary requirements for work having to be set on foot. Indeed, the difficulties to be overcome at the commencement were great, and were increased by the evident lukewarmness of several of the committee—in regard to this section of the museum—and the secret as well as open discouragement thrown in our way by the illiberal spirit of several influential men—in London and elsewhere—who ought to have been its most active supporters." The aid of Mr. Robert Dudley, who had rendered good service at the Mediæval and Renaissance Courts at Sydenham, was secured, and shortly afterwards that of Mr. Chaffers. The speaker afterwards gave some account of the general arrangement of the museum. "In ten large glass cases, 14 feet by 7 feet, on the right hand side as we enter, are placed the government contribution, Lord Hastings' Meiolica, the Soulaiges collection, and the Meyrick ivories, &c.; five cases government contribution, one Lord Hastings, three Soulaiges, and one Meyrick. There is but little system observable in this series, owing to the necessity of keeping the several contributions separate. Ten other large cases, to the left on entrance, contain those private contributions which were placed unreservedly at Mr. Waring's disposal. The several sets are, in these cases, mapped according to their material, and were arranged, as far as time and the nature of the cases would allow, in chronological order, the main divisions being glass, enamel, European porcelain, Oriental porcelain, European pottery (principally Meiolica), metal work generally, the precious metals, sculpture (small), in bronze, wood, terra cotta, &c., and lastly works in ivory. Beyond this point, on each side, is the armour and arms. The Meyrick collection on the south, and other contributors on the north side. In the next three bays, up to the transept, are placed the bookbindings of Sir

C. Price, Messrs. Slade and Nicholson, and Mr. Mayer's collection. On the opposite side, one case of Mr. Mayer's, containing a variety of mediæval works, and three cases of gold and silver work, obtained chiefly through the energy and liberal assistance of Messrs. Hunt and Roskell."

On Friday, the historical section met in the Town Hall, under the presidency of the Bishop of Chester. The first paper read was by the Rev. F. Grosvenor, on the "History of St. John's Church." Mr. Grosvenor supposed that the first religious house was erected on the spot now occupied by the present church about the year 906. The Rev. W. H. Gunner, M.A., secretary of the section, then read extracts from a paper on the "Illustrations of Magic in the Middle Ages," by the Rev. Jas. Raine, jun., and a paper on the "Catalogue of Books in Winchester College Library, from Richard II. to Henry VI.," contributed by himself.

In the section of antiquities, E. Guest, Esq., D.C.L., presided, and the first paper was read by Mr. J. A. Picton, on the "Primitive Condition and Early Settlement of South Lancashire and North Cheshire, with the Physical Changes which have taken place." Mr. Picton concluded an interesting paper, by a reference to the spread of civilisation and commerce, as exhibited in Liverpool, which would, he trusted, continue to extend for the good of the present and future generations.

In the architectural section, a paper was read by Mr. J. H. Parker, on the "Architecture of the Cathedral," and one by the Rev. Charles Hartsborne, on "Carnarvon Castle," with reference to Flint and other castles in Wales.

Liverpool was visited on Saturday, and some of the Welsh castles on Monday. Reference to what took place there will be found in the next article.

#### AN INDIVIDUAL VIEW OF THE CHESTER CONGRESS.

BEFORE going to Chester, I recreated myself with a short tour in North Wales, and enjoyed the contemplation of those beauties that existed long before the monuments—the work of man's hands—which are the especial study of the archaeologist. The journey brought me in contact with many works of the present time, and I must be candid enough to acknowledge, even at the risk of being accused of heresy, that whatever may be the amount of beauty existing in the memorials of the past, the works of the present day are productive of more good to mankind, and, as evidence of the might of man's mind, glorify "Him who gave it."

I was led into these reflections by a contemplation of Valle Crucis Abbey and a visit to the Dinorwic Slate Quarry, belonging to Mr. Ashton Smith, at Llanberis. The heads of the former, when at the height of their power, raised a structure from the contributions of the faithful, to retain within its walls those subservient to its authority, and to bestow its dole to the wretched without. The proprietor of the latter employs 2,300 men, retained at a cost of 10,000*l.* per month. A German gentleman whom I met at Llanberis told me that he had come to purchase slates, and that a cargo which he was about to purchase would consist of about 120,000 or 130,000 slates, and the value would be 230*l.*; and when we consider that the quarry is said to return its proprietor a net annual income of 70,000*l.* how vast must be the ramifications of commerce, and how great must be the employment created to produce this result. I think if the other members of the Archaeological Institute are equally candid, they will acknowledge the same feelings, more especially after the visit to the modern Liverpool and the *Nagana*, with the cable that is to unite us with our Anglo-Saxon brethren. Well might the Bishop of Oxford, in his eloquent address at the first meeting on Tuesday, have rejoiced that "while we conserved the monuments of the past, we were ahead of all other nations in adopting the newest of the new." In a paper like the *Builder*, devoted to the improvement of the present, I need not hesitate to express a gratification at that advancement of science connected with the increase of the material interests and physical condition of mankind.

My first day in Chester was tinged with regret that there should be two institutions of the same character in existence. Ten years ago our Institute visited Norwich, and this year the Archaeological Association follows in our footsteps. Nine years ago that society investigated Chester, and now we tread the same path. But judging from the papers and discussions that we had, they had left us plenty of room for surmise and conjecture. Whether the places possessing antiquarian interest are so few, or whether there is a disinclination in many places to receive us, I cannot help now feeling that the interests of archaeology would be best served by the two societies uniting; and surely this might be accom-



plished by one of those compromises of which life is a continued series.

We were certainly well received by the authorities of the place, but the beginning of the meeting was the dullest of the dull. In the evening of the first day we assembled to hear a paper by Mr. Salt, on the "Progress of Henry III." It is to be regretted that gentlemen who display such wonderful powers of research, should not understand the necessity of popularising their productions. Here was a memoir in three volumes listened to with the most somnolent weariness, until the Bishop of Oxford came to the rescue, and in a few remarks pointed out the salient features of the essay, and with consummate tact extracted from it certain points with which he played with considerable humour, which broke up the audience, and sent them home cheerful and contented. On Wednesday, the 22nd, we had a paper from Mr. Earl, of Oxford, which led to a very interesting discussion on the origin of names and words.

In the afternoon we visited the church of St. John, under the guidance of Mr. Parker, who had previously read a paper on that structure. I think he had not given so much attention to this subject as he generally does, for the corrections from the local antiquaries were very frequent.

The same day Mr. Scharf, a model for all lecturers, gave us a fluent and eloquent address, which might be termed "a guide for archaeologists to view the Art Treasures at Manchester," and on our visit there the following day it was found of great advantage to the members of the Institute.

The annual dinner took place in the evening, and nothing could have been more dull and dreary. Mr. Hicklin was the only speaker whose remarks could boast of an idea, the oratory of the other speakers being of that class of which "unaccustomed as I am" and "I regret that it has not fallen into abler hands" may be considered the type.

On Thursday we visited Manchester, and on Saturday we were received at Liverpool—a great distinction. At the former place, had it not been for my member, Mr. Scharf, we should have been quite unconscious that there was such a body as an executive committee, general commissioner, or any other officer. This was felt by many members of the Institute, as the committee and secretaries of that body took a lively interest in, and did materially aid the promoters of the Art Treasures Exhibition in furthering the object they had in view. Gratitude is said to be a lively sense of favours to be received, and as it is expected there is nothing more to be obtained from the future, our body did not receive the courtesy of an acknowledgment.

From Liverpool, where the Cunards Company placed the "Satellite" at our disposal, we proceeded to Speke Hall, a beautiful specimen of domestic architecture of the latter part of the sixteenth century. Mr. Watt was a most liberal host, and we were all delighted with "ye faire ladye," who did receive us with much grace.

On our return to Liverpool, we visited that fine modern building, St. George's Hall, and in the evening we attended, at the Town Hall, a conversation of the Historic Society of Lancashire and Cheshire, who had invited a brilliant assembly to meet us, and to contribute to whose enjoyment no pains seemed to be spared. A band of music was provided for those who could find more pleasure in dancing than in dry historic lore.

This day abounded in enjoyment, and caused us to forget the dullness of the previous days of our congress. On Monday we visited Carnarvon, where Mr. Hartshorne gave us a very interesting account of the building of the Castle. His remarks were valuable because authentic, he having by dint of great research obtained the records and accounts, even down to the name of the blacksmith, and the amount of his bill. But Mr. Hartshorne has caused considerable annoyance to many natives of those parts, because his statement has destroyed one of the pet traditions that Edward the Second was born in the Eagle Tower; his documents clearly proving that the king himself built it, having for the architect one John de Briton, a name calling up pleasant associations in connection with archaeology and the Institute.

We left Carnarvon to view the Tabular and Suspension Bridges, and here the feelings that I have described at the commencement of this communication were renewed and strengthened. If the former gigantic monument of Stephenson's genius should be in ruins when that mysterious but inquiring New Zealander makes his appearance, and if the fragments do not excite his admiration for its beauty, like the remains of some Gothic building, he will be compelled to acknowledge that we were not a degenerate race, but that we have left memorials showing that the mighty minds of this time achieved almost miraculous triumphs over matter, not for their own glory, but the advantage of their fellow creatures.

We then went to the George at Bangor, where the kind and attentive hostess had provided a repast for us that would have shamed many establishments in London. O that the innkeepers of England would learn a little civilization from their brethren in Wales! We afterwards visited Conway, where we were again instructed by Mr. Hartshorne. On Tuesday Mr. Pettit read a paper on Nantwich, and an excursion was afterwards formed to visit that spot, but by this time many members had departed. Saturday at Liverpool and Monday at Carnarvon were two bright and enjoyable days of the week's meeting, but beyond this, dullness was the general characteristic; and without some effort is made, either by fusion with the other society, or by making our visits to ground that has not already been explored, we shall lose our position, and the proceedings of the Institute will not be regarded with that interest which has hitherto marked them.

F. S. A.

#### ASSUMED COST OF THE PROPOSED GOVERNMENT OFFICES.

In a pamphlet recently published, entitled "Remarks on the Designs Proposed for the New Government Offices," by a Practical Man (Ridgway, Piccadilly), the writer gives some broad calculations as to the probable cost of the land and proposed buildings, which may interest our readers. He says:—

"Of the whole area pointed out by the chief commissioner, the existing buildings and the ground un-built upon belonging to the Government, comprise about 18,000 square yards, including the small angle taken from the south parade, opposite the present Foreign Office: about 16,000 square yards will be obtained from the Thames, within the proposed river wall, and some 20,000 square yards consist of streets and public thoroughfares, leaving 60,000 square yards, or 540,000 superficial feet of ground, covered with buildings and their appurtenances, which must be purchased under the compulsory powers of an Act of Parliament. The preceding areas, always given in round numbers, make up the total of 23½ acres, or 114,000 square yards of ground to work upon.

"The price of the ground to be purchased will probably average about 25*l.* per square yard. This valuation is obtained by data, to be found in blue books of the last two or three years; consequently the first item of an estimate will be 60,000 square yards at 25*l.*, being 1,500,000*l.*: a sum which would cover the contingencies of clearing the ground, and reclaiming the land from the river by the proposed embankment.

It is believed that this item of 1,500,000*l.* for purchase of property and clearing the ground, is put at a high figure; but it is far better to look a difficulty in the face at the very outset. We ought to know the worst, as we have then no dread of unforeseen expenses occurring afterwards. But let every one judge for himself.

The estimated cost of the block of buildings on the south side of Bridge-street, Westminster, covering about 2,100 square yards of ground, is 170,000*l.*, or upwards of 80*l.* per yard.

The valuation of the houses on the north side of this same Bridge-street is 70,000*l.* for 1,735 square yards, or more than 40*l.* per yard.

A site lately proposed for St. Margaret's church, at the corner of Tothill-street, and fronting on the Broad Sanctuary, containing 1,500 square yards, was valued at 45,000*l.*, or 30*l.* per yard.

It would require 180,000*l.* to pay for the houses and properties on both sides of Bridge-street, Lambeth, at the east end of the present Westminster Bridge: the buildings and their appendages cover 8,754 square yards of ground; the cost being, therefore, more than 20*l.* per yard.

The sum of 110,000*l.* is the price of a block in Old Palace-yard, between Poet's Corner and Abingdon-street, covering 6,400 square yards; being 17*l.* per yard.

The estimated expense of the property for the approaches on the Middlesex side of the proposed bridge across the Thames, from the Horseferry-road to Lambeth Palace, is 200,000*l.*, for 24,000 square yards of houses and buildings, being about eight guineas per yard.

Considering the valuable nature of the buildings in Bridge-street, Great George-street, Parliament-street, Duke-street, Charles-street, &c., and comparing them with the above, it can hardly be said that the average of 25*l.* per square yard is too high.

When these remarks were commenced, not the least idea of making estimates was entertained; but it seems almost impossible to engage in a practical investigation of such a subject as this, without invariably asking ourselves, "What will it cost?"—and following up this vein of inquiry, and having cleared the ground and prepared for laying the foundations of our New Government Offices, an attempt must be made to find out the expense of erecting them.

There is no doubt that an experienced architect would be able to give a very near estimate for buildings, in the style required, to cover 50,000 square yards of ground. The blue books, however, give us some clue for ourselves; and it appears that it has cost about 60*l.* per square yard of the ground on which they actually stand, to erect the buildings of the new palace at Westminster as we now see them finished, exclusive of the purchase of ground and other incidentals not being actual constructions; but this price includes the furnishing, and a considerable extent of splendid interior decoration.

The estimates made a year or two since for the new public offices and official residences to be erected around Downing-street were, however, at the rate of only 12*l.* per square yard of building. Allowing for the character of the architecture now contemplated, we shall not be very far wrong, under all circumstances, probably, in assuming that 30*l.* per square yard of the ground which the buildings are actually to occupy will be the cost of erecting the new Government Offices on the chosen site.

The second item of the estimate will thus be 50,000 square yards of buildings at 30*l.*, amounting to 1,500,000*l.*

If then, to the million and a half for purchase of property and clearing the ground, and to an equal amount for the buildings, we add half a million for fittings, and furniture, and paving, sewerage, gas and water supplies, contingencies, &c., we shall get a total of three and a half millions sterling as the ultimate, and it is believed, the maximum, expenditure for the new offices."

This is irrespective of the cost of approaches, and improvement of the neighbourhood.

#### CORRESPONDENCE ON THE DESIGNS FOR PROPOSED GOVERNMENT OFFICES.

SIR,—I beg to be allowed to offer a few plain remarks on the competition for the Government Offices. I am not myself a competitor, but I have watched the competition with interest. In common with the profession generally, I have been for the last few weeks looking anxiously for the report of the judges. I have also been waiting for some expression of the judgment which the profession at large is to pass upon the award. Critics will be unwilling to say much until the report appears, but it seems to me that we may wait too long even for the report. Our silence may be taken as if it were our consent. The publication of the report may, perhaps, be staved off till the very end of the parliamentary session, so as to let the matter be what is called "smuggled" through the House of Commons, and put out of sight before any one has time to object. Notwithstanding the want of the report then, let me point out one thing, at least, which puzzles me very much. I remember the competition for the Houses of Parliament, and the pre-eminence of one design over all the rest. There is almost always one pre-eminent design in every competition. I certainly think the competition for the Government Offices was no exception to the rule. At any rate I know, that a very great many of the profession, and the public of every degree, will join me in saying, that for excellence of plan, grandeur of exterior, refined and Classical finish of detail, æsthetical good taste, and suitability of style for the purpose and site No. 112, "Omnicron," stood out alone. For confirmation of what I say, I need only refer to the intelligent and impartial critique of the *Builder* itself. But where is this design now? If the deliberations of the judges went so far as to reverse the judgment of the public (if you will allow me to use the expression) which placed this design first, surely it is singular that it should receive no acknowledgment at all, not even a seventh prize. We cannot imagine that on grounds of merit, No. 112, should be seriously put below Nos. 17, 126, and the Gothic 54.

No. 99, "Delta," is another design left in an incomprehensible position. It may have set out on an injudicious idea, but that was at least a grand idea, and the public and the profession acknowledged it as such, and paid a great deal of attention to it. And this design is nowhere.

One test which we may safely apply to the award is this. The present exhibition of the selected designs ought to show better and not worse than the former exhibition of the whole. It ought to show a very great deal better too, as if the jewels were separated from the dross. But I regret to express the fact, that to my eye the selected designs make but a very inferior show indeed. The *spirit* of the competition, instead of being concentrated, is somehow absent. Nos. 112, 99, 69, 41, 109, if no others, are sadly missed, while some of the honoured ones seem as much *de trop*.

I cannot help remarking what a singular idea it is to consider the treatment of the two Offices as one edifice (adopted by the great mass of competitors) as a "difficulty." On the contrary, in the opinion of



almost the whole profession and public, that combination was the very thing to be considered an advantage. And some such combination, I am sure, must be the first step towards carrying out the two first premium designs, if they are ever to be carried out at all. I look upon the "difficulty" as the most unfortunate confession the judges could have possibly made.

If the report clears up all this, I think it will get over a very serious "difficulty" indeed. But, whatever may be done, I hope the profession will lose no time in letting its opinion be heard (whatever it may be) through your columns and other channels. Members of Parliament are no doubt looking for this all this time to enable them to form their opinion; and, if we complain after their approval of the transaction has been passed, they will simply tell us we are too late.\*

AN EARLY MEMBER OF THE INSTITUTE

#### ON THE POLITICAL ECONOMY OF ART.

On this subject Mr. Ruskin has recently delivered two lectures at the Manchester Athenæum. In the course of the first, as reported in the *Courier*, the lecturer said:—All economy, whether of states, households, or individuals, is the art of managing labour. The want and suffering that are so prevalent are the result of improvidence and indolence. Our restricted use of the word "economy," as if it meant spending or saving, was a mistake. This use of the word was not English, it was bad Greek, and was a sense. Economy means the wise management of labour, the applying of it rationally, preserving its produce carefully, and distributing its produce seasonably. In true economy there is a balanced division between the objects of utility and splendour. He should address them chiefly on the laws by which best to grow in our national garden trees and fruits pleasant to the sight, and, in no forbidden sense, desirable to make men wise. A nation's labour well applied is amply sufficient to provide its whole population with food and comfortable clothing; but the good application is everything. We complain of the difficulty of finding work for our men: the real difficulty is in finding men for our work. It is our inactivity and not our hunger that ruins us. Precisely the same laws of economy which apply to the cultivation of a farm will apply to the cultivation of a province. The same principles which are right in the administration of a few fields are right in the administration of a country. Illness does not cease to be ruinous because it is extensive, nor labour to be productive because it is universal. The "let alone" principle was ruin to all discipline was interference. Mr. Ruskin applied this axiom to the government of the country, and passed on to consider the question, "How are we to produce amongst us at any time the greatest quantity of art intellect?" Artists have to be found, not made. A certain quantity of art intellect is produced annually in every nation. The first thing to be done was the establishment of "trial schools" in large towns for the development and education of this intellect. The most useful school was the workshop of a great painter—see the example of the Italian masters. Mr. Ruskin laid great stress upon the importance of young artists of judicious criticism. The next thing was to train them to be in the best sense gentlemen, that their minds might see and feel the noblest and loveliest things. He was sorry to say this was of all parts of an artist's education the most neglected amongst us. The want of this was visible in the pictures of even our greatest painters. The picture which most truly deserved the name of "art treasure" was that which had been painted by a good and wise man. No money could be better spent than in providing good education for artists. The next question was, "How best to employ the genius we discover?" First, they should be set to various work; second, to easy work; and third, to produce lasting work. In the architects' yards throughout England there were scores of men carving the same things. Their ideas were thus cramped, and they did not work so fast as the stone carvers who were set to work on the museum at Oxford, who each copied the flowers of the district for their capitals, and worked so fast that a saving of 30 per cent. was effected.

In the course of his second lecture Mr. Ruskin urged that there was nothing in England in which money was so wasted as in building fine tombs; but true respect would be shown by rather preserving the monuments which those departed had erected with their own hands. The living, in their work, should think constantly of its being serviceable to those who were to come after; and it would be the duty of these thoughtfully to receive what was so left, and not to thrust it aside as soon as they thought there was no use for it. The world had chosen, and still seemed to choose, those spots where the treasures of art were

most rich, that they might turn them into battlefields. This was pre-eminently the case with Italy. He had seen the most direful neglect and destruction of works of art in Verona: in Venice he had seen pictures by Tintoret hanging in rags from holes made by bomb-shells. It might be said, "We cannot help all this. We cannot drive the Austrians out of Italy; and we cannot keep the Italians quiet without guns." But at least something might be done—more than we are all doing. He would recommend those who travelled, and who loved art, never to have copies made of already-copied pictures: there were numbers of the finest pictures scarcely known that had never been copied, and that might be shot-riddled next month. The reputation of many oil-copied pictures arose mainly from the fact that they were easy to be seen, not because they were the best: those to which he had referred would have to be sought. He now came to the last point—the distribution of art. It must be evident that the way in which works of art were, on the whole, most useful to the nation to which they belonged, must be by their collection in public galleries, when these galleries were properly managed. He hoped we should see the time when there would be a large and serviceable gallery in every principal town in the kingdom. Much also must be done by private possession. The object of the Government should be to collect the works of dead masters, in public galleries, while encouragement should be given by private individuals to living masters, and the way to do this was to keep down the prices as much as we could. In doing this we should produce two effects: we should make painters supply more pictures, if they wished to make money; and we should bring good painters more within the reach of persons of moderate income. Another and a most important means of distributing art was by the permanent decoration of public buildings. The best way of bringing forward young men who wanted practice was to employ them, under great masters, in this kind of work. Of the class of structures in which this decoration might be especially carried out were schools, buildings for the meeting of trade guilds, and almshouses. In schools, the walls might be covered with paintings illustrating the great facts of past ages; in the houses of guilds, with incidents showing the services which men belonging to trade had rendered to their country; and in almshouses, with pictures recalling events most interesting to those who were likely to inhabit them.

Both these points, the establishment of a public gallery in each provincial town, and the employment of rising artists in decorating the walls of buildings belonging to public companies, schools, &c. have been urged for many years by the Council of the Art Union of London, in their annual Report, and cannot be too often referred to and insisted on.

#### CHURCH BUILDINGS.

**Askearn.**—Campall Church has been restored interiorly, by repaving, repainting, decorating, &c. The chancel is the only part of the church where the improvements have been least and the requirements most. Several old square pews have been taken away, and stalls substituted; but beyond this, and the cleansing of the monuments to the right of the communion table, one of which is a tablet by Flaxman, nothing has been done. The unsightliness of the chancel roof is a great objection. It is apparently a work of modern date. The roof has been brought so low, that, whilst it has partially covered the windows, two or three of which have been filled in, it completely mars the effect of the chancel arch, as seen on first entering the edifice.

**Liverpool.**—The Roman Catholic Church of St. Vincent de Paul, at the upper end of Park-lane, approaches towards completion. The masonry of the structure is now all completed, while the other portions of the fabric are far advanced. The west front, or principal entrance, coincides with the line of Park-lane. The western door is surmounted by a window 18 feet wide and 32 feet high, divided into compartments by stone mullions, terminating in lancet-arches; and the whole combined into a cluster of quatrefoil tracery. The stone-work is executed in rock-faced courses, of Upholland stone, with polished labels, quoins, and dressings. The central window is surmounted by a belfry and cope, reaching to the height of 120 feet from the ground. On each side of the great window is one filled in with tracery. These latter admit the principal light into the side aisles, the nave being chiefly lighted by the large window. In length from the western entrance to the eastern extremity of the chancel, the church internally is 150 feet: it is 56 feet high in the nave, and 49 feet high in the chancel. There are side aisles on the south and north of the nave, divided off by octagonal pillars of Painswick stone, of which there are eight on each side, supporting lancet-arches, the corbel springers of which are ornamented by carving. The

will above these arches is pierced by lancet-pointed, clerestory windows. On the exterior side of the southern aisle there is a range of confessionals, each having a separate entrance from the aisle, and also from a corridor which runs along the south wall of the edifice. The width of the nave is 38 feet clear within the pillars. The aisles are each 12 feet wide, making the inside width of the church 62 feet, while it measures 90 feet to the extreme width of the confessional corridor. The chancel is of the same width as the nave, with side chapels corresponding in widthness to the side aisles. It is more fully ornamented than the body of the church. The eastern or high altar window is 22 feet wide: its chief feature is a St. Catherine's wheel. The floor of the chancel and side chapels will be of oak, Spanish chestnut, and other fancy woods, arranged in geometrical designs. This floor was originally made for the late Earl of Shrewsbury, and was designed to occupy a conspicuous place at Alton Towers. On the north side of the church, which extends between Park-lane and South Frederick-street, is a residence for the clergymen connected with the church. This building is in the Anglian style, with projecting bays and pointed roof. It is of brick, with polished stone labels and dressings. The whole of these structures have been built from designs made by Mr. E. W. Pugin. The contractors are Messrs. Thomas Heigh and Co. of this town.

**Cleckheaton.**—The corner stone of a new Congregational chapel, at Moor End, was laid by Mr. F. Crossley, on the 17th ult. The new structure will be approached by a flight of steps, leading to a colonnade of Corinthian columns, with arches over the supporting pediment. From the colonnade, access will be had to an inner vestibule, from which the ground floor and the galleries will be approached. The chapel is a parallelogram 100 feet by 60, with a gallery on three sides, and an organ recess and orchestra. The whole of the ground floor is to be occupied by pews, as also the galleries, with the exception of a portion at the back, to be appropriated for Sabbath-school children; accommodation being provided for 1,600 people. Under the chapel will be school-rooms for boys and girls, with class-rooms and other conveniences, whilst on the lower basement provision will be made for the residence of the chapel-keeper, and the heating of the building. The cost of the edifice, exclusive of the ground, will be about 6,000l. The architects are Messrs. Lockwood and Mawson, of Bradford.

**Sea-borough.**—The Roman Catholic Church dedicated to St. Peter, now in course of erection at Toller-gate, from the design of Messrs. Weightman, Hadfield, and Glidie, of Sheffield, is progressing. The foundation-stone was laid during the autumn of last year, but the works were suspended during the severe weather in winter, and have been resumed by the contractor, Mr. William Fellingbridge, of Whitby, under the immediate direction of Mr. Maskell, clerk of the works. It is expected that the roofs will be covered by the end of October. The church is in the Pointed style of the Geometric period. The dimensions are as follow:—Internal space, 88 feet by 53 feet, including aisles; chancel, 27 feet by 22 feet. The arrangement of the plan is designed with reference to the difficulties of the site, which necessitate the chancel being placed due south. It is proposed, therefore, in place of the usual altar-window, to light the apse by four lateral windows, the internal wall surface being reserved for decoration by fresco painting. This arrangement is very common on the Continent. The nave is separated from the aisles by an arcade, the columns being circular, with moulded capitals and arches of two orders supporting a clerestory of two-lighted windows; the internal height being 50 feet. There is a sacristy, and adjoining to it a baptistry, opening by an arch to the aisle. The tower terminates the west aisle. It is only in contemplation by the present contract to build a portion of the tower. The aisles are terminated by chapels. The nave will be fitted up with open benches, and the aisles left open. There will be a loft for an organ at the end opposite the chancel. A window filled with tracery will constitute the principal feature in the Castle-road front.

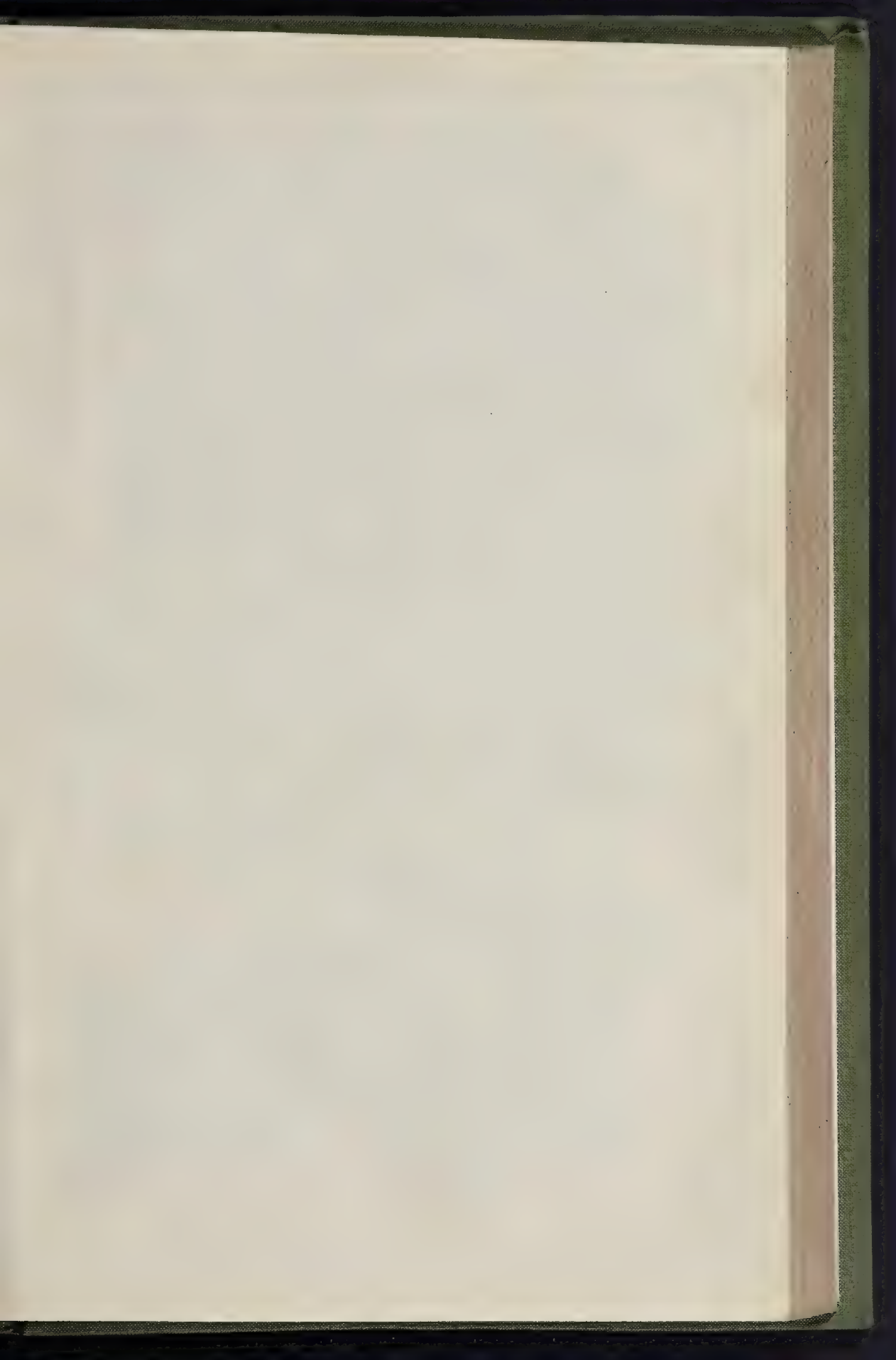
**Buckie.**—The new Roman Catholic Cathedral at Buckie, was opened on the 28th ult. The cost of the edifice, according to the *Banffshire Journal*, has been 3,600l., 2,000l. of which were raised by the congregation, about 700l. or 800l. by one day, and about an equal sum by the bishop from his own private purse. The congregation do not much exceed 400 in number.

#### CERTIFICATES FOR DISTRICT SURVEYORSHIPS.

At a meeting of the Board of Examiners of candidates for district surveyorships, on the 21st ultimo, the Board recommended to the Council of the Institute for certificates, Messrs. M. D. Wyatt, Joseph Lavender, and R. G. Aitchison, jun. There were several other applicants.

\* One consideration for the judges, namely, accordance or otherwise on the part of the designs with the instructions, may have been overlooked by our correspondent.









SELECTED DESIGN FOR THE FOREIGN OFFICE.—MESSRS. H. E. COE AND I. H. HOFLAND, ARCHITECTS.





SELECTED DESIGN FOR THE WAR OFFICE.—MR. HENRY D. GARING, ARCHITECT.







THE GOVERNMENT OFFICES.

THE REPORT.

We have now the pleasure to lay before our readers, views of the two principal designs for the Government Offices, to which were awarded premiums of 800*l.* each—one, the design for the War Office, by Mr. H. B. Garling, and the other, the design for the Foreign Office and Residence, by Mr. H. E. Coe and Mr. H. H. Holland. For information, as to the internal arrangements, we may refer to the notices of the exhibition at Westminster Hall, which appeared in our pages, where we have given a complete account of each of the designs. Mr. Garling's design will be found described as No. 77, with the motto "Fortiter et Fideliter," at page 303; and Messrs. Coe and Holland's, as No. 94, with the motto "Utilitas," at page 314. It will be seen from these notices that the *plans*, in both cases, offered many points of interest as regards the purpose of the building. The particular offices of the departments of War and Foreign Affairs, we may remind our non-professional readers, were proposed to stand on a site to be obtained between Downing-street and Charles-street,—the War Office to be next Parliament-street, and the Foreign Office at the other end, from which points our views are supposed to be taken. Mr. Garling's design for the Foreign Office was also described by us. We observed at the time, on the fact of the great resemblance in his designs to well-known buildings in Paris.

Since we last referred to the subject of the competition, the report of the judges has been printed, as a portion of a return to an order of the House of Commons, for a copy of a letter addressed by the First Commissioner of Works to the Lords of the Treasury, on the 30th of June, furnishing his report of proceedings with a copy of the particulars given to the competitors. The "Report" of the judges supplies nothing more than we have printed in the list of the designs to which premiums had been awarded,\* and in the matter which we gave (anticipating the Report) at page 383, except reduced copies of the two plans which were supplied with the instructions; the statement that the three last numbers in each list of the War Office and Foreign Office designs, entitled to premiums of equal value, were placed according to their numbers in the Exhibition, and without regard to relative merit; and the following leading paragraph:—

"In making these recommendations we desire to observe, in the first place, that we were not in possession of any knowledge as to the sum which Her Majesty's Government might propose to the House of Commons to expend upon these works. The designs before us were unaccompanied by estimates, and did not admit of any accurate calculation with regard to their probable cost."

ISLINGTON.

A CLEAR, precise, and well-arranged report, under the Metropolitan Local Management Act, by Mr. John Layton, the able vestry-clerk of St. Mary's, Islington, showing the proceedings of the vestry, the works commenced and completed, with other details, has been issued in a printed form.

From this report it appears that there are nearly 50 miles of roads and 100 miles of footpaths under the jurisdiction of the vestry, and kept in an efficient state of repair. The cost of labour has amounted to nearly 3,000*l.* The outlay for materials has been 3,631*l.* For new paving and relaying pavement by the contractor, 2,763*l.* 9*s.* 3*d.* Nearly 400 estimates have been prepared for paving and road-making, 135 of which were to be paid for by private parties.

About 2,000 notices for the removal of nuisances have been served. The medical officer of health and inspectors of nuisances have visited 1,736 houses: 364 houses have been whitewashed and cleaned; 1,159 cesspools filled up; 63 houses ventilated; drains amended or laid in from 1,250 houses; 1,226 water-closets made or amended, and painted and trapped; water supply laid on to 1,302 pinched closets; 758 dust-bins constructed, and 272 old dust-bins covered. In three courts, water-cisterns have been provided for domestic purposes. Proceedings have been taken in twenty-seven cases against persons carrying on noxious trades, especially at Belle Isle, and the result has, in most instances, been successful. The surveyor of sewers, drains, and buildings is now

engaged in making a survey of Belle Isle, with a view to its effectual drainage. In order to prevent the objectionable practice of conveying patients suffering from contagious diseases to the hospital in street-cabs, the vestry have provided three ambulances, and thereby supplied a want which had been long felt and loudly complained of.

On the 1st of January, 1856, the number of assessments in the parish was 16,145, and the amount of rental was 491,100*l.* The number of assessments now is 17,257, and the amount of rental 523,597*l.*

ISLINGTON-GREEN.

In former times the "village greens" and the common lands attached to boroughs and cities were held in great respect as places of recreation and for other useful purposes. These commons were, in many instances, of great extent, and were more or less cultivated and cared for by the various corporations, and to these spots the inhabitants could send their cows and horses to be fed, clothes to be bleached, &c. As time passed on, several of these corporations became small bodies in comparison with the great increase of those inhabitants who were not "Freemen"—that is to say, who had not availed themselves, by serving an apprenticeship or otherwise, of the use of the ancient corporate rights; and it has so happened that these bodies dwindled away to a few who have cast covetous eyes on property which was entrusted to them for other purposes, and divided it into shares, which have been built upon and enclosed. Fortunately a number of these commons were still existing at the time of the passing of the Test and Corporation Acts, and will be now preserved for the use of future generations. Where the common lands have been divided, and in other ways appropriated to a use for which they never were intended, it is evident that a great act of injustice has been done by the trustees to the community. The other open spaces in parishes such as the village greens, although of less extent, have also an eminent claim to preservation, and their utility becomes greater as these little bits of public property become surrounded by houses. In London the very name of the Green has a pleasant and refreshing sound, and it is to be regretted that the greens have generally been so little cared for. Clerkenwell-green, although covered with paving-stones, and encroached upon by the Sessions-house—a building most unpleasant to the sight—is, notwithstanding, an open area of the very greatest value to the inhabitants. Newington-green, Puddington-green, Kensall-green, and twenty other greens of villages now forming parts of the metropolis, will, if properly cared for and preserved, be in like manner breathing-places for crowded populations. Amongst the London greens that of Islington is not the least celebrated, and the great increase of building in the neighbourhood renders its preservation of considerable consequence,—indeed, we can scarcely understand the feeling which prompted the idea of covering a large portion of it with a new vestry-hall. Such an act would, at the present time, be as bad as the appropriation of the common lands to which we have alluded, and would, we think, be opposed to the wishes and general intelligence of the parish. It will not be long before the turnpike-gate is moved out of town, and that singular structure used as a police-station surely cannot much longer exist in this exposed situation, unless it should be kept in a state of maintenance by some other building, and that removed, we should have an open area which, with care, might be made ornamental, and would, undoubtedly, be very useful. Let but the vestry-hall be built, then it is by no means improbable that it will be found necessary to enlarge the station-house, and other things may follow, when a beginning is once made, which will be the means of using up by those now in office a public area which should be honestly and faithfully kept open for the use of future generations.

THE BATTLE OF ISLINGTON-GREEN.

ALL those acquainted with the suburban outlets of London, know that there are very few of the "greens" of our forefathers remaining, as Camberwell, Paldington, Bethnal, &c. (all verdure at Clerkenwell has long succumbed to public buildings). Borrowing, therefore, from a popular song, addressed to a "Woodman," to spare a time-honoured "tree," we might, supposing such an appeal to any parochial officer of good taste had been anticipated as necessary, have said, "*Vestryman, spare that green.*"

Otherwise, however, thought the newly-instituted parochial parliament of Islington: an abnormal "vestry-hall" was the first stepping-stone to their ambition; and, however innocent this taste may have been, they sinned deeply regarding the site. Rejecting eligible and central places as a disused nursery ground, "Myddleton-hall," the purchase or periodical use of which they might have easily secured, they made a "grab" at the "green,"—seemingly as actuates

some tyrants to unfortunate donkeys,—because they thought it "had got no friends."

"Islington-green" was given to the parish, as "a public area for ever," by the Marquis of Northampton, Lord of the Manor of Canonbury, whilom, belonging to St. Bartholomew's Priory, Smithfield, about eighty years ago. The space, enclosed about ten years ago, and in a bald and clumsy manner, capable now of tasteful improvements, is hardly an acre and a half. Still old Islingtonians, and more recent ones of taste, were determined (honour to their example), not to "stand" it; and though a small majority of vestrymen, on the 11th of July, determined that the green should be used, being greeted at their next meeting, on the 18th, by a memorial, signed by 450 Islingtonians, magistrates, clergymen, dissenting ministers, medical men, &c. with the full knowledge that a similar protest was going to the Marquis of Northampton, they thought "the better part of valor was discretion," and promptly succumbed, and so the green is, for the present, saved, some other site being directed to be chosen.

Thus, those who wished to defend "old paths"—*stare super antiquas vias*—have been successful, and a time-honoured patch of common verdure, however comparatively insignificant or unattractive, as now drearily laid out, has been preserved, and a worse appropriation negated. But, as we live in a Christian land, "let by-gones be by-gones." Let the defeated vestrymen think how nobly and permanently they may redeem the momentary dissatisfaction of the public. "Public baths and washhouses," here, as in any populous quarter where they are not yet existing, much needed—cheap, wholesome "lodging-houses for the poor" (for the word "model" is nearly superseded),—sanitary improvements—might yet make the battle of the green forgotten in brighter triumphs, attended by general approbation.

VESTRYMAN.

PROVINCIAL NEWS.

*Norwich.*—At the Norfolk Quarter Sessions, just held, a letter from the county surveyor, Mr. John Brown, was read, in which the magistrates were called upon to review his long services, and define his position, giving him a fixed remuneration equal to the work expected of him. Mr. Brown's salary, we believe, has been only 75*l.* a year!

*Chester.*—Some proposed new buildings in East-gate-street, designed by Mr. T. M. Penson, architect, are thus described by the local *Chronicle*:—"The erection in question will embrace three shops of large dimensions; the first and second floors over the row being intended for chambers or offices, access to them being obtained by a stone staircase carried up the front of the building as a campanile tower, with a highly-pitched roof. The whole design is strictly Medieval of the period of the fourteenth century, the front being supported by a series of Gothic arches, the windows of the upper part being of the same style, similar to those in some of the buildings in the old cities in Belgium. The whole front will be constructed of white stone, and the roof covered with Staffordshire tiles in pattern. Messrs. Dixons and Wardell have purchased extensive premises in East-gate-street and St. Werburgh-street, on the site of which they purpose erecting a bank, their present one being very inconvenient. We hope, adds our authority, that Messrs. Dixons and Wardell will follow Messrs. Brown's example, and erect a building of a similar style, as it is desirable that, in an old city like this Medieval or Elizabethan architecture should be adopted in preference to Grecian."

*Albury.* Almshouses have just been commenced at Albury-park, the seat of Henry Drummond, Esq. M.P. They are to be constructed of red brick and ornamented oak work. The building consists of a chapel, committee-room, and chambers for twelve inmates. Messrs. Pugin and Murray are the architects.

*Manchester.*—The designs for a graveyard-monument to the late Mr. Joseph Brotherton have been on view in the Museum, Peel-park. The cost of the monument will be about 500*l.* In addition to this memorial, a statue of Mr. Brotherton, by Mr. Matthew Noble, is to be placed in Peel-park. The designs for the cemetery memorial are of a miscellaneous character, as we have already mentioned.

*Halifax.*—The People's Park, the gift of Mr. Frank Crossley, M.P. for Halifax, is now well nigh completed. Though but twelve and a half acres in extent (in consequence of Mr. Crossley's inability to come to an agreement for the purchase of the adjoining land), its cost is upwards of 30,000*l.* It is situated in the eastern extremity of the town, contiguous to the mansion of Mr. Crossley, and to the almshouses recently erected by this gentleman at a cost of some 20,000*l.* The park has been laid out from the designs of Sir Joseph Paxton, and under the superintendence of Mr. Milner, curator at the Sydenham-gardens, and Mr. Dawson, formerly resident super-

\* See p. 371, ante.



intendent at the Sydenham-gardens. It will be completed in about two months.—A committee has been appointed at a recent public meeting for the purpose of carrying out resolutions in favour of the formation of public baths at Halifax.

**Scarborough.**—The Scarborough Cliff Bridge Company, in reply to advertisements soliciting estimates for work connected with the building of a sea-wall at the foot of the cliff to the north and south of the Spa, including the formation of a carriage-drive upon the wall at the north end, received the following:—Messrs. Wright and Sigley, Manchester, 4,900l.; Messrs. Smith and Cawood, Scarborough, 4,500l.; Mr. Shafto, York, 4,400l. The last-named is the successful competitor, his estimate being considerably below the supposed cost of the work as intimated in the last report of the committee of the shareholders.

**Silloth Bay.**—Much activity prevails at Silloth Bay in anticipation of the ceremony of laying the foundation stone of the docks, which is to take place, according to the *Carlisle Journal*, on the 4th of August. The jetty is nearly complete, having been carried out upwards of 1,000 feet, to a depth of 10 feet at low water mark. The landing stages and lighthouse are progressing. The wharfing is completed, and a line of railway has been laid along the north frontage. The coffer-dam and other works, necessary previous to proceeding with the masonry of the dock, have been constructed. A large pumping-engine has been erected to carry off the water from the land springs. Another engine has been erected to expedite the excavation of the docks. A diver is now engaged upon the jetty. The nucleus of the town is gradually expanding. Plans of the proposed town, prepared by Messrs. Hay, of Liverpool, have been lithographed. Among the various buildings projected is a Temperance-hotel and Boarding-house.

**Glasgow.**—The Kelvingrove of the Scottish poet is no longer the solitary rural retreat it once was, but is fast becoming a grove of houses, interspersed, however, still, with turf and trees. The portions of Kelvingrove-park and buildings in front of Park-quadrant and Cliff-terrace, have now been completed. The laying out of the park grounds is now finished, Sir Joseph Paxton's plan having been carried out as far as practicable. A number of additional walks and terraces has been formed upon the suggestions of Mr. Charles Wilson, architect. During the summer months, according to the *Glasgow Gazette*, from 30,000 to 40,000 persons visit the park each fair Sunday. On the Kelvingrove grounds are now two large guns and a mortar captured at Sebastopol in 1855. The buildings on the lands reserved by the town council for feuing have made rapid progress. Already the whole of Park-gardens and Park-terrace have been feued and built on. The houses are of a first-class character, and have been eagerly bought up by the principal merchants of the city.

#### SCHOOLS.

**Stone.**—The foundation-stone of new schools, in connection with the parish church of Stone, was laid by the Bishop of Lichfield, on Thursday, the 16th ult. The schools are being built on a site opposite the vicarage-house, containing about 1,700 yards of ground. They comprise school-rooms for 100 boys, 100 girls, and about 80 infants, with class-rooms, lavatories, and playgrounds for each sex, and a teachers' residence, &c. The schools will be built of dressed red and blue bricks, with stone dressings. The design is in the Decorated style of Gothic architecture, presenting two projecting gables with tracery windows, a receding centre with tracery dormer windows, and an open arcade stretching between the two gables, the archways being enclosed with ornamental iron railing and gates. In the centre of the roof there is a bell-turret, ornamented with gargoyle and finials, broached canopy, and weather vane. The roof is to be open, timbered, stained and varnished, and the floors boarded. The design was furnished by Messrs. Ward and Son, of Hanley, architects, and the builder is Mr. John Turner, of Stone. The entire cost of the building and fittings will be about 1,500l.

**Liverpool.**—St. Francis Xavier's (R.C.) Schools, Hague-street, Liverpool, erected for the accommodation of 1,000 children, of red sandstone, in 1854, from designs, in the Early Decorated style, by Mr. Joseph Spencer, architect, and under his immediate superintendence, at a cost of upwards of 3,000l. are about to be enlarged. The present contemplated erections embrace an enlargement of the infants' school, doubling its area, and the addition of a girls' class-room. The estimates are as follows; quantities supplied:—

Langedale and Holme.....	£798	0	0
Wm. Oliver.....	794	0	0
J. H. Mullen.....	720	0	0
Nicholson and Ayre.....	670	12	6
T. Wiley.....	650	0	0
G. Rome (accepted).....	629	0	0

**Nottingham.**—The foundation-stone of girls' and infants' Sunday and day schools, in connection with St. Matthew's Church, Upper Talbot-street, Nottingham, was laid on the 21st ult. by Lady Middleton. The building will contain two school-rooms, each 58 feet long by 18 feet broad, for the use of the girls; several small class-rooms, for the infant scholars, and a residence (under the same roof) for the mistress. The estimated cost is about 1,200l. The architect is Mr. C. H. Edwards; and the builders are Messrs. Harvey and Hill.

**Ripponden.**—The new national school at Triangle, which has been in course of erection for some time, is now nearly completed. The erection stands upon a plot of building ground near to the high road, and consists of a large school-room, with class-rooms and master's residence attached. The style adopted is the Early English, with modifications, and the design is by Mr. Pritchett, of Huddersfield, architect.

**Willington.**—Mr. Robert Stephenson, M.P., according to the *Gateshead Observer*, is about to erect public schools at Willington, his native place.

**South Shields.**—Dr. Winterbottom, of South Shields, is said to have announced his intention of appropriating 20,000l. for the purpose of erecting a college for seamen; the money to be available at his death.

#### PUBLIC BUILDINGS IN THE PROVINCES.

**Reading.**—At a recent meeting of the Local Board of Health, a report was received from a committee appointed to inquire into the subject of the erection of abattoirs in this town, in which they strongly urged the desirability of such a plan, as the only adequate means of abating the great evils now acknowledged to exist. The report was adopted by the Board, giving also powers to the committee to carry out the object proposed by them, first laying the plans and estimates for the same before the Board for approval.

**Hertford.**—At a special meeting of the Hertford town council, held to receive and consider the estimates for the alterations in the corn exchange, Mr. Evans, the architect whose plans had been accepted, being present, there were only the two following tenders:—Mr. S. Andrews, 1,240l.; Mr. Wingfield, 740l. Mr. Evans stated that, having made a careful estimate of the work, he was prepared to say that the lowest estimate was a fair and moderate one. The amount seems, however, to have taken the council by surprise, and, after some discussion, they determined on adjourning the consideration of the tenders. The building, if improved on the plans of Mr. Evans, according to the *Hertford Mercury*, would be not only an adequate corn exchange, but well adapted for the purposes of a public library, and also be an ornamental addition to the town.

**Weston-super-Mare.**—It is intended to construct a suite of public rooms upon the site known as "Fair-lawn," near the Royal Hotel, at Weston. The undertaking will include an assembly-room, about 70 feet by 35 feet, and a smaller room or hall, besides a reading-room, with ante-rooms. The projector is Mr. E. Locock, who is building a range of shops and dwellings in the same locality.

**Tockbury.**—At the Severn New Works, on Saturday, the 12th ult. a movement of the earth near where the large engine is stationed on the works in the Severn Ham was observed, and by the evening the engine-house was found to have sunk about 4 inches. On the following Monday morning an earth slip near the lock took place, doing, however, little or no damage.

**Liskeard.**—The tenders for the erection of the new town-hall were delivered on the 22nd ult. The building is to be principally of granite, procured from the Cheesewring or Brownigill quarries, and from the basement to the top of the roof will be about 50 feet high. The tower for the town clock will be 63 feet high, underneath which is the entrance-door to the reading-room belonging to the Mechanics' Institute. The principal entrance to the town hall will be in Fore-street, and two other gate entrances to the butchers' market in the same street. The interior dimensions of the town-hall will be, 53 feet in length, 28 feet 6 inches in width, and 23 feet in height; the size of the present room being 65 feet by 17 feet 6 inches. The reading-room will be 27 feet 3 inches by 17 feet 5 inches, adjoining which will be the county court judge's room; and at the other end, over part of the old Tin Court, a public office, 14 feet 3 inches by 14 feet; the other part of the Tin Court having a glass roofing, with the butchers' market underneath the whole. The height of the market will be 16 feet.

**Tamworth.**—At a meeting of the local board of guardians on the 18th ult. tenders were received for the erection of the new workhouse, according to the plans of Messrs. Bridges and Everall, of Birmingham. The tenders varied in amount from that of Messrs. Ferguson and Allen, of Nottingham, 4,950l.

to the highest, 6,140l. The tender of Messrs. Ferguson and Allen was accepted, subject to the approval of the Poor Law Board.

**Stockport.**—At a public meeting here, it has been resolved to call upon the corporation to erect public baths for the town. The mayor has been requested to call a special meeting of the council to consider the subject.

**West Hartlepool.**—About two years ago, says the *Durham Advertiser*, the sum of 1,600l. was laid out in the building of commodious slaughter-houses a short distance from the town, and by a mandate the knights of the cleaver were forbidden thenceforth to slaughter within the precincts of the town, the commissioners naturally reposing in the belief that thenceforth all the slaughtering would of necessity be done in their new shops. A number of butchers took the "huff" at the "tyranny" of the commissioners, and in revenge built themselves slaughter-houses outside the town. The commissioners' shops, therefore, lost the anticipated custom, and now the proceeds are less by 70l. per annum than the interest of the money and working expenses. To remedy this state of things, the commissioners are now setting their wits to work, and one notable project is to convert one-half of the slaughter-houses into dwelling-houses, some of the body finding out that residence in such a locality is not unwholesome!

**South Shields.**—The opening of a new market, at the high part of South Shields, took place on the 18th ult. The market stands on a plot of ground situated at the junction of West Holborn and Commercial-road, and consists of twelve shops surrounding a central area, with two entrances at the north and south angles, and a minor one in Commercial-road. The main entrances are through rusticated archways, flanked by Tuscan columns, and surmounted by carved pediments. Over the south entrance stands a clock-tower, 34 feet high, surmounted with a gilded vane. The materials of the building are brick and stone, with wood-framed partitions between the shops. In the centre of the enclosed area is an ornamental water-basin and gas-pillar, and proper conveniences are provided for the market people. The whole of the shops are to be lighted with gas, and have open timber floors, hoarded over and painted, with projecting eaves. The enclosed area and the shops are asphalted.

**Chester-le-Street.**—The new union workhouse, erected at the south end of Chester-le-Street, says the *Gateshead Observer*, was visited by Mr. Hirst, poor-law inspector, on the 16th ult. It was, he said, a model workhouse. Fronting the road is a building comprising porter's lodge, board-room, relieving officer's and clerk's offices, probation and vagrants' wards, &c. &c. all conveniently arranged. The gardens are behind; and beyond these is the workhouse, with an elevation the effect of which is marred by uncouth walls, erected by command of the Poor-law Board in London, for the commendable purpose of preventing communication between the young persons within and the adults in the grounds without. Mr. Matthew Thompson was the architect of the workhouse. The principal contractors were Messrs. Currie and Gibson; the plumber Mr. Bailey.

**Alston.**—The foundation stone of a new Town-hall was laid here on the 15th ult. Upwards of 1,300l. have been subscribed in this small out-of-the-way place for the purpose.

**Berwick-upon-Tweed.**—The foundation stone of a new Corn Exchange was laid here on the 4th ult. The architect is Mr. John Johnston, and the builder Mr. Matthew Reed.

#### STAINED GLASS.

**Ripponden.**—The church of this secluded village is about to be adorned by the east window being filled with stained glass. The window is a triplet one, and forms a kind of apse to the church. The expense will be defrayed by a lady who formerly resided at Ripponden. Mr. Bell, the artist (who has recently been employed upon the parish church windows), will produce the design and the estimate.

**Halifax.**—Recently three stained-glass windows have been added at the parish church of Halifax. About two years ago the large centre window at the east end of the church was filled with stained glass, and the result was so satisfactory that many of the more active of the congregation determined to carry out still further the improvement of the edifice at various points. A subscription was accordingly entered into for the purpose. Now, the windows on each side of the central east window are both completed. The design of that on the south side is the "Preaching of John the Baptist." The forerunner of the Saviour, surrounded by a group of Pharisees and Sadducees, attired in costly apparel, occupies the centre of the picture. The whole of the figures are placed under canopies. For this window Mr. Bell of London, was the artist. The north window is also from a design



by Mr. Bell; the subject being the "Healing of the Cripple at the Beautiful Gate of the Temple." The apostles Peter and John are surrounded by a group of wondering people. The cripple is in the attitude of rising. Another painted window has been filled in the south chapel, sometimes termed Dr. Holdsworth's Chapel. The subject is "The Raising of Lazarus from the Dead." Near the Saviour are figures of Martha and Mary. Other alterations are being carried on within the precincts of the church.

**Maidstone.**—A stained-glass window has recently been placed in the south side of All Saints' Church, Maidstone, by the Rev. T. A. Carr, curate, in memory of his sister. On one side, in the centre of the two principal lights, is a representation of the laying of our Saviour in the tomb, and, on the other side, an illustration of the visit of Mary Magdalene and Mary the mother of James, to the sepulchre, after the resurrection. At the head of the window are monograms descriptive of the name and attributes of the Redeemer. The remaining portions are filled in with ornamental devices, &c. The work has been executed by Messrs. Powell and Sons.

# PROPOSED ROOMS FOR THE INSTITUTE OF ARCHITECTS, AND GALLERIES FOR THE ARCHITECTURAL EXHIBITION.

Sir,—Will you permit me to call attention through your columns to the great importance of the undertaking, now in hand, for providing spacious rooms for the Royal Institute of British Architects, and a set of galleries, equal to any in London, for the Architectural Exhibition? This, however, is not all, for there will be accommodation for other bodies connected directly or indirectly with the art.

Surely the conviction must force itself upon every one, that this is indeed a most important opportunity, and full of advantages, which on no account must be lost, and which are likely to bear the very best fruit.

The Institute will gain greatly by superior accommodation, and specially by the convenience arising from the proximity of the galleries; and the Exhibition Committee will at last have the satisfaction of seeing the exhibition open at the right time.

It is intended to devote the whole of these premises especially for the use of architectural art; and there are many kindred societies, it is to be hoped, who will lend their aid for the common good, and who will join in realising a common advantage.

The now pressing necessity is to subscribe the necessary funds; and it is desirable that the whole should be kept in the hands of the profession. I trust, therefore, that when the formal appeal is made all will be ready to do what they can; and if so, the result will be attained easily, and without special effort on the part of individuals. Hoping your support and encouragement will be afforded us at this important moment,—I am, &c.

JAS. EDMISTON, Hon. Sec. Arch. Exhibition.

## DISTRICT SURVEYORS AND DANGEROUS STRUCTURES.

### METROPOLITAN BOARD OF WORKS.

THE Board at its usual meeting on Friday last, reported on the subject to the effect:—That in conformity with the resolution of the Board of the 17th July instant, they have determined to send a memorial to the District Surveyors' Association for the districts under the Metropolitan Building Act, stating that certain erroneous, public, and official statements to their prejudice had recently been published in connection with the accident of the falling of certain premises in Tottenham-court-road, vindicating their official conduct, and requesting that this Board, having to pass the accounts of the charges of the Police Commissioners' officer, in respect of dangerous structures, would institute an inquiry into the mode in which the provisions of the second part of the Metropolitan Building Act had been carried out, more especially by the memorialists. That the committee had considered the allegations in that memorial, but had deemed it to be beyond their province to institute an inquiry into the various matters referred to in that document, but they deemed it of importance to call the attention of the Board to the disadvantages which they considered to be attendant upon the system they are informed is at present in use, of employing one surveyor, not being a district surveyor, in relation to the whole, or a large proportion of the ruinous structures which become the subject of proceedings by the Commissioners of Police for the Metropolis, and to the public benefit which would result from the habitual employment of the district surveyor in those cases which may arise within his own district. That the committee considered that the primary intention of the Legislature in the 8th section of the Building Act, by which the commissioners are directed to require a survey of the ruinous structure to be made by the district surveyor, or by some other competent surveyor, was that the district surveyor should be employed wherever practicable, and that the employment of another surveyor was to be regarded as exceptional only. That that opinion seemed to derive corroboration from the fact that the same section empowers the district surveyor the duty of making known to the commissioners any information he may receive with respect to any structure being in a ruinous state. That the fact that this duty is to be performed by the district surveyor would seem to point to an official employment of the same functionary in the subsequent stages of the transaction. That the district surveyor, as the party taking the first step in relation to the matter, by being compelled to give notice of such ruinous

structures as may come to his knowledge, is in possession of information which qualifies him for effectively conducting the proceeding in its ulterior stages. That it would appear from the accounts of charges submitted by the Commissioners of Police to the Board for approval, that the employment and payment of the district surveyor, in addition to the other surveyor, are even now sometimes indispensable. That the matter has been initiated by a district surveyor, the subsequent employment of another surveyor having such multifarious and widely extended duties to perform, is calculated to introduce a divided responsibility which the committee considered it would be for the interest of the public to avoid. That the local knowledge, limited district, and special competency of the district surveyor, seem peculiarly to fit him for the duty in question, and the committee thought his employment would obviate the sub-division of authority and responsibility which appear attendant on the present system, and they suggested that a respectful representation to the above effect be made to the Metropolitan Commissioners of Police.

Also stating that they had under consideration the communication from Captain Labalmondiere for the appointment of fees for special services in connection with dangerous structures, referred to by the Board on the 17th instant, and were of opinion that the following are the proper amounts to be allowed to the surveyor appointed by the Commissioners of Metropolitan Police for the undermentioned services performed under the 78th section of the Metropolitan Building Act:—

### Part II. relating to Dangerous Structures.

For giving instructions and superintending the erection of shoring (including when requisite), and hoarding to a dangerous structure, and examining and certifying the contractor's account for the same ..... £3 10 0  
For shoring without hoarding, or hoarding without shoring, and examining and certifying the account ..... 0 7 6  
The commissioners' notice not having been complied with, making application at the police-court for the issue of summons by commissioners' direction ..... 0 5 0  
For visiting the structure before the hearing of the case, attending the police-court to give evidence, and obtaining the magistrate's order ..... 0 5 0

Also stating that they had considered the amounts to be applied to cases enumerated in the communications above alluded to from Captain Labalmondiere, and submitting the same for approval by the Board.

### ST. JAMES'S-PALACE.

WHEN this was the sole town residence of George III. and his family, when it served for the levees, courts, and royal festivities, the attendances were probably not so great as now: at any rate, there never was such an outery against its want of extent and convenience as has lately been bruited amongst the aristocracy, and re-echoed through the whole range of the press. A pile of several abodes and ancient suites, somewhat resembling Chelsea Hospital, and certainly far inferior to any portion of Hampton-court,—it is ill calculated for any of the objects to which it is dedicated, whether residential or otherwise. The domiciles of the whole nation have been vastly improved since the date of its foundation, and so also has the palace of the monarch of Britain been constructed on the modern scale of style and comfort. St. James's Palace is now but an occasional assembly-room, opened, as Almack's or the Hanover-rooms, but not one tithe so often, for the reception of visitors: this is as to the State apartments: for the rest of the pile, it is a lie-by—something of the old workhouse kind—for officials, pensioners, and a captain's guard.

All this occupies a site which is most certainly one of the best in London. It ranges square between Pall-mall and the Park, to which it has a frontage of 450 feet (exclusive of the colonnade on the north, and of the projecting entrance and stack in the stable-yard), with a depth of 462 feet between the Park-wall and the pavement in Pall-mall. Here is a plot for a magnificent structure as large as Somerset House, and even larger than the central mass of Buckingham Palace,—a plot which, as to the character of the present buildings, is wholly thrown away; and which, as to the objects it subserves, is in a torpid and inert condition.

It would occur to passing observers of the works now in progress; of some that have been threatened, but suspended; and of others which are promised, and perhaps reserved for the next generation; and that the building funds of the nation and the energies of the Board of Works, aided by the professional talent which we have lately seen in competition, could not be better expended than for the purpose of raising a fabric here worthy of the age, and suitable to the occasions of the Court, as well as to the splendid position in the West-end, of which it ought to be the main feature.

In any new elevation, there should be an opening reserved, so as to give a vista into the park; or, at least, the "pian terreno" should be surmounted with an interval, culminated, as in Somerset House, to afford a glimpse from the ascent of the street, and from Piccadilly, of the foliage behind, and mayhap of one of the St. Stephen's towers. At the same time, in order to accomplish Pall-mall (the most admirable palatial range of London), and to exhibit Lord Ellesmere's and the Duke of Sutherland's noble mansions, the unseemly and dislocated range of Palace-row and Little St. James's-place ought to be withdrawn from

the splendid opening which they shut out, and from the propinquity which they so irrespectively degrade.

As to the erection of State reception-rooms lately recommended in the *Builder* adjacent to her Majesty's palace, in Buckingham-gardens; it is manifest that such an addition would render the north wing of the palace gloomy, if not unhealthy; that it would occupy pleasant grounds, not now too extensive; and that it would not enhance the value of any architectural pretensions (if any) to which the royal abode may lay claim.

It would be vain to say one word as to the style of architecture to be employed, or to exacerbate the bitter strife now raging between the admirers of the ordinal and the devotees to the Gothic: suffice it, that above all, the building should be a *chef-d'œuvre* suitable to the most glorious site in London.

### CLERKENWELL IMPROVEMENT.

#### VICTORIA STREET.

MUCH discontent and dissatisfaction prevails at the dilatory proceedings of the City authorities with regard to the new street, considerable loss and inconveniences having been experienced by large shopkeepers, from the removal of an entire neighbourhood, upon which they had been more or less dependent for support and means of subsistence. In this view of the matter they would have an equitable claim for compensation and relief.

The City authorities are following, and have for some time past been flirting with the North Metropolitan Railway Company. How far they are fulfilling the requirements of the Act under which they were constituted for the formation of a new street, and whether this is strictly compatible with their powers and jurisdiction, is yet to be seen. These long delays have inflicted great injury on Clerkenwell, as relates to property circumjacent to the line of intended new street, preventing improvements from the prevalent uncertainty; and the number of empty houses is alarming.

What I am more particularly desirous of calling the attention of your readers to is this,—that the new street and its concomitants are being sacrificed to the veriest ignis fatuus that ever lured any public body from the performance of a plain duty. In the present state and aspect of the money market, the North Metropolitan is simply an absurdity; and that money will be less stringent is very improbable.

#### A RATEPAYER.

### OPERATIVE MASONS' BENEFIT SOCIETY.

THE forty-seventh anniversary of the Operative Masons' Benefit Society was celebrated at the High-bury-barn Tavern, Islington, on Tuesday last, the 28th ult. The members and their friends, including some of the principal builders, or their representatives, to the number of about 100, sat down to an excellent dinner at half-past four o'clock.

In the absence of their president, Mr. C. H. Smith was called to the chair. After the usual toasts, the secretary read a statement of the society's affairs, receipts, and expenditure, by which it appears to be progressing, slowly and surely, in the right direction: the numbers increase, the funds improve. Still, it is rather surprising that a society so firmly established, during nearly half a century, should not be more generally known and appreciated by the working stone-masons. At about eight o'clock there was a general disturbance in the room, though by no means a disagreeable one: a few of the other sex, gaily attired, were observed peeping in at the door, and were gradually pressed forward by others from behind. Almost like magic, the chairs and tables were heard rumbling from the centre to the sides of the room; the music struck up a quadrille; all faces were lively and cheerful. Off they went on the "light fantastic toe," and continued in action until midnight, apparently highly gratified with each other's company. If the "carvers" had it all their own way at dinner, the "setters" were at a premium in the dance.

### NOTES UPON IRON.

(From our Correspondent at Wolverhampton.)

THE completing of old orders and the supplying of a front-hand-to-mouth demand, now being made, keeps most of the South Staffordshire ironmasters pretty fully occupied. As a whole, however, the trade is "quiet;" and this was the general reply which met the inquiry made by one master of the other at their customary weekly gatherings at Wolverhampton and at Birmingham.

The orders on export account are for the most part forwarded *via* Hull: some are sent to London; very few to Liverpool; the Americans, who seem to be able to do either with or without iron, having been compelled to check their demand by their speculations in land in the western states. The letters by the *Persia*,



which were delivered after a passage the shortest on record, and met no orders worth mentioning.

The activity of the export trade to the northern ports arises first from this being the "season" for the Hull trade, and next, from the late hostilities having increased customers' necessities. The reductions in the Russian tariff appear as yet to be only imperfectly understood in this district, the official list not having hitherto come to hand. There can be no doubt, however, that the pig makers of the Cleveland district in particular will be benefited by the reduction; and the tin and japanned wares of Bilston will in consequence be in improved demand. The Russian weights and coins only have been mentioned in all the printed statements that we have seen of the alteration. In English, supposing the exchange to be at 38, which is a fair rate, 15 copces per pound upon pig iron will be 1s. 5d. per cwt.; 50 copces per pound on bars of half an inch thick and upwards, 4s. 9d. per cwt.; and 90 copces per pound upon plates will be 8s. 6d. per cwt. Under the old tariff pigs were altogether prohibited, except in a few instances in which permission was granted to engineers to import stated quantities duty free.

There is a tolerably good demand from home markets, the descriptions indicating at once an extended application of steam to the requirements of navigation and commerce, and a free use of iron as a constructive material in stationary buildings and for sanitary purposes. The casting firms, with whom large contracts are generally made, are reported to be active.

We have heard of no extensive transactions at prices different from those quoted in our list.

The "make" of malleable iron has been checked by the men at several large works keeping holiday at the Tipton "wakes."

#### FOREIGN INTELLIGENCE.

*Another National Art Exhibition.*—That *ultima Thule* of Europe, Christiania, the capital of Norway, has also its art-exhibition, of 120 exhibitors and 572 articles. The exhibition is especially interesting by its landscapes after nature, depicting faithfully the character of these distant northern sceneries.

*Stuttgart.*—An exhibition of agricultural and other national produce will be held here during the summer.

*Innsbruck.*—On the occasion of the festival of the opening of the North-Italian Railway, an exhibition of industrial and other national produce, as well as arts, will take place.

*The Munich Glyptothek* was lately endangered by a fire bursting out in the roof, where a man repairing the copper had left some burning charcoal; however, it was soon got under.

*France.*—The Canal of Carpentras.—This important work, planned since 1771, has at length been completed and inaugurated. Messrs. Parvay and Comte are the engineers who have accomplished the task. The Canal of Carpentras, which now leads the waters of the Durance into the midst of the Provence, has a length of 70,000 metres, and its *concession* is for 6 cubic metres of water. The surface which it is capable of irrigating is 20,000 metres, comprising the lands of eleven communes. It has been constructed at an expense of 2,500,000 francs, and has occupied 350,000 days of labour.

*The Summer Phase of Social Life.*—The *manorial* life, so to say, on the continent, during the summer months, is entirely disappearing, and has made room for the thermal and excursion life. The hotels in the frequented parts of Europe begin to assume the shape of castles and palaces; still, they do not suffice for those pilgrims to the shrines of nature, who now traverse the land in all directions.

*Asyles in the Alps.*—A sum of 50,000 francs from the legacy of Napoleon, has been devoted to build substantial sheltering places on the high mountain tiers of the Department des Hautes Alpes, in France.

*Berlin: Academy of Sciences.*—The physico-mathematical class has renewed the following *puce* (of 100 ducats) for the year 1860, as the hitherto solutions were unsatisfactory:—"To explain the theory of the hydraulic cement (*Mörtel*), as the chemical processes and combinations resulting from the application of the different sorts are not yet known. The Academy wishes for a systematic and detailed examination of the products of the different combinations of cements, with the various rocks, granite, sand-tone, &c." The essay may be written in either French, German, or Latin.

*THE ROYAL ACADEMY OF ARTS.*—The rooms were lighted up on Wednesday night last, and the President and Council received a large number of visitors to take a final look at the pictures. 2,000 cards, it is said, were issued. The premier was amongst the guests.

#### SONG ON PUGIN'S IDEA THAT THERE WAS NO CHRISTIAN ARCHITECTURE BUT GOTHIC.

TIDY WINN: I tell you I never was written about the time of the abolition of A. W. Pugin's *Contrasts*. It was privately circulated, and makes me little noise: a correspondent of *Notes and Queries* wants to know who was its author, or any information about him? Some of our readers may know.

"Oh! have you seen the work just out  
By Pugin, the great of Balder?  
'Architectural Contrasts' he's made out  
For Protestants to leer lead."

The Catholic Church, she never knew  
That Mr. Pugin taught her,  
That Orthodoxy had to do  
At all with bricks and mortar.

But now 'tis clear to me and all,  
Since he's published his lecture,  
No church is Catholic at all  
Without Gothic Architecture!

In fact, he quite turns up his nose  
At any style that's recent;  
The Grecian, too, he plainly shows  
Is wicked, and unchristian.

There's not a bit of pious taste  
Ever since the Reformation;  
'Twas Harry the eighth, the nasty baste,  
That introduced the Grecian.

When they denied the Truth outright  
O Pagan Domination;  
They threw in the 'Composite'—  
That great Abomination.

Next thing their friends to build 'dozing-pens'  
In the most systematic way go:  
They'd be kill, they say, the other way,  
With rheumatics, or lumbago.

Some raise a front up to the street,  
Like our Westminster Abbey;  
But then they think the Lord to cheat,  
And build the back part shabby.

For stuccoed bricks, and sick-like tricks,  
At present all the rage is;  
They look on our old, those fine old min'  
In the 'pious' middle ages!!!

#### INSANE COMPETITION AMONG ARCHITECTS, AND ITS CURE.

SOME months since a board of guardians advertised in your Journal for plans for a new workhouse, not to exceed in cost 11,000*l*. A plan was selected, tenders advertised for, and thirteen builders bestowed their time and skill in estimating the cost of the selected plan: their lowest tender was upwards of 22,000*l*. The term "blind builders" has often figured in the pages of the *Builder*, but in this instance surely "blind architects" might be substituted for builders. What step will the board of guardians take in this matter? It seems to be a very usual custom with the youthful members of the profession to design the handsomest buildings possible for competition, without any regard to their cost, while the elder or more experienced architects have but slight chance with them, inasmuch as their position depends on truthfulness of estimate, and their plans, in consequence, have but a poor prospect of competing with the flowing adour of the youthful pencil, uncurbed by figures of arithmetic.

Surely something should be done to make fair footing for competing architects, save builders the immense annual trouble they have in making useless calculations, and bridle the industry of youthful architects with kindness of dealing to their more experienced brethren. Cannot committees insert in their conditions to architects, not only that they will refuse to pay the premium on the selected plan, if beyond the stipulated sum, but that such architect shall pay them all the expenses incurred by advertising, &c. and pay in addition a fine of ten per cent. to the Builders' Benevolent Institution on the amount of lowest builder's estimate beyond the sum proposed to be expended? Should a rule of this kind be generally adopted, it would induce youthful architects to acquire some knowledge of estimating, and give some guarantee to the fairness of competition among architects.

J. F. C.

Our correspondent appears to forget that competing architects have been led into this disagreeable mode of proceeding by the conduct of committees in not adhering to their original stipulations, but selecting the most showy design, without reference to cost.

\* Pews.

#### IMPROVED DWELLINGS AT KENSINGTON.

AN influential meeting of the inhabitants of Kensington was held on the 21st ult. for the purpose of making more extensively known the objects of the Kensington Association, on limited liability principles, for providing improved dwellings for the labouring classes. The Duke of Argyll presided. In opening the proceedings his grace said that there were a large number of families crowded together in Kensington, and he thought they should do all to remedy this state of things that lay in their power: it was their duty to do so. Leaving Parliament to deal with the question as they thought best, they must themselves try to do it with it, and he could see no other mode but that of joining their exertions to those of others in other parts of the metropolis in providing good and healthy dwellings for the working classes. He thought they should try to make them remunerative, as they would not be of that class and extent unless they were so. The system of taking houses on the building society principle had been found to work well. The Society for Improving the Dwellings of the Labouring Classes had taken houses and built others, and the results had averaged 4 to 6 per cent. dividend, while in one instance 10 per cent. had been realised. He felt that there were a great many in Kensington who would heartily rejoice if they could, by this class of subscriptions, aid in extending the accommodation for the housing of the working man and his family. It was a good Christian work, and when the results were seen, they would all feel that they had an ample return for what they had done, if only a portion of the working men were benefited. Appropriate resolutions were passed, and Mr. Walter (chairman of the directors) then explained the *modus operandi* of the association at some length, and moved a resolution to the effect "That the association lately formed in Kensington, with limited liability, under the Joint-Stock Companies Act, 1856, 'For providing Improved Dwellings for the Labouring Classes,' is deserving encouragement." He added that the amount already subscribed was 2,580*l*. and that a site near the police-court had been approved by several influential gentlemen. The amount of their capital was limited to 10,000*l*. but if they could get about 5,000*l*. they could make a good beginning.

#### RECENT BUILDING AND OTHER PATENTS.\*

BOUSEFIELD, G. T.—An Improvement in the Manufacture of Artificial Stone. (A communication.) Dated Sept. 29, 1856. (No. 2,252).—The patentee takes of ordinary chalk from 80 to 85 parts, and of slaked lime from 15 to 20 parts by measure. These ingredients are pulverized and mixed with water to give the consistency for mouldings. The paste is then moulded, and after coming from the moulds the blocks or tiles are dried in the open air.

FONTANA-MORAB, P. A. L. DE.—Certain Improvements in Making Artificial Stone for Statues and Ornamenting Purposes. (A communication.) Dated Sept. 6, 1856. (No. 2,083).—The inventor mixes argil with red ochre or iron ore (about one-fifth argil). This mixture is pulverized and sifted, and then sprinkled with acidulated water. The product resembles ordinary plastic clay, and may be moulded by any known means.

RANSOME, F.—Improvements in the Manufacture of Artificial Stone, and in rendering it and other building materials less liable to decay. Dated Sept. 27, 1856. (No. 2,267).—The substances used to produce artificial stone are sand, clay, or other mineral or earthy substances, together with soluble silica, or a soluble silicate. For preserving stone, pumice-stone, or a readily fusible glass is mixed with various ingredients and spread upon the stone, which fills the pores thereof and arrests decay.

JACQUEMIER, L.—An Improved Method of Hardening and Colouring Alabaster and other Gypsums and Calcareous Stones and Earths. (A communication.) Dated Sept. 18, 1856. (No. 2,186).—This consists in exposing alabaster and other kinds of gypsum and calcareous stones and earths to a heat of about 212 deg. Fahr. in order to expel and drive off therefrom the watery particles contained in it. When sufficiently dried, the gypsum is placed several times into clear water, and is then exposed to the atmosphere to complete the hardening process.

OLDHAM, W.—Improvements in the Manufacture of Cement, and in Treating or Preparing Colouring Matter for Cement. Dated Sept. 10, 1856. (No. 2,119).—These improvements consist in first grinding the limestone to a powder and mixing it with clays. The limestone and clay are then rendered plastic, and formed into suitable shapes for burning or calcining, after which they are reduced to a state suitable for cement, when it is fit for use; also in reducing the limestone by stones similar to mill-stones used for grinding wheat. The improvement in the colour-

\* Selected from the lists published in the *Mechanics' Magazine*.



ing matter consists in grinding coke, breeze coal, coal slag, or charcoal used to a fine paste while wet, after which it is dried and reground with the cement.

TAYLOR, J.—*An Improvement in Building Walls.* Dated Sept. 10, 1856. (No. 2,113).—Face plates or slabs, each made with a flange on its inner lower edge, are used, in combination with concrete, in pairs, so as to form blocks of concrete faced on the two surfaces, or, what is preferred, several of the facing plates or slabs are arranged end to end in parallel lines, the flanges being inwards. Concrete is poured into the space between.

HARR, J. T.—*Improvements in Apparatus for Modelling Statuary from Life, and for Measuring and Copying Statuary and other uneven surfaces.* Dated Sept. 4, 1856. (No. 2,053).—The object here is to assist the artist in obtaining a large number of measurements from statues and groups in galleries, from the human figure, &c. and in transferring them to marble in the absence of the model. The invention consists principally in combining upon bars or rails of various forms numerous receptacles for holding instruments with pointed terminations termed needles, &c.

GEBBE, J.—*Improvements in Paints or Colouring Matter, applicable to coating metals and other substances, whereby the oxidation of metal is prevented, and resistance to the action of the atmospheric rays of heat or acids is secured.* (A communication.) Dated Sept. 11, 1856. (No. 2,122).—The patentee mixes "Jews' pitch" with Bayonne essence. Say, to 4 cwt. of Jews' pitch he adds  $\frac{1}{2}$  cwt. of essence of Bayonne. A moderate heat is applied, and the mixture stirred.

NEWTON, A. V.—*Improved Machinery for Cutting Round Files.* (A communication.) Dated Sept. 6, 1856. (No. 2,080).—The patentee produces round files with teeth in rows running spirally round them, by turning the file upon its axis, at the same time feeding it forward as it cuts. It also consists in supporting the file upon a bed immediately beneath the point where the cut is made.

NEWTON, A. V.—*Improvements in Givets, Augers, and other Tools which operate by a rotary motion.* (A communication.) Dated Sept. 23, 1856. (No. 2,230).—This relates to the application of certain ratchet-drivers to the stock or handle of augers, givets, screw-drills, &c. for imparting rotary motion thereto.

BEATSON, W.—*Improvements in Puddling Iron.* Dated Sept. 24, 1856. (No. 2,239).—This consists in puddling iron in a vessel rotating on a horizontal axis, and heated by a furnace communicating with the rotating vessel at one end, and with the chimney at the other. The iron is introduced through a door, and in place of moving the pieces about when in the furnace by hand, the vessel is caused to rotate, and in so doing exposes all the metal to the action of the flame. The agitation of the metal may be increased or entirely produced by causing streams of nitrogen or carbonic acid gas to pass through it.

MUSKET, R.—*Improvements in the Manufacture of Iron.* Dated September 16, 1856. (No. 2,170).—This consists in the use of combustible carbonaceous matters, together with air or blast in the decarburising or purifying of molten cast iron, by introducing such matters into the furnace or vessel containing such molten cast iron during the process of decarburising or purifying it.

MUSKET, R.—*Improvements in the Manufacture of Iron.* Dated September 16, 1856. (No. 2,168).—This consists in the admixture of a compound of carbonaceous matter and manganese with iron purified or decarburised by air being caused to pass through it whilst it is in a heated and fluid state, as the commencement of, or during, or at the end of such decarburising or purifying process.

MUSKET, R.—*Improvements in the Manufacture of Iron and Steel.* Dated Sept. 22, 1856. (No. 2,219).—To purified cast iron, when wholly decarburised, or nearly so, by the action of air forced into it, the patentee adds a triple compound containing iron, carbon, and manganese, by preference in a molten, fluid, or heated state, so that it may be mixed with the fluid cast-iron.

MUSKET, R.—*Improvements in the Manufacture of Iron and Steel.* Dated Sept. 22, 1856. (No. 2,220).—To produce malleable iron the patentee purifies the cast-iron by streams of air, decarburising it thoroughly, or nearly so, and then adds a quantity of metallic manganese to the molten purified iron. To produce cast-steel he sometimes arrests the purifying process, so that the iron may be merely decarburised, until it contains only such a percentage of carbon as to constitute cast-steel, and he then adds the metallic manganese to the molten cast-steel. Or, he adds to the purified cast-iron, when thoroughly decarburised, or nearly so, the best or purest cast-iron obtainable.

MARTIN, J. G.—*Improvements in the Manufacture of Iron.* Dated Sept. 16, 1856. (No. 2,171).—This consists in applying to, and disseminating amongst fluid metal possessing the characteristics of

iron, as it flows from, or whilst in a transition state from a melting or re-melting furnace or cupola, air, oxygen, chlorine, hydrogen, carburetted hydrogen, or any desirable vapour or gas, for the purpose of heating, oxidising, decarburising, carbonising, decarburising, purifying, &c. the metal. It also consists in applying to and disseminating amongst fluid iron, nickel, or matter containing nickel, zinc, manganese, carbonating matter of any kind, kaolin, or matter containing kaolin, chloride of sodium, chlorates, carbonates, nitrates, or any saline, alkaline, vegetable, carby, mineral, or metallic matter, for the purpose of oxidising.

### Books Received.

*A Walk through the Art-Treasures Exhibition at Manchester, under the Guidance of Dr. Waagen.* London: John Murray, and W. H. Smith. 1857.

DR. WAAGEN'S "Treasures of Art in Great Britain" probably led to the Manchester Exhibition; at any rate, it greatly facilitated it, and he has a right to be heard in connection with it. The little book named above will save the time of many by enabling them to go at once to the best pictures by the old masters, and will, at the same time, instruct. Dr. Waagen is not infallible, or he would not say, for example, of 261, "Titian, the Magdalen;—of the many repetitions of this subject by the master, this picture is one of the finest." It is surely only a copy. Nevertheless, he knows more about ancient pictures than most people, and is a valuable guide. We may quote some of his brief headings to the works of different schools: thus:—

"Italian School, in the Byzantine Style. Thirteenth and first half of the fourteenth century.—The pictures of this and the next period are characterised by a deep religious sentiment, seen especially in the heads and gestures. The technical execution is hard, and the drawing generally stiff and unsmooth. It is therefore advisable to look very close at them, in order that their beauties may be fully understood."

And of—

"The Italian Schools of the fifteenth and sixteenth centuries.—In the fifteenth century the Italian, Netherlandish, and German schools will be seen shining in every respect—in drawing, colour, and perspective—at a true delineation of Nature.

In the sixteenth century—or what is called the Cinque-cento painting attained the full knowledge and command of all the means essential to true and beautiful delineation."

*Chronicles of the Tombs: a Select Collection of Epitaphs, preceded by an Essay.* By T. J. PETTIGREW, F.R.S. &c. London: Bohn, York-street, Covent Garden, 1857.

THE compilation of this curious volume must have cost the author no little labour and research. It is not restricted either to our own country or our own times; but, on the contrary, traces the records of the tombs from the earliest times, and amongst various nations, beginning with the Egyptians, the Greeks, and the Romans. The work is almost altogether a novelty in its kind, too; the history of epigraphical inscriptions having till now been written only in fragments. Of late years, indeed, the chief record even of such fragments has been our own columns, in which several articles on this subject have appeared, our main object having been the amendment or elevation of the tone of what may be called the literature of the tomb.

There has been a remarkable diversity of taste and feeling prevalent at different periods in the world's history in respect to epitaphs. The more ancient are certainly the more dignified, generally speaking. As respects different countries in less ancient times, the accusation that the English have been behind other nations in regard to their records of monumental inscriptions is one not altogether devoid of truth. For the most extensive collections of epitaphs, we are indebted to the Greeks and Romans. Italy, France, and Germany can also produce their vast collections. In this country, in early times, inscriptions were prohibited to be engraven on any tomb; but those belonging to persons distinguished either by their high position as governors of the kingdom, as military commanders, or as remarkable for their wisdom or their virtues. In this respect, as remarked by Mr. Pettigrew, we seem to have followed the example of the Lacedæmonians, who allowed the honour of epitaphs only to those men who died bravely in battle, and to those women who were distinguished by their virtue. Hence such records were viewed with veneration, and protected with solicitude. Roman epitaphs were always addressed to the manes of the deceased, and there is something peculiarly appropriate and touching in them. Roman British epitaphs partake of the Roman simplicity. It has been questioned whether we possess any genuine Saxon

epitaphs, those generally adduced as such being evidently compositions of a later period. This remark is also applicable to the Danes. The epitaphs which belong to the Saxon period consist of little more than simple inscriptions, and the instances recorded of them are few in number, though highly worthy of attention. In England, epitaphs are scarcely to be found prior to the eleventh century, and these are in Latin, and chiefly royal or ecclesiastical. In France there were few epitaphs in the French language itself before the thirteenth century. Epitaphs in the French language were common in this country from the thirteenth till the middle of the fourteenth century, and continued more or less to be used even in the fifteenth century. It is generally admitted that of all languages there is none equal to the Latin for aptness in inscriptions. The Spanish has been commended for its terseness of expression, and the English, as many of our inscriptions show, admits of considerable force and elegance. The difficulty, however, of composing an appropriate or satisfactory inscription in English has been so generally felt, that many of our statues of recent erection record only the name, or at the most are accompanied only by the date of birth and decease, of those in whose honour they have been erected. Yet many arguments might be adduced in favour of epitaphs in the English language. Much must depend upon the situation in which they are placed.

Taste in the style of the language of an epitaph is a matter of the very first consideration. Pertness or quaintness, either in the style or the sentiment, is repugnant to good taste; still, one will readily be disposed, with Mr. Pettigrew, to admit of something of an epigrammatic turn in the composition. Sir Joshua Reynolds tells us, on this head, that he remembered once having made an observation to Burke that "it would be no bad definition of one sort of epitaphs to call them 'grave epigrams'." Burke, adds Sir Joshua, gravely re-echoed the words "grave epigrams," giving me the credit of a pun which I never intended to perpetrate. A very large proportion of epitaphs exhibit instances of glaring deficiency of taste, turgidity of language, and exaggeration of sentiment. What Armstrong said of the best language is peculiarly applicable to that which ought to characterise epitaphs. In these, the thoughts should be expressed in the shortest, clearest, and easiest way, and by the most harmonious arrangement of the most choice words, both in meaning and in utterance.

Without any special intention to illustrate what has been said, either by adducing instances of model epitaphs or "frightful examples," we shall conclude these few remarks on the subject by gleanings from Mr. Pettigrew's curious and interesting collection two or three of the more salient specimens of various kinds of epitaphs, selected, in truth, more on account of their brevity, in consideration for our own limited space, than for any other special reason.

First of all, we may give a specimen of Egyptian epitaphs or mummy inscriptions:—

"Let us pray for Osisir, Lady of the House, Ohranis;"—marking that though Osisir was an Egyptian god, there was this peculiarity about Egyptian ideas, that every one who died became Osisir or the god;—an idea originating, doubtless, in the ancient doctrine of divine possession, according to which, in religious or devotive contemplation, the "servant of the god" gave up possession of his body, as a "dead" carcass, to be inhabited, as a shrine, by the god himself; so that, loosely speaking, he became the god, and was no longer merely a human being, at least, till dispossessed of the divine afflatus, and "came to himself" again.

Of Greek epitaphs we may select the following, on Ælignes;—

"Hail! universal mother! lightly rest

On that dead form

Which, when with life invested, ne'er oppress'd

Its fellow worms."

One of the most frequent expressions on the Roman tombs, both of Pagan and of Christian times, is to be found in the well-known passage of Tacitus,—"Sit tibi terra levis,"—"Light be the earth upon thee." This expression, as we have just seen, was also Greek; and it has been handed down even to our own day, and is still often employed.

There is in it unquestionably, as Mr. Pettigrew remarks, an elegance and a feeling of the most delicate character, bearing the most affecting application. The Romans did not confine themselves to the employment of this passage on the tombs: they placed it even on their lamps, upon those which they were in the habit of offering lighted at their tombs of the dead. One of the most interesting of these (preserved by Gruter) is the following:—

"Adieu, Septimius! May the earth be light upon thee! Whoever places a burning lamp before this tomb, may a golden soil cover his ashes."

Gough hints that it is not improbable that the idea



of the earth lying light on the body interred—this favourite desire of antiquity—suggested the raising of cells of stones or sods within the vast barrows afterwards heaped over them; but we have elsewhere pointed out another reason altogether for the formation of some at least of these cells, which indeed were most intimately connected with the most mysterious and sacred doctrines of the Druids and other orders of the Pagan priesthood.

Of Saxon epitaphs, the well-known "Requiescat in pace," inscribed in Runic and Saxon characters on a circular stone with a cross in a circle (the cross, by the way, often not unlike the plan of the Druidical cells just spoken of), may serve as an example.

In old English epitaphs, "pray for the soul" of so and so who "here lyeth," was a very general and characteristic introduction to what followed. Many, however, made little pretension to religious sentiment.

On the tomb of the third Earl of Devon, "the blind and good earl," and of Maud, his wife, the epitaph is—

"Hoe! hoe! who lies here?  
The goodle Erie of Devonshere,  
With Maud, my wife, to me fell here.  
We lyed togetheir fifty fyve yere.  
What we gave wee love:  
What we spent we had;  
What we left we lost."

On more than one old English tomb is the following:—

"The bitter cup that death gave me,  
Is passing round to come to thee."

Of punning epitaphs a sprinkling may be added:—

On the Rev. Mr. Chest,—

"Here lies at rest, I do protest,  
One chest within another.  
The chest of wood was very good:  
Who says so of the other?"

On Merideth, an organist at St. Mary Winton College, Oxford:—

"Here lies one blown out of breath,  
Who lived a merry life and died a Merideth."

On John White:—

"Here lies John, a burning, shining light,  
Whose name, life, actions, all—were White."

On John Potter, Archbishop of Canterbury (1736):—

"Alack, and well-a-day!  
Potter himself is turned to clay."

In *Notes and Queries* is given an English version of a singular arrangement of Latin verses in an epitaph at St. Anne-in-the-Willows, on John Herenden Mercer, Esq.:—

cur f w d dis ease and p  
A sed friend wrought oath and sin  
bles f b br and ag  
"A cursed friend wrought death, disease, and pain;  
A blessed friend brought breath and ease again."

Amongst ludicrous and eccentric epitaphs, perhaps one of the worst is that at Gateshead, on Robert Trollop, architect of the Exchange and Town Court of Newcastle:—

"Here lies Robert Trollop,  
Who made you stones roll up;  
When death took his soul up,  
His body filled this hole up."

As we are amongst the old bones of a fellow architect, we may present the remains of another.—Mr. John Abel, of Sarnesfield, ob. 1694, et. 97:—

"This cragstone a covering is for an architect's bed  
That lofty buildings raised high, yet now lies low his head  
His line and rule, so death concludes, are locked up in stone,  
Build they that list or they that wait, for he can build no more.  
His house of clay could hold no longer,  
May Heaven's joy build him a stronger."

At Monknewton, near Drogheda, there was, or is a tombstone—

"Erected by Patrick Kelly,  
(Of the tower of Drogheda, mariner,  
In memory of his posterity."

Whether the following, on a glutton, be a real or a fictitious epitaph, does not appear:—

"At length, my friends, the feast of life is o'er,  
I've ate sufficient, and I'll drink no more.  
My night is come: I've spent a jovial day:  
'Tis time to part, but ob—'What is to pay?"

If any be curious to know how "Ann Collins died, 11th September, 1804, et. 49," he is assured that—

"'Twas as she tript from cask to cask,  
In at a bung-hole quick she fell.  
Suffocation was her task:  
She had no time to say farewell."

Poor sister Ann! Had great Cæsar's clay formed the bung of the fatal cask, he might have been of some little service to her at least in *artificis moris*. But here we must pause, apologizing to Mr. Pettigrew for the liberties we have taken with his labours, and thanking him, in the public's name, for his excellent contribution towards the history of the posthumous literature (shall we call it), of this weary world.

### Miscellaneous.

**LIZARD SERPENTINE.**—The interests of the southern part of Cornwall are likely to be advanced by the success which, we are told, is attending the progress of the works at the Cadgwith Signal Staff, where a lower depth in the excavation of this material has now been reached than has ever been attained. The primitive formation near Cadgwith has been shot upwards, from depths impossible to estimate, through liquid granite, porphyry, and asbestos; and at the junction of the serpentine with the micaceous formation there is developed, in huge masses of fifty and one hundred tons weight, stone of great beauty, with ever-varying shade and colour. The Signal Staff quarry, as now laid open, on a bold perpendicular cliff between 200 and 300 feet high, with the ocean lashing its base, excites in the visitor at first sight an idea, that all is chaotic confusion; but the observations of Mr. Cox, the superintendent of the Lizard Company, has led to the discovery, that, throughout the extensive field of serpentine, there have reigned certain general laws which have produced a systematic order of colours. The surface stone for several feet is rusty red, and brittle; much disintegrated, and of so overburnt an appearance as to have occasioned an opinion of general faultiness: below this upper crust, the peculiar light green has been developed: proceeding downwards, the green becomes darker, and is incorporated with bright red; and below this again is a mixture of rich red, with fine-grained black stone, compact as marble, not less easily worked, and not influenced by the action of acids. By far the greater portion of the district of the Lizard consists of serpentine, and it was erroneously supposed that the bulk was applicable to ornamental and useful purposes; but this is not the case, the stone of superior working quality and of rich colour being found where the beds are intersected with porphyritic rocks. The proximate causes of the great varieties of colours, their striking contrasts, and numberless changes of shade and tint, constitute a problem which geologists and chemists have yet to solve.

**PURCHASE OF LAND FOR DEFENCE-WORKS AT GOSPORT.**—Some of the circumstances connected with the purchase transaction of the land in this neighbourhood, says the *Mechanic's Magazine*, are painfully ridiculous. About fifty years ago, the necessity of strengthening the outlying fortifications at Gosport became apparent to the military engineers, and purchases of land were made about Brown-down and in the locality of Gower Fort for this purpose, on which occasion about 1000. per acre was paid for the property. The land, however, was not turned to account for fortifications. With the exception of a few small earthworks, nothing was done; and in the office of the late Sir Hansy Vivian the greater part of the Government land was sold, and in many instances did not realize more than 100. per acre. On the occasion of the last purchase of the same land, which had been thus bought and sold on such unfavourable terms, Government paid 2400. per acre for it, thus making the public a loser by about 3000. per acre on their transactions. It is not yet transpired what will be the extent and character of the fortifications which are to be erected on this land.

**ANGEL INN, HIGH-STREET, CLERKENWELL.**—Application has been made, under sec. 113, Metropolitan Local Management Act, by Mr. Smith, to allow him to fill up a gap between shops in Angel-place and his premises, by building over space in front, and so to do away with the paved portion, on private and public grounds, deemed by him a great nuisance. The question was referred by the Board to the Clerkenwell Vestry, who reported in favour of Mr. Smith. The Metropolitan Board have not, however, adopted the recommendation of the vestry, but have refused consent.—A PARISHIONER.

**HASTINGS.—NEW HOTEL.**—At this beautiful watering-place a colossal hotel has been commenced, on a scale of magnificence scarcely paralleled by any other in the south of the kingdom. The site is on the sea-bank, in continuation of Carlisle-parade, presenting frontages to the Parade and to Harold-street of 200 feet respectively. The foundations are laid, and the plan contemplates the completion of 130 rooms; comprising first and second class offices, saloons, and suites for families; besides assembly, billiard, and smoking rooms, and a library. There is also an arrangement for baths. The plan is being carried out by a company on the principle of limited liability, and the execution of the design is under the superintendence of Mr. Francis H. Fowler, architect.

**IMPROVEMENT IN THE PREPARATION OF CRUDE ORES.**—Mr. John Harding, of the Beeston Manor Ironworks, Leeds, has patented a new method of freeing ironstone and other metallic ores from shale and other extraneous matter. Mr. Harding's discovery dispenses with the action of the air, and, by the application of steam, accomplishes in two or three hours that which has previously occupied one or two years.

**ROYAL SURREY GARDENS.**—Experience confirms the opinion we early expressed, that the fine music-hall in the Surrey Gardens is admirably adapted for sound, and so does great credit to its architect, Mr. Horace Jones. Eleven military bands, besides Mr. Julian's own, tested its excellence in one respect on Tuesday and Wednesday last, in aid of a fund for Mrs. Seacole, of the Crimea, and if all the statements of her goodness of heart and liberality to our brave soldiery be true, they will never be gathered together in a nobler cause. She has reason to be thankful for her losses, since they have served to show her the sense the public entertain of her services. According to one who ought to know, "she nursed the sick, succoured the wounded, and performed the last offices to many of the most illustrious dead."

**ROYAL POLYTECHNIC INSTITUTION.**—On Saturday evening, the 25th ult. a ceremony highly creditable to this excellent institution took place in the large lecture-room—namely, the distribution of the certificates of merit from the Society of Arts to the 44 successful candidates who had attended the classes at the Polytechnic Institution during the past year. The chair was taken by Viscount Ebrington, M.P., and he was supported, among others, by Professor Buckmaster, Dr. White, Dr. Sayer, Mr. Leslie, Mr. Ure, and others. The number of students in the Polytechnic who have obtained certificates must be very satisfactory to Mr. Pepper, and affords a proof of the excellence of the classes he has established.

**ADHERENCE TO CONTRACTS.**—Some few months since there were tenders sent in for a new Pauper Lunatic Asylum for the counties of Beds, Hunts, and Herts. The specification tenders were based upon contained distinctly that the lime for the works was to be of Hitchin production (on account, I presume, of its excellent quality). Now, the distance from Hitchin to the asylum is five miles, which, of course, was duly calculated upon, as well as the price of the article; but to show the unfairness of present proceedings, the lime used is made on the spot, and from such a quality of material that it has been asserted the former lime arches were abandoned more than once, it being so inferior. Putting aside the badness of the chalk for such ponderous works to be carried up with, I must reiterate the sentiment of its being unfair towards other competitors, who were at the expense and trouble of sending in tenders, unless it has been considered by the committee, and a fair allowance made on behalf of the ratepayers. I shall be glad to know if this the case?—A COMPETITOR.

**THE ATTWOOD MEMORIAL, BIRMINGHAM.**—The models of a monument to the memory of the late Mr. Thomas Attwood have been sent in competition by Mr. Peter Hollins, and Mr. Thomas, of London. Both are statues. That by Mr. Hollins represents Mr. Attwood in the act of addressing an assembly. The figure rests on a plain square plinth and pillar. In Mr. Thom's, the figure is represented also in the act of addressing the people. The figure stands on a column, supported by a flight of steps. The cost in both cases, involving the erection, is 3000.; the figure to be Sicilian marble. The committee reserve their decision.

**STATION SUBSCRIPTION FUND.** We are glad to hear that one main object of this subscription is attained; the trustees of the National Gallery having accepted Mr. Seddon's picture of Jerusalem with the Valley of Jehoshaphat, which will be exhibited along with the other works of the British school forming part of the Gallery. The other object of the fund is also fairly attained, the subscription having realized not only the purchase-money of the picture, 4200. but a net surplus of about 144. which will be presented to Mrs. Thomas Seddon along with the purchase money. The subscription will remain open until the 15th of August.

**CHRIST'S HOSPITAL.**—General repairs are to be done, and tenders have been received, ranging from Hayward, 5487. 9s. 6d. to Clarke and Barnes, 4500.

**GAS.**—At the annual meeting of the Montrose Gas Company just held, it was resolved to pay to the shareholders a dividend of 10 per cent. The company are extending their pipes.

**INFUSIBLE CLAYS FOR RETORTS, EARTHENWARE, &c.**—Mr. L. J. F. Marguerite, of Paris, has invented some ingredients in the preparation and mixture of infusible clays for manufacturing earthenware. The object is to increase in all kinds of clays for the manufacture of earthenware the proportions of silica and alumina. The process is as follows:—Make the bricks, retorts, or other articles, in the ordinary manner, and after they have been submitted to the first operation of drying in a stove, immerse them in a solution of chloride of aluminium or chloride of silicon. During this operation the soaked earthenware products are burnt till the hydrochloric acid is entirely evolved. There remain in the interior of the earthenware alumina and silica in proportion to the concentrated state of the solution, and to the repeated immersions to which the articles have been subjected.



**CONSECRATION OF OLD FORD CHURCH, BOW.**—The Bishop of London has consecrated the new church recently erected at Old Ford, Bow, near the railway station. The church is of the Early Perpendicular period of Gothic architecture, and built of brick, with stone dressings, upon a site given by Sir Charles Morgan, Bart. on the Tredgar-road. The strictest economy has been observed in its construction. There are 1,500 sittings; nearly one-third free. The architect was Mr. John Nicholls. The cost of erection has been nearly 6,000*l.* mostly advanced by friends.

**ORDNANCE SURVEY.**—The report of Lieut.-col. James to the Inspector-general of Fortifications, of the progress of the Ordnance survey of the United Kingdom up to December last, has been issued, together with remarks upon the different branches of the work, and the methods of conducting the operations of the survey. This is the first detailed report on the survey which has been presented to Parliament. It is in contemplation to remove the headquarters of the survey from Southampton to London, still keeping at Southampton the engraving and publication, as in Dublin. The number of persons employed on the survey on the 31st of March last was: 1. Lieutenant-colonel superintending, 16 captains, 2 Lieutenants, 1 quartermaster, and 480 non-commissioned officers and apprentices of the corps of Royal Engineers, 960 civil assistants, and 609 labourers; making a total of 2,069 persons; but, in consequence of the reduction in the amount of the grants for the survey, this number is now reduced to 1,282. "The great drawback to the survey," says the reporter, "has been the frequent change of orders relative to it. I believe those under which we are now acting are most judicious; and after the full discussions upon this subject which have taken place by correspondence, in committees, and in Parliament, I trust that this great work (which will, certainly, be the most perfect of its kind ever executed) will now be pushed on steadily and rapidly, and without any further material changes."

**A NEW CEMENT OF VARIOUS USE.**—New uses have been suggested for a combination of pitch and gutta percha, as to which we some years since gave instructions for the prevention of damp in walls. Professor Edmund Davy has read a paper to the Royal Dublin Society on the subject. He obtains the cement much as we suggested, by melting together in an iron vessel two parts by weight of common pitch with one part of gutta percha. It forms a homogeneous fluid, which is much more manageable for many useful purposes than gutta percha alone, and which, after being poured into cold water, may be easily wiped dry and kept for use. The cement adheres with the greatest tenacity to wood, stones, glass, porcelain, ivory, leather, parchment, paper, hair, feathers, silk, woolen, cotton, linen fabrics, &c. It is well adapted for glazing windows, and as a cement for aquariums.

**THE COLERAINE NEW TOWN-HALL.**—The foundation-stone of a new town-hall in Coleraine was laid on 21st ult. under circumstances of great rejoicing.

**ELECTRO-TELEGRAPHIC PROGRESS.**—It appears that the Euphrates Telegraph is about to be commenced. A large quantity of telegraph stores has been despatched for Bagdad, and Lieut. Arthur Hawes, of the East-India Company's Service, and other executive officers of the European and Indian Junction Telegraph Company, will start forthwith for that town to begin the construction of the proposed line.

**SWISS RAILWAYS.**—In Switzerland, railways are rapidly extending. The following sections have been opened within the last three months:—On April 15, that from Winterthur to Schaffhausen, 29 kilom. (18½ miles) in length; in the course of the same month, that from Sissach to Löffelringen, 9 kilom. (5½ miles); on May 16, that from Herzogenbuchsee to Biel, 87 kilom. (23½ miles); on June 10, from Villeneuve to Bex, 17 kilom. (10½ miles); and on June 15, the section from Herzogenbuchsee to the plain of Wyler, near Berne, 39 kilom. (25 miles).

**ONE OF THE LATEST DODGES IN ARCHITECTURAL COMPETITION.**—In a competition for a public building proposed to be erected not 100 miles from Bilton, a limited number of architects were invited to send in designs, and amongst the instructions issued for their guidance, was the announcement, that if a competitor made known his plans or motto to any member of the committee, such plans would be disqualified. To overcome this difficulty a spirited firm, before sending in their drawings, forwarded to each committee-man a photographic copy of their designs, and also a copy of their report, with Pecksniff and Co.'s compliments. If architects wish committees to act fairly and uprightly, they must themselves "do as they would be done by," instead of adopting the motto, "Do your neighbours as they would do you," which seems unfortunately to be the leading principle of competitions in general.

LOOKER ON.

**A RÉPUTATING CORPORATION.**—At Edinburgh lately an application was made by Mr. Alexander, builder, to the Police Commissioners and the City Corporation, for payment of an account of 50*l.* odds, incurred in removing the debris of a building which fell in Leith Wynd, upwards of a year since, and thereby resulting a child from suffocation, and also for taking down a dangerous gable in the same wynd. It appears that, on the accident taking place, Mr. Alexander was ordered, or requested, by the sheriff to clear the wynd of the rubbish of the fallen building, and to take down the unsafe gable, and that the operation was superintended by the inspector of police. He did so, and sent in his account to the Commissioners of Police. The matter was remitted to the committee presided over by Mr. Fyfe, and, "as might have been expected," says an Edinburgh paper, there was immediately a difficulty found to prevent the payment of the account. No regular order, it seems, had issued from the police authorities for the employment of Mr. Alexander, and he was told that this flaw was fatal to his demand. The Lord Provost and other members of council strongly recommended payment. Mr. Fyfe, however, persisted in holding by his technical objection, and persuaded the council to adopt the view of his committee, and refuse payment. It is to be hoped, should Mr. Fyfe happen to lie under the rubbish of some future fallen building, that no Edinburgh contractor will hesitate for a moment to dig him out, in such an emergency, merely because there is no time for the issue of a "regular order."

**ROYAL ASSOCIATION FOR THE PROMOTION OF THE FINE ARTS, EDINBURGH.**—The annual general meeting for the distribution of works of art by this association among the subscribers, was held on the 18th ult. in Queen-street Hall. The pictures bought by the committee were ranged behind and in front of the platform. Mr. J. A. Bell, secretary, read the annual report of the committee of management. It stated that the amount of subscriptions for 1856 was 4,974*l.*: this year it was 5,400*l.*, being an increase of 426*l.*, or 1,133*l.* over the year 1855. The committee (continued the report) have purchased, at a cost of 2,409*l.* seventy-eight works of art, recently exhibited by the Royal Scottish Academy. These consist of forty-five paintings, thirty-two water-colour drawings, and one piece of sculpture. The sum so expended is larger by upwards of 300*l.* than was spent by the association last year in the Academy Exhibition.

**THE PAVILION AT BRIGHTON.**—The Brighton town council having advertised two premiums, one of 200*l.* and the other of 50*l.* for the best designs for the appropriation of the northern portion of the Pavilion property, the competition has closed, only nine designs having been sent in. Each plan is sent in under a motto. The council, according to the local *Herald*, have ordered three of the upper rooms of the Pavilion, over the King's apartments, to be set apart for the reception of these designs. A correspondent of the paper referred to suggests that the reason why there have been so few competitors for premiums so liberal is, that the committee have made no mention of a professional referee, and states, indeed, that several local architects have informed him that this was the reason why they declined to risk the waste of their time on the competition. All the designs sent in purport to deal with the whole of the property forming the subject of the advertisement calling attention to the competition; so that it may subserve certain specified purposes. These purposes are, to provide the town with,—1. A Music Hall, capable of accommodating a large body of persons. 2. An Anthem, that is, a winter garden or conservatory, something after the fashion of the Crystal Palace. 3. A Free Public Library and Reading Room. 4. A Picture Gallery. 5. A Museum. Upon the town council will devolve the responsibility of choosing from among the competitors, but, as suggested by the writer alluded to, even still a professional referee ought to be called in.

**ST. CLEMENT'S DANES.**—Tenders for works at St. Clement's Danes Church, Strand, Messrs. H. and F. Cadogan, architects, have been lodged, ranging from 40*l.* 40*l.* to 470*l.*

**ORKNEY ANTIQUITIES.**—A "Pict's House" at Eday, one of the Orkney Isles, was lately excavated by Mr. Farrer and others. It consists of a circular mound or tumulus, with a central cell, and a narrow passage to the outer surface of the barrow. The central cell opens right and left at each corner of the "quadrangular enclosure," through other passages into smaller cells. The roof of the central cell had fallen in. Externally there was nothing to distinguish the tumulus from other barrows or graves, but internally it was faced round with a wall, to give greater stability to the cellular structure. In none of these "Pict's Houses" have any relics been found, and in the north there seems to be great doubt as to the uses to which such structures

could have been put. We are much mistaken, however, if they be not Druidical, or arkite cells, such as that of New Grange, near Drogheda, in Ireland, and various others throughout the British Isles. New Grange contained only one cell, with its long narrow passage; but right and left, like the branches of a cross, were niches, correspondent to the side-cells of the Eday barrow. Each niche contained a rock basin, and one of them was inscribed in Ogham characters denoting "the sepulchre of the hero," and the other, "the house of the God," with a dedication to "the Great Mother Ops." In these cells, thus identified as at one and the same time the grave of a *dead* hero and the house of a living God, the Druidical neophyte was buried for a brief interval, denotive of death to the flesh, but quickening by the Spirit; and thence, as from a mother's womb, the Talisman, or initiated Druid, was "born again," or resurrected from the tomb or "kist vaen,"—now one of "the deathless brotherhood." Let such a mound and enclosure as this be compared with the Egyptian Pyramid and its closed and narrow entrance and passage, leading to its small central chamber and sarcophagus: the analogy is very strong, and leaves little doubt, we should think, as to the actual purpose of the mysterious pyramid. Indeed, the cromlech or barrow at New Grange was even in itself of a somewhat pyramidal shape, though composed of earth and truncated at top. The singular association of the tomb and the temple, in so many forms as they assume throughout the world, has thus, too, some light shed on it by the connection between such a curious structure as that of New Grange and the Druidical rites for which the British Isles were once so distinguished.

**THE UNITED STATES PATENT OFFICE.**—Part of the west wing of this edifice was only lately in course of erection, and has just been completed. The building known as the Patent Office contains also, at present, various Government offices. The building is 405 feet long, including the wings, which are 275 feet long, both the front and wings having a depth of, the former 70, and the latter 69 feet. The centre building faces Eighth-street, and is 270 feet wide: it connects on either side directly with the wings, and but for the difference of material the whole looks, as it is in fact, like one building. The material of the first structure is sandstone, painted white, with granite basement in the rear: it has a rusticated basement, and rises two stories in height above. The wings are of marble, the east similar in its construction to the centre; whereas, owing to the declination of the ground, the west wing has a sub-basement of granite, to bring it on a line with the rest: the rear of each wing is of granite. The portico, which is very elevated, being reached by numerous granite steps, supported by cheelocks, is of the same proportion as the Parthenon. The entablature and pediment are supported by a double row of massive Doric columns, resting on a stone pavement: pilasters ornament the entire front of the building. The porticoes of the wings differ from the one in front: they have one row of six massive fluted marble columns, purely Doric, resting on the pavement: they are 34 feet 6 inches high, and 5 feet 10 inches in diameter. The architect and superintendent is Mr. Edward Clark. An appropriation has just been made of 200,000 dollars to commence the building on the fourth side of the quadrangle. This will be erected by Mr. Clark.

#### TENDERS

For building a pair of villas at Westow Hill, for Mr. James Sunbam. Mr. S. Hewitt, architect:—

Winder .....	£2,629 0 0
Lucas, Brothers .....	2,490 0 0
Patman and Fotheringham .....	2,440 0 0
Ryder .....	2,440 0 0
Colls and Co. ....	2,290 0 0
Dowds .....	2,250 0 0
Thompson .....	2,170 0 0
Dyer .....	2,125 0 0
King and Stanger .....	1,973 0 0

For rebuilding the house, No. 85, Strand. Mr. E. T. Anson, architect. Quantities supplied:—

Laurence .....	£1,914 0 0
T'Anson .....	1,890 0 0
Smith .....	1,820 0 0
Ryder .....	1,770 0 0
Trollope and Sons .....	1,743 0 0
Macey .....	1,714 0 0

For fittings, &c. at Sydenham Church. Mr. Edwin Nash, architect:—

J. Barnett .....	£1,967 0 0
King and Stanger .....	1,675 0 0
Perry .....	1,625 0 0
Myers .....	1,477 0 0

For a pair of semi-detached villas at Peage. Mr. Joseph Sprungell, architect:—

Powler .....	£1,549 0 0
Hebb .....	1,395 0 0
Hollidge (accepted) .....	1,349 0 0



THE Advertiser will undertake to go abroad for any gentleman who wishes to meet with a man experienced in the art of boring for water, or other mining purposes.



# The Builder.

VOL. XV.—No. 757.

**I**N a recent number we made some observations (with reference to general improvement) on Reformatories, ragged schools, homes, and other "social bridges," which observations obtained very general circulation, and have aided in awakening public attention to the importance of such establishments. The *Sheffield Independent*, amongst other journals, commenting on them, in an article headed "Prevention better than cure," says, "The truth of this old adage is borne witness to everywhere, and in a way which leaves no room for doubt or caviling. Yet, self-evident as it is, the application of the principle so as to secure practical results is, in many instances, very slowly discerned by the public, and very dependently acted upon. The case of juvenile reformatories is one in point. Possibly some excuse for this may be drawn from the fact that what is a public duty—the duty of all, and not that of any particular individual—is, in some sense, held to be no one's duty, at least very few feel themselves called upon to take the initiative and to agitate for the thing. There would be less wonder were the moral certainty of the success of reformatory schools less decided; but after the many satisfactory experiments that have been made, and are now being published to the world, the apathy of the people as a whole, and particularly of our county magistrates, who have shown their want of confidence in such agency, and their lack of faith in the accessibility of the public mind to evidence, is astounding."

After quoting some of our statements, the writer continues:—

"Let no one, then, be content to let the movement take its own course, receiving the aid of those who choose to give it. Each must feel that he is personally bound, to the extent of his means, to aid it himself; that in declining, he is unjust to his country, to its species, and to his God. To allow, by passivity, thousands of ignorant and destitute children, at our doors, born and cradled in crime, to go to almost certain ruin, without making an effort, is both cruel to them and a wrong to ourselves. The *Builder* places the matter, for the sake of those unsuspicious of higher motives, in the following practical point of view:—'We want good artisans,—our colonies want them even more—offer any money for them. Would it not be better, wiser, cheaper, for the country to turn the neglected infant population of our cellars and streets into men of this class, instead of allowing them to become, as they unquestionably must become if ignored, for rogues and thieves, if nothing worse, to plunder honest men, and to be ultimately caught, tried, convicted, and maintained in prison, or a penal settlement, all at the cost of the state?'"

Notwithstanding the recent war with Russia, the exports of 1856 show an enormous increase over those of the previous year. Shipping, railways, docks, household property, have all increased in value to an immense extent, and yet, amidst all this prosperity, we have accounts of widely-spread distress, and find thousands of fellow creatures living in miserable dens, and under circumstances which render health and virtue scarcely possible.

The Government at the present time are assisting female servants to a free passage to various of the colonies. Although, perhaps, none amongst the working-classes of London are generally better off than well-conducted and efficient female domestic servants—they have a fair amount of wages, comfortable lodgings, and sufficient food,—the emigration of this useful class of persons will, to a certain extent, make room for others. It seems a pity that the small tradesmen and the best paid mechanics of the metropolis and other large towns should consider respectable service

for their daughters as a sort of disgrace, and bring them up not in a way to make them useful wives to those of moderate means, or, when left to their own resources, to enable them to earn a sufficient livelihood. We want more occupation for females.

The managers of the Electric Telegraph have very wisely adopted the employment of female clerks, who have been found to answer the purpose admirably; and this, when the resources of the great invention have been developed, will in Great Britain be the means of affording occupation to some thousands of young women. The difficulty of obtaining profitable employment for a very intellectual portion of the women in large towns, is shown in various ways: for instance, in reply to an advertisement in a London paper, seeking a young person, as useful companion to a lady, at a very moderate salary, there were 270 applications in a few days.

The condition of thousands of needle-women in London is generally known to be deplorable; but only those who have seen with their own eyes can fully appreciate the misery which at present exists. It is a melancholy fact that, as matters are working at the present time, large bodies who would willingly earn their food by honest industry are yearly falling into greater poverty; and it is unfortunately the case in other trades besides that of the needle-women that the rich capitalist is getting richer, and the poor workman and workwoman poorer. It would require a large amount of space to discuss the causes of this unfortunate state of affairs and the different views of this important subject which are held by various persons whose opinions are well worthy of consideration. It is not our present purpose, however, to discuss this further. We have a different object in view with reference to the well-being of a superior class.

Those who have examined with care the various conditions of London life, will appreciate properly well-intentioned plans having for their object the provision of arrangement to enable members of different classes to escape from inconvenient and too often dangerous conditions, and it is with pleasure that from time to time we notice various experiments for improving the means of living, with comparatively limited means, in comfort, and respect in this metropolis. These are to be placed amongst social bridges: all honour to the builders.

The lately opened institution to which we just now desire to direct attention, is situated at No. 44, Great Ormond-street, that somewhat stately neighbourhood of Queen Anne's days. The house was formerly the residence of Lord Thurloe, and is a characteristic specimen of the London domestic architecture of the time. So far as the interior arrangement is concerned, it has considerable elegance: the entrance-hall, with marble floor, wide carved staircase, ornamented panels, and ceiling of rich design, are noticeable: the lighting of it is excellent: the rooms are lofty: the dining room, on the ground-floor, is adorned with columns, and is a handsome apartment, in which have assembled many an eminent company in former days. Other rooms lead to a terrace, communicating with a large garden, which, by the way, might be made a little more trim than it is.

While looking over this large, comfortable, though old-fashioned mansion, one cannot help contrasting its well ventilated, light, elegant condition with many of those places of a totally opposite description in which some thousands of the young women of London are by force of circumstances obliged to lodge. Amongst the female part of our population, a large number obtain employment in the establishments of milliners and dressmakers both at the west end of the town and in the City: in some instances lodging is provided for the assistants and

learners: in others they are obliged to find sleeping-rooms themselves. No doubt many young women so employed have the shelter of the homes of parents and other relatives: there are, nevertheless, a considerable number who, with slender means, are obliged to provide for themselves.

It must be evident to every one, as matters are at present, that a respectable establishment, managed, in a right manner, by those who can command general confidence, for the use of young women who have not a proper and comfortable home, must be of great service. Besides the workwomen who have been reared in London, there also come, year after year, hundreds of dressmakers, and others, from the provinces, to seek improvement here, for the purpose of enabling them to commence business in their native places with a chance of success; and the necessity for some provision for these classes different from that generally obtained is so evident, that we need not say more on this point. This necessity seemed so great to Lady Goodrich and Lady Hobart, that they determined to risk the expense of opening a house in Manchester-street, to supply the want; and after trying the experiment there for some time, they have taken the house we are now speaking of, where young women can find a home, after their labours, at a cost of from 2s. to 2s. 6d. a-week each. Lord Thurloe's dining-room is used as sitting room by the inmates, and here there is a pianoforte, a good library, and other means of amusement. A Lady-resident, who is heartily earnest in her task, manages the house, and arrangements are made, something on the club principle, to provide meals at a cheap rate. The house would accommodate upwards of sixty, and it seems to us that the advantages of this home only require to be understood by those for whose use it is intended, for the establishment to be fully appreciated. In the meanwhile the expense is great to the ladies who have so kindly made this experiment, and it is desirable that the place should be made known to those for whom it is intended.

## THE WELLINGTON MONUMENT COMPE-TITION.\*

TAKING UP our notices of the models now being exhibited at Westminster-hall, we come to No. 33, which is marked "Nameless," a curious production wanting alike structural character and good architectural detail. What serves for platform to the principal group, is composed of a number of flags borne by seated figures at the angles of the pedestal. On this somewhat unsstructural base stands Wellington, to whom a figure habited as a king is doing homage; and Britannia on horseback holds a flag over the duke. The author seems to be a Frenchman. Curiously enough, he has written the name "Britannia" upside down. —No. 34, "Rom Marai A jini Agressus," is an imitation of a Gothic monument, with a recumbent figure. There are small groups of figures at the angles of the piers, and a figure of Wellington at the top, in what we can best describe as "a fighting attitude." —Of No. 36, "Past Away," we have spoken. We still look upon works of this sort, as being the best of them erroneous in principle. The spectator is asked to take it upon trust, that the body of the deceased is within the sarcophagus and tomb. He knows this to be false; that the whole thing is a pretence and make-believe; and the chance is that he goes away less impressed than it was the artist's object that he should be. There are two sorts of imitation,—that which alone the true artist would attempt,—and that where the object is less art than mimicry or deception. The two kinds of so-called art are here mixed up. In No. 36, there is certainly much to admire in the action of the figure closing the gate, and in the group at the summit; and the simplicity of the sculpturesque features is commendable. The *ritueos* on the bronze gates, it is proposed should illustrate "the remarkable events military and political from 1790." In the group of objects at the back of the tomb, the coronet and shield are strangely represented, as about equal in diameter. —In No. 37, TO KAGHKON, a figure of Wellington, holding the sword of state, is placed on a circular pedestal. Round this are grouped some capital allegorical figures; and on the lower pedestal

\* See pp. 415 and 425, ante.



two *alto-relievos* are shown, which though very roughly modelled, are remarkable. The one, the battle of Waterloo, for the fire and spirit which is expressed in the charge; and the other, apparently the entry into Madrid, for the grace and beauty of the composition.

In No. 38, "Cincinnatus," most of the errors which we have been remarking upon, as inconsistent with the intention in sculpture, are accumulated. We have first a representation of a tomb (on which is a recumbent effigy of the duke), next a building enclosing the tomb, and on this, a group including the statue of the duke—who is supposed to be surveying the field of Waterloo. The sides of the pedestal or building have bronze gates, which are the best part of the design, and internally around the walls are statues of the duke's companions in arms, and a number of flags. The angles of the pedestal are cut away for the insertion of figures (we can hardly call them *Cariatides*), just in the manner which is condemned in buildings—where the same artifice is resorted to, merely for the insertion of columns not required for the structure; and the cornice overhangs at these angles in a very unsightly manner. We could not quote a better instance to show the desirableness of architectural criticism on the exhibition, and the necessity for architecture itself—that is, good architecture—as an element in the design of works in monumental sculpture.—No. 39, which is the work of a foreigner, is defective in the structural and architectural elements; and it also exhibits the error of the representative sculpture in making beauty of form, of secondary importance—except as regards outline and general grouping. Wellington, at the summit of the monument, is shown as though in action; near him are guns and artillerymen; and round a pedestal of poor design, are statues of generals; whilst a lower pedestal exhibits an antique sarcophagus, and figures in the attitude of mourners.

No. 40, "New England," is not creditable to the country from which it would appear to have come. Wellington stands with his generals about him; and over his head, on a large ball marked "Waterloo," and to which the duke seems in dangerous proximity, stands the figure of Victory. At the back of the monument, Napoleon is represented.—No. 41 has been sufficiently mentioned.—In No. 42, "Autumnal tints, and perice," there is a figure of the duke on a pedestal, and the latter is inscribed with the name "Wellington," to which Fame is pointing. Why should the artist not have seen the necessity which art is ever under, of doing something fresh? It does not follow that we are to have eccentricity and *bizarrie*. There are some good figures in No. 42, but others are placed on the pedestal as though ready to fall off.—No. 44 includes some allegorical figures, half-seated and flying, and exhibits the tendency to common-place, and the imitation of dramatic action.—In No. 45, the sculptor has sought to produce effect by the contrast of white marble with the grey granite of his pedestals—a method of treatment which, though it may have been practically exemplified in a large number of the mural tablets in our cathedrals, and though it may once have had the sanction of Chantry, judging from his recommendation of a *leaden wash* on the stonework of Westminster Abbey, as a background—is open to many doubts. Wellington here stands on rock-work, placed on a circular pedestal; which itself stands on one of oblong form, bearing seated figures and enriched with *relievos*.—No. 46, with a statue of the duke, and figures representing Britannia and her colonies, becomes ridiculous from the pedestal formed of lions, colossal in proportion to the figures above.—No. 47, "England's Pride," is likened by the *Times* to Punch's show; and the resemblance to that particular form of *dramatic art* must have been apparent to many before they read our contemporary's notice. Besides, the *alto-relievo* is so managed, that one of the horses is shown as having but three legs.

No. 48, "Da Courage," exhibits architectural features prominently, under the idea of union with the building; but at the same time misconceives architecture as well as sculptural principles. An arch, with pilasters and entablature, as though a reduced copy from one of the *bays* of the nave, supports a statue of the duke. Beneath is a sarcophagus, covered by a pall, the ends of which are raised by figures of Duty, Truth, Peace, and Religion. The pedestal displays a number of *relievos*, which, being in low relief, seem in their treatment to trench too much on the province of pictorial and landscape art. One of them is a view of Walmer Castle, showing the sun setting.—No. 49, "Victory and Peace," would have appeared never to deserve what we said of its general character—which, however, we thought suitable to objects of small dimensions—had the lion, which is introduced in the base, appeared less uncomfortable. A figure of Wellington is of course the main feature. The figures with outstretched arms, holding wreaths, form the best part of the design.—Nos. 50 and 80, by the

same author, each having the motto from Shakespeare—

This star of England; fortune made his sword."—"Most greatly liv'd"

have bronze sculpture and pedestals of gray granite. Bronze was, we believe, preferred, by the artist, on the ground that marble cannot be preserved in a slightly state in St. Paul's, where the monuments are generally covered with dust, and are frequently broken. We should be scarcely ready to admit that advantages in point of artistic effect, would attend either the general, or the partial use, in prominent positions, of bronze. In the one case, a deadly sombre effect would pervade the edifice—far different to what the "dim religious light," which may be really wanting to the building, could impart to it; in the other case, in place of the architectural uniformity in the arcades, and the beauty of perspective *gradation* which results, spaces would be dotted out, at irregular distances, which would wholly mar the architectonic effect, as designed. But Nos. 50 and 80, as referred to in a former notice, are very remarkable for the beauty and technical skill which are exhibited in the separate figures and in the modelling; though they nevertheless exemplify the observations which we have made, as to the absence of other requisites in the works of some of our best sculptors. In No. 50, passing over the question raised by some, whether an equestrian statue would be desirable in the Cathedral, there is little that is really monumental, or that touches the feelings through the presence of a poetic ingredient. The work is a simple representation of Wellington, with figures of his generals in front of the pedestal; excepting that at each end of the monument is a figure holding an olive branch; and these features are perhaps the best parts of the composition. The pedestal is blank and tasteless. This model it is right to say, as No. 80 also, was accompanied with four figures besides those spoken of—intended to stand in re-entering angles of the architecture of the building, and which would probably have had much value in the grouping. These figures, however, were not allowed to be exhibited, as we may have mentioned. The other model, No. 80, mingles the representative and the allegorical forms of expression—or places them in what we consider too close vicinity; but has we think greater merit than the other work, and has some beautiful episodes—such as the group of the mother bending over the dead.

No. 51, "Waterloo," includes a figure of Wellington with allegorical figures, and an Ionic column supporting a gilded Victory. This composition is placed on a black pedestal, decorated with a profusion of gilding to festoons and *relievos*.—No. 53 exhibits anything but the characteristic of "Power," which is its motto. It is the proscenium of a show, in which is a *relievo* copied from a well-known engraving of the duke in his study. No. 54, "Mulum in parvo," is in some respects better designated by its motto; but the *mulum* is the abundance of details rather than the higher *much* which may be expressed in small cubical or superficial compass. Wellington is here a seated figure; and, the irreverent would say, looks as if he were being patted on the head by Victory. The pedestal is covered with *relievos*; and it has at the angles crouching figures, which are the best features. The busts above them are as much out of place, as the one pediment over another that is condemned in architecture.—No. 55, "ΤΟΥ ΔΗ ΤΟΙ ΚΑΘΩΣ ΕΤΑΙ ΟΣΟΝ Τ ΕΠΙΚΛΑΝΑΤΑΙ ΗΘΕ," is a work which we have mentioned. It includes an equestrian statue on a double pedestal, and a still more lofty arrangement of pedestals with allegorical figures, and a Victory at the summit. The dados of the pedestals generally are enriched with *relievos* of processions. The artist deserves praise for his recognition of many of the desiderata of monumental sculpture, inclusive of good architectural detail.

In No. 56, "Avon"—where there is an excellent seated figure of Wellington, and figures, also seated, of Devotion, Energy, Order, and Decision—the architectural detail of the chief pedestal is not equal to the demand; and the monument would, we think, be even better without the modillion cornice. We may be accustomed to it in buildings; but, whilst requiring architecture in monuments we require also design in ornament, from the artist—the sculptor—whose province it should be specially to supply it. The titles "Devotion," "Energy," &c. are written below the figures, otherwise the allegory in the case of some of them, might be what is called "fetched."

Nos. 57 and 60, marked "Students," are by the same hand, and very nearly resemble one another. The chief difference may be expressed by our saying that No. 60 has at the back of the monument, a door, or the representation of one, to a tomb; and that the end of a sarcophagus is carved on the front of the same monument; whilst in the other work, the sarcophagus form is marked by incised lines.

It will be observed that No. 60, assuming that there is not an obvious and "practicable" entrance, or descent, would not observe principles which we have endeavoured to mark out—namely, that where there is no actual tomb, none should be indicated, but that the work should be strictly *monumental*. The end of the sarcophagus may be approved of as simply emblematic—not placed there in the manner of mimicry or deception: the indication of the form by incised lines, however, would, according to our view, be preferable. In other respects, the design treating it as the same, in each—so it is, with slight interchange of figures—deserves particular commendation. Whilst it is admirable in the technical sculptural requisites—especially in the modelling of the figures, and the arrangement of the whole group of the Duke, with Peace and War, which surmounts the monument—structural disposition is attended to, and the allegorical figures or personifications of countries in the lower part of the monument, are introduced with recognition of the principles for which we have contended. Inscriptions also play their part. The only detractor from the merit of the work in certain particulars, arises from the detail—as of the mouldings. This is somewhat inelegant and wanting in novelty. On the base is inscribed: "Fiere et memisse relictum est."

No 58, with a motto from the Fairy Queen:—

"Right, faithful, true he was in deed and word,  
But of his cheers did seem too solemn sad,  
Yet nothing did he dread, but ever was y-dradd,"—

has a black marble sarcophagus or slab, supported by pillars, and bearing a recumbent figure. At each angle is a kneeling soldier.—No. 61, "The Path of Duty is the Way to Glory," is an endeavour to represent by different figures, the duke at various periods in his career.—No. 62, "In God and the Britons I hope," appears to be a foreign production. There is some design about the pedestal, which is composed of coloured materials; but the proportions of the sculpture appear defective.—No. 63, "Let us guard our Honour in Art as in Arms," on the other hand, is quite wanting in the architectural element just referred to. Wellington and his generals are represented—in bronze.—No. 64, "Virtute et viris virtutis," is a building of black and coloured marbles; and it contains the duke's hat and a gigantic coronet. Need we say more?—No. 65, "Roma," has a poorly-modelled figure of the duke; but we were induced to notice it for the general attention to architectonic principles, and the novelty which is attempted in the details of the circular pedestal, and the lower one of oblong form. Resting on the latter, are seated figures on each side, holding a circular tablet, and in the lower pedestal are boys with festoons, and medallions with the names of great battles.—No. 66, "Virtute Prudentia Victor," is a work which would have deserved a more prominent place than it now occupies in these notices: it has, indeed, such excellence as is seldom found in monumental sculpture. It is true that architectural detail is not elaborated; but architectonic principle is attended to, as in the general grouping and mass: the group stands upon a proper moulded base; and the sculpture, which is beautifully modelled, tells its story—and that a thrilling and a full one—yet has a pervading character of simplicity. A plain marble slab, slightly diminishing, with a shallow niche on each side, forms the background to the principal allegorical sculpture; and it supports a group of Wellington in civil costume, returning his sword to Justice—Britannia on the other side. The group in front of the slab represents Victory the result of Valour and Wisdom, and the group at the back, Religion, Liberty, and Peace. At the ends are angels with the terrestrial and celestial coronets. There is no extravagance of action here, nothing but what is within the limits of the sculptor's art; and nothing but what tells the more, for not attempting to go beyond that art. Neither is there Pagan association of ideas, nor use of allegory in any manner but that which can be readily understood.

There are a few other models which may require notice. These we shall mention in a future number, when we shall offer a few concluding remarks.

#### DOINGS IN NEWGATE.

In preparing for the new block of cells about to be built in Newgate, the wall of old London has been cut through, where it runs from north to south across the prison, about a hundred feet to the east of the Old Bailey. The upper part, about 8 feet thick, consisted mainly of masses of ragstone concreted together; but in the lower part layers of Roman bricks, at intervals of about 3 feet in height, were found, as in other portions of the wall, of which descriptions have been published at different times. In the illustrated account of the wall and gates of old



London, given in our volume for 1855 (vol. XIII. pp. 221-269), the position of New-gate, and the course London wall took, will be seen. In digging out at the side of the wall, near that part of the prison formerly known as the condemned cells, it was found that the foundations had been laid on what were evidently the debris of the fire of 1666. The prison was restored by Wren after that event (1672). Lower still were what might have been the evidences of another fire, which would take us back a long way in the history of the metropolis: these, however, were not clear. It might have been expected that some interesting things would have been discovered while excavating, but this was not the case. There were some glass bottles containing liquid, and we have seen a fragment of a Roman earthenware vessel which was taken out, possibly a mortarium, with the words—

MARINVS  
LLOED

impressed on the rim, and placed as we have set them. The impression is sharp and clear.

Adjoining the east side of the old wall, towards its northernmost extremity within the prison, is a concreted mass, which may have been the foundation of a part of the gate or some adjoining building. New, though the gate there was called, it was in use as a prison from the time of King John, and there is record that in 1218 Henry III. commanded the sheriff to repair the jail of Newgate for the safe keeping of the prisoners. Omitting mention of intermediate events, the gate and the prison were partially destroyed by the fire of London in 1666, and were reinstated. In Lord George Gordon's riots of 1780, both were burnt, and the gate was not reinstated. A new prison had been commenced, such as we now see it, in May 1770, from the designs of George Dance, the architect of the Mansion-house; and if the visitor look up at the wall of Dance's building, on the south side of the area which has been cleared for fresh constructions, he will see where the fire of the rioters has blackened and calcined the stonework. Lord George Gordon died in the prison some years afterwards, 1793. Newgate consists, as many of our readers will recollect, of a centre and two wings, north and south. It is in the northern portion, bounded by the Old Bailey and Newgate-street, that the new works, under the direction of Mr. Bunning, are being carried on. Dance's external walls will be left up, but within these a block of cells, abrogating the present day-room system, will be built 44 feet wide and five stories high! Means will be provided to enable the van to enter within the walls, and so to avoid setting down the prisoners in the road. A large amount of underpinning to the adjoining buildings has been required, which was not calculated on. Messrs. Brown and Robinson are the contractors.

#### THE MAIN DRAINAGE OF LONDON.

The plans for the drainage of London prepared by the Metropolitan Board of Works were referred by Sir Benjamin Hall, it will be remembered, to Captain Galton, Mr. James Simpson, and Mr. T. E. Blackwell, engineers. These gentlemen have made their report, and it has been laid before Parliament, and forwarded to the Board of Works. The conclusions to which they have arrived have been given in the daily papers. The evidence and plan, however, are not yet published, so that the report cannot yet be fairly discussed.

Briefly, the main conclusions to which they come are these:—

That the influence of the sewage on the river is pernicious.

That in order to purify the Thames from sewage, it will be necessary to exclude from it not only the sewage of the metropolitan district, but of the adjacent districts.

That the plan of the Metropolitan Board of Works does not provide for the removal of a sufficient quantity of sewage from the metropolitan districts; that the amount of rainfall which it is contemplated by this plan to intercept from the river should be increased; and, that the plan does not make adequate provision for removing from districts adjacent to the metropolis the sewage which flows into the river within the limits of the metropolitan district.

That the prospective population of the metropolitan district, for which provision should be made, is 3,678,069, as compared with 2,362,236 in 1851; the population of the suburban districts being 401,000, as compared with 154,088 in 1851; the total prospective population being 3,979,069. That the only mode of estimating approximately the probable amount of sewage from the district is

to assume a certain quantity per head of the population. That 7 cubic feet per head is the amount for which provision should be made; that it appears from our experiments that half this quantity passes off in eight hours, and that no sewage should be permitted to flow into the Thames or in or near the metropolis until it shall have been diluted with five additional volumes of rain-water in the suburban districts, and that in the eight hours of the maximum flow of the sewage, provision should be made for removing two-fifths inches of rainfall in the urban districts.

That no system of drainage is adapted for the metropolis which does not remove the level districts from floods, and that the system which is adopted must therefore provide for intercepting the upland drainage.

That the so-called deodorization of sewage does not remove the highly putrescible soluble constituents from the liquid which passes off; and that, consequently, the liquid, after deodorization, must be disposed of in the same manner as ordinary sewage water; that we do not believe that the deodorization of London sewage could be carried on without creating a nuisance; and that no plan would be effectual with the increased volume arising from rain.

That the value of the fertilizing matter contained in London sewage is undoubtedly great, but that the large quantity of water with which it is diluted precludes the possibility of separating more than about one-seventh part of this fertilizing matter in any known economical process; that a copious dilution of the sewage is necessary to the health of the inhabitants of the metropolis; and that therefore the sacrifice entailed by the dilution must be endured.

That, under circumstances (stated), and having regard to the inexpediency of making the question of the effectual drainage of the metropolis dependent on commercial considerations, the only practicable mode of disposing of the sewage of the metropolis is to provide for its rapid removal from inhabited districts, and for its collection in main outfall channels, where private enterprise, under proper control, may be at liberty to utilize it; but that, when not required for purposes of utilization, these channels should provide for its flow in the most expeditious manner into the sea.

That it is not desirable sewage from both sides of the river should be taken to one outfall.

That the proposed outfall at B\* in Erith Reach is objectionable, because it would not effectually prevent the drainage from surrounding within the limits of the metropolitan boundary; because it would have a deleterious effect on the health of the district, and because it would probably be prejudicial to the navigation.

That the best outfall on the north side is a place between Mucking Lighthouse and Thames Haven, in Sea Reach; and that the best outfall on the south side is Higham Creek, in the Lower Hove.

That in order to intercept the sewage of a large area, a level should be adopted a little above that of the highest tides, viz. 5 feet above Trinity high-water mark, as the level from which the sewage should gravitate at the river Lea on the north side, and the river Ravensbourne on the south side; that the sewage should flow thence into main outfall channels; and that in the main outfall channels use should be made of tidal water near the metropolis to assist the flow, and to effect at the same time the dilution of the sewage.

That the area from which the sewage would be so intercepted and removed, without having recourse to artificial means in the metropolitan districts, is about eighty-one square miles; and the area from which the sewage would be lifted is nearly thirty-eight square miles.

That the cost of the main outfall sewers will be 3,144,300*l.*, and the cost of the internal system of intercepting sewers in the metropolitan district will be 2,292,985*l.*, and the total cost 5,437,285*l.*. That if the outfall channels were not carried beyond B\* in Erith Reach the expense would be reduced by a sum of 1,719,300*l.*

That the works should occupy five years.

That towns and villages in the line of the main outfall sewer should discharge their sewage into these channels, and should contribute towards cost.

And that they are opposed to the diminution of the size of the sewers.

We learn from the report (what, perhaps, is not apparent in the "conclusions") that the sewage is to be taken for a certain long distance in vast open channels, commencing, if we understand it rightly, just beyond Barking on one side, and in the marshes below Woolwich on the other, although in one part of the report the much nearer approach to London of such channels is hinted at.

"A channel capable of conveying the total amount of sewage and rainfall to be removed on the north side, at a velocity of 2 feet 6 inches per second, would be 39 feet broad and 16 feet 6 inches deep; and a channel capable of conveying, at a velocity of 2 feet 6 inches per second, the total amount of sewage and rainfall to be removed on the south side, would be 37 feet broad and 16 feet deep. These channels would require a fall of 6 inches per mile; and in their execution the proportions would be, to some extent, adapted to local circumstances."

These channels they propose to cover only "in the neighbourhood of towns, buildings, and crossings of public roads," considering that the sewage will be diluted so as to be a "comparatively innocuous stream." The notion of these rivers of filth is not as agreeable one; if now, when diluted by the whole Thames, the sewage creates an enormous and health-destroying nuisance, what must we expect from it in the condensed stream proposed by the referees?

At a meeting of the Metropolitan Board of Works, held on Tuesday last, to receive this report, a very strong objection to the proposed open channels was expressed; but it was ultimately decided to wait for the circulation of the appendices and maps mentioned in the report before coming to any decision.

#### AUTHORSHIP OF SONG ON PUGN'S "CON-TRASTS."

In reply to the inquiry,—The author of the little *jeu d'esprit*, published in your last week's impression, "Oh! I have seen the work just out?" &c. was Mr. James McCann, then, and I believe now, of Crown-street, Finsbury.—W. W. WARDELL.

#### THE SEWAGE MANURE QUESTION.

REPORT OF MR. H. AUSTIN, C.E.

PENDING the deliberation and decisions of the Sewage Commission, a report has been made by Mr. H. Austin, who had some time since, and previously to the appointment of that commission, investigated the subject with the view of reporting, as he has done, on "the means of deodorizing and utilizing the sewage of towns," to the President of the General Board of Health, as their chief superintending inspector. This report has been printed, and a copy of it is now before us.

Mr. Austin here enters pretty fully into the whole subject, treating *seriatim* of the constituents of sewage; its deodorization and manufacture into solid manure by chemical and mechanical process; the utilization of sewage in the liquid form, as by open irrigation and underground pipes, &c.; and the agricultural results from the use of sewage manure. In dealing with the subject of chemical processes for separating the solid matter of sewage, he describes Mr. Higgin's process and the Tottenham works, Mr. Wicksteed's patents and the Leicester works, the Manchester experiments, Mr. Stothert's and Mr. Henspath's processes, Mr. Dover's patent or Macdonald's powder, Mr. Manning's process and the Croydon sewage works, the Clifton Union sewage works, &c. Under the head of "Mechanical Processes for separating the Solid Matter of Sewage," he describes the Cheltenham, Uxbridge, Ely, and Hitchin and Dortmund works, and the use of peat charcoal and Boghead coke. With reference to the utilization of sewage in the liquid form, the reporter speaks of the Craigentony and Tavistock meadows, the sewage irrigation at Harrow and Crediton, and at Milan, the Pusey and Clifton meadows, and Mr. Bickford's system of irrigation. A list of cases is given where liquid farm manures are distinguished, as at Tipple Farm (Mr. Mechi's); Myer Mill Farm, Ayrshire; Mr. Harvey's farm, near Glasgow; Mr. Walker's farm, at Rugby; Mr. Worsley's, at Rusholme; the Earl of Essex's, at Watford; the works of the Metropolitan Sewage Manure Company, and those at Dartmoor Prison, &c. Various plans are compared in the report, including some of works recommended by Mr. Austin.

Amongst the conclusions to which the investigation of the whole subject has led the reporter, are the following:—

That although from the earliest agitation of the question of sanitary reform and of the complete drainage of towns, the mischief from pollution of rivers on the one hand, and the waste of valuable manure on the other, by the direct discharge of the sewage, was insisted upon, no conception was at any time formed of the extent of the evil which now so imperatively calls for remedy.

That although the means of remedy by deodorization appear to be as yet but imperfectly understood, and demand further investigation, various processes have for a long time been in more or less successful use for this purpose. That the employment of some of these, known to be destructive of the fertilizing power of sewage, would involve expense without any return; and although such expense, if unavoidable, should not unreasonably be incurred to avoid any permanent danger to the population, it appears that other deodorizing materials are not destructive of that fertilizing power. That it is most important, therefore, to determine whether the fertilizing elements in the refuse are presented in such form as to be practically available for agriculture, either in the solid state or in the liquid form, so as to avoid the injurious consequences and enormous waste of throwing away the sewage.

That chemical research has not yet arrived at any satisfactory method of economically arresting from solution the fertilizing ingredients in sewage, while the analyses of solid sewage manures, manufactured under various patents, show, that although for the most part possessing a certain low value, they do not justify the high prices at which they have been offered to the public; nor does there appear to be evidence of any agricultural results, derived from their use, which will support such a view of their value.

That the manufacture from excrement of a dry portable manure, as practised at Paris, although realizing results of greater value, is applicable only where the cesspool system prevails, and leads to an aggravation of the nuisance of that system, which due regard for the public health would not tolerate.

That the separate system of drainage, frequently proposed as a solution of the sanitary and agricultural difficulties of the sewage question, would increase immensely the cost of drainage works; would add to the sources of danger to the public health; and would tend to a waste of fertilizing power.

That the practical experience obtained during many years at Edinburgh and Milan, has shown the great value of sewer water on grass lands, although applied in a state of great dilution; while valuable experiments have shown the power of soils to remove from solution, and retain for vegetation, the fertilizing elements.

That although immense agricultural results have been obtained from irrigation with sewage water at Edinburgh, the method employed has given rise to much complaint of nuisance. That this arises for the most part from foul deposits in wide ditches, and from the large evaporating surfaces of the sewage constantly exposed in the channels of irrigation.

That all such sources of nuisance and danger are preventable, and should not be tolerated. That no ditches should be used, and that the sewage should be exposed only during the act of irrigation of each portion of the land, when it would be immediately absorbed and deodorized by the soil.



That in order to avoid all further risk of injury to health, whether from discharge of the sewage into the rivers and streams, or from its application to the land, it appears desirable that the solid matter should in every case be separated from the liquid sewage at the outfall, and that a cheap portable manure should be manufactured therefrom for use in the immediate neighbourhood, as practised at Cheltenham. That it should be mixed with the ashes of the town, or such other deodorizing material as may be most suitable for application to the surrounding land, and prepared, if desirable, with other manuring ingredients for particular crops.

That it appears probable that such operation will in most places pay its own expenses, but that as some such measures are utterly necessary for the public health, even though involving some expense, it should be the duty of Local Boards and other governing bodies to carry it out, just as much as arrangements devolving upon them for removal of dust or other refuse from the town. It should form, in fact, part of such service, and might be combined in the same contract.

That the liquid portion of the sewage, thus cleared of its solid matter, but still retaining its chief value as manure, might then be applied with benefit to the neighbouring lands in any quantity, but that all land upon which the method of application of the sewage is practised should, if not naturally porous, be artificially drained; as the liquid, if allowed to become stagnant, would, as in common irrigation, be likely to engender disease in the neighbouring inhabitants, or in cattle exposed to its influence.

That the distribution of manures in the liquid state by the hose and jet, from a system of underground pipes on the land, has been found, by the experience of several years upon a farm in England and Scotland, most advantageous, and that the outlay for such works is considered by eminent agriculturists, who have had experience of their benefits, as a very profitable outlay, irrespective altogether of the question of sewage distribution.

That although the adoption of the same system at Rugby, and other places, for the distribution of liquid sewage, has been found decidedly successful, the great Edinburgh results are not attainable by this method, unless combined with more ample and really means for getting much larger quantities of sewage on a given area, in less time and with less labour and expense than can be done with the hose.

That upon grass lands, for which the application is best adapted, these larger quantities of the liquid sewage, deprived of its grosser particles, may be economically distributed, especially upon the lower levels, by a combination of the underground pipe system with the subsidiary open irrigation by small contour gutters, practised by Mr. Bickford.

That this work, being of a commercial or speculative nature, and not so much required for the safety of the public health, would fall rather within the province of local companies or proprietors than of the local authorities, and to these parties all facilities should be granted for carrying it out.

That the solid sewage manure, prepared and deodorized as above proposed, may be anywhere used, and any quantity of the liquid applied on absorbent or properly drained land, without any risk of injury to health, and without any of the disadvantages constantly experienced from farmyard and other solid manures applied as top-dressings.

That in any neighbourhoods, however, where no opportunity exists for this beneficial irrigation, the liquid sewage, before being discharged into rivers or streams, should, after separation of the solid matter, be treated with lime or other deodorizing and precipitating agents; a duty which should devolve upon the local board or other governing body, as a precaution in which the public health is materially concerned.

Lastly, that it is an object of immense public concern that the poisonous accumulations of our towns, now fast becoming the sources of pollution of our rivers and streams, should without delay be rendered powerless, or further mischief, and applied, as Nature's law demands, for reproductive uses. That by this means the greatest sanitary problem will be solved, and the greatest advancement of agricultural prosperity secured.

The bearings of the whole question upon the case of the metropolis have not come under the reporter's consideration; but these, he hopes, will now be thoroughly investigated.

A discussion, we may here note, has arisen in the *Society of Arts Journal*, between Mr. Chadwick and Mr. Mechi on the one hand, and Mr. S. Sidney on the other, in consequence of the latter gentleman taking a less favourable view of the Rugby and Tipper results than Mr. Chadwick had done in the late discussion at the Adelpbi.

Within the last few years, and by dint of downright hectoring and hard work on the part of the press (ourselves included), the public apathy on the subject of sewerage and drainage, and their sanitary importance to all, was greatly dispelled, and the public mind aroused into a highly favourable state of preparation for the final settlement of this important question; and it is a pity that this favourable state of mind could not be taken advantage of while it lasts. The hitch at present lies, not with the public, but with those on whom depends the solution of the problem of the best mode of disposing of the sewage of towns, so as to leave rivers and the atmosphere near them unpolluted, and the public health uninjured. Men of science, agriculturists, chemists, and others interested, therefore, ought to agitate this problem among themselves without ceasing, till something like unanimity in regard to first principles be attained, and clear and definite practical conclusions be arrived at, on which effectual means of carrying out the grand objects in view might be based and systematically carried into operation. The metropolitan sewage question is a most urgent one, rising, moreover, as it does, with vast strides and in a rapidly accelerating ratio, into ever far and still greater importance.

#### THE HALICARNASSIAN MARBLES.

THE steam sloop, the *Gorgon*, has discharged her cargo of antiquities from Asia Minor, at Woolwich. It is said that many of the pieces are much injured, which is greatly to be regretted. We are glad to be able to lay before our readers a letter from Mr. Chas. Newton, by whom they have been sent to England. It is interesting, as conveying Mr. Newton's own impressions; and, moreover, it gives credit where credit is due. The letter is addressed to Professor Donaldson, and is dated Budrum, July 2, 1857.—

My dear Sir,—You have doubtless heard long ere this of the discovery of the Mausoleum made by me here, and I take an early opportunity of making the acknowledgment that you are, as far as I know, the only traveller except myself who took any particular notice of the very suggestive fact, that immediately north of the Aga's konak, on the shore, on rising ground overlooking the centre of the harbour, were the "ruins of a superb Ionic edifice." I quote these words from the notes which you were so good as to lend me when I wrote my memoir on the mausoleum ten years ago. Long before I ever saw Budrum I recorded my opinion in print that the spot where you noticed these ruins was the site of the mausoleum. I particularly drew Spratt's attention to this spot when he made his second survey of Budrum; but neither he nor the German traveller, Ross, would even pay the slightest attention to my suggestion. Ross wrote an ill-natured critique on my theory in the fourth volume of his travels.

One object I have in addressing you now is to tell you that the cargo of the *Gorgon*, consisting chiefly of marbles from the mausoleum, is now on its way to England. I have most carefully looked over all the specimens of architectural ornament, and have sent home the best. You will find much to study and to speculate on. I have not as yet sent home the larger marbles, which may throw light on the structure of the building; but, as I have now got a steam storehouse here of almost unlimited capacity, I shall send a good sample of these, feeling quite sure that the architects will like to examine every clump-hole, joint, mitre, &c. in a way that no architectural drawing could suffice for them.

You will find among the architectural marbles sent home in the *Gorgon* a piece of column next the base, also several fragments of the two stones forming the base. Since the *Gorgon* sailed, I have found the two pieces of column next the capital, and shall take them both. I have also sent home by the *Gorgon* a capital.

These data will, I presume, be sufficient to enable architects to calculate the height of the shaft of the column.

I have found altogether about sixty-five *frusts* of columns, but most of them broken at one end. All these, except those I send home, I have buried in the soil as I dug on and filled in, so they can be recognised at any future period, and will mark the site for ever.

You will find among the *Gorgon* marbles many specimens of coloured sculpture and architecture. I would strongly recommend you to take an early opportunity of examining these before the colours fade, as they will in a London atmosphere.

C. T. NEWTON.

#### UNSANITARY CONDITION OF THE HOUSES OF PARLIAMENT.

In the House of Commons last week, Mr. Adley asked the First Commissioner of Works whether he had any plan for the prevention of the pestilential stench which came every evening into every window in the river front of the Houses of Parliament; and also whether there was any power to enforce better trapping of the drains, or a removal of the deposits of bones and other refuse on the opposite bank, or whether legislation for the purpose was necessary; or, if there was no redress, whether any plan had been suggested by which the stench might be shut out of the houses by closing all the windows on the river side, and admitting air from another direction.

To this appeal of the hon. gentleman, Sir Benjamin Hall replied that the drainage of the metropolis rested with the Metropolitan Board of Works; but since representations had been made to him as to the annoyance complained of by the officers of the House, he had that morning seen Mr. Gurney, and he said that the stench came from the open sewers, and that whether the windows were open or not the stench would be the same, owing to the abominable state of the sewers. Independently of that, Mr. Gurney said that the great Victoria sewer had lately broken in near Whitehall-yard, and that all the contents had been forced down to the bridge-street sewer. The consequence has been that the blocking up of the

Victoria sewer had augmented the pestilential state of the river. With respect to the offensive trades which had been complained of, he might state that the clauses which had been introduced into the Metropolitan Act had been so modified as to be of very little use. It was a most essential clause, and one by which the local authorities were empowered to deal with the nuisances; but the course which had been pursued by that House had had the effect of taking out of the hands of the local authorities all power in the matter, and the consequence was that they were now at the mercy of hundreds of persons carrying on offensive trades along the banks of the river, such as bone-bollers and the like, who, under the provisions of the Act as now constituted, might do what they liked, without reference to the health of the metropolis; and he must say that his hon. friend who put this question was mainly instrumental in making the alterations in the clause in question. The latter part of this statement was received with laughter, in which, if the matter was not so serious, we should feel inclined to join; but while we commiserate the present condition of our legislators, we cannot but remember the thousands in London—some poor and helpless—who are poisoned by bad drainage and the deposits of bones and other refuse.

We trust that the evil sanitary condition of the Houses of Parliament will soon meet with a remedy, and that upon the principle that "A fellow-feeling makes us wondrous kind," an experience of the disagreeable consequences of bad sanitary arrangements may cause the makers of the laws to pass more stringent and useful measures. About a century and a half ago the metropolis was overrun with bands of thieves and robbers, who were permitted to pursue their avocations without much interference from the City authorities. However, the Queen had a narrow escape from the rogues on her return to St. James's from a visit to the City: one of the high City dignitaries was effectually robbed, and then vigorous measures were put in force, and so many of the thieves were taken that the public safety was speedily restored. In like manner, may be, out of evil will come good, and the present suffering of the members of the Legislature may be the means of directing such proper measures against the bone-boiling, tallow-melting, and cat-gut manufacturing, as will enable the pent-up dwellers in many a household to open their windows in the hot summer-time with comparative pleasure.

As to the fresh tumbling in of the Victoria sewer, we must one day go into a calculation of what that wonderful piece of drainage work has already cost the rat-catchers, and what it is likely yet to cost!

#### RESTORATIONS AT BOSTON CHURCH, LINCOLNSHIRE.

BOSTON IN AMERICA TO BOSTON IN ENGLAND.

THE Cotton memorial, comprising the restoration of the south-western chapel of Boston church, Lincolnshire, has been completed, and the chapel restored. This work has been done by subscription, as we have heretofore noted, emanating from natives and residents in Boston, Massachusetts, and in honour of the Rev. John Cotton, an English Boston worthy, who, from 1612 to 1633, when he emigrated, was vicar of our own Boston, and thereafter became the first pastor of the new Boston, which was named in honour of this spiritual teacher, albeit a bit of a persecutor himself in his day, as too many of those who were among the persecuted on this side the Atlantic very soon became so soon as they had the power on the other side of the same wide way to "liberty" of conscience. Cotton, however, who was very instrumental in establishing the new Boston in the new England, died, it is said, universally respected, in the year 1652. Many of the earliest settlers in New England emigrated from Lincolnshire, and especially from the vicinity of Boston, so that the present memorial may be said to manifest the existence of even closer sympathies and relationships with Boston than those excited through their Cotton bond of union. Several of the subscribers, nevertheless, are descendants of Mr. Cotton himself.

The work of reparation was commenced in August, 1856. The chapel restored is about 40 feet long by 18 feet broad. It was in a state of dilapidation; the tracery of its windows sadly mutilated; the floor broken up and irregular; and the roof in a dangerous condition; the outer walls perished and decayed in great measure, and the inner ones disfigured with ages of whitewash, &c. So great, indeed, was the work of reparation, that, probably, the old chapel might have been built at a less cost than has been required for its restoration. Restoration, however, was the object in view; and, under the direction of Mr. Scott, it has now been completed. The outside walls have been repaired; the fine tracery of the three southern windows restored; the southern door reduced to its original dimensions; the ornaments of the buttresses



and pinnacles, in great measure, replaced by new ones in unison with the originals. The window at the west end, which was almost entirely destroyed, and its space filled up with bricks, has been restored, and its Perpendicular tracery made perfect. The roof is new, and of the same pitch as the former, and the whole of the eastern end of the chapel has an appearance of complete reparation.

In the interior, the ceiling has been replaced by a new one of Perpendicular panelled work, in imitation of such portions of the old one as remained. The floor has been levelled, and repaved with Minton's patent tiles; the walls relieved from whitewash, and repaired; the arch, and all the remainder of the east end, rid of encumbrances. In doing this, an ancient sedilia has been discovered. There is also an ancient piscina near the south-eastern corner of the building. The eastern arch contains a brass tablet of large size, bearing the inscription, from the pen of the Hon. E. Everett, of Boston, Massachusetts.

The tablet, and its carved surroundings, are of Caen stone, and measure 5 feet 9 inches in length, and 2 feet 9 inches in width. The brass plate, and its inscriptions and ornaments, are the work of Messrs. Hardman, of Birmingham. The ten stone corbels which sustain the principal timbers of the roof, have been faced with the armorial bearings of ten families of New England, descendants of John Cotton, subscribers to the Cotton memorial, or descendants of early settlers in or near Boston, in Massachusetts, who emigrated from old Boston and its immediate neighbourhood. The windows have been entirely re-glazed with semi-pellucid glass, in the ancient lozenge style. The interior mouldings of the windows and doors, the corbel heads, &c. have been restored.

The entire amount received from the citizens of Massachusetts is, in English currency, 673l. 2s. 4d. of which nearly 120l. was expended in the brass tablet and its carved-stone frame-work.

#### WORKS IN IRELAND.

In this *ultima Thule* [Derry, July 24] I have only to-day seen your paper of the 18th, and am, therefore, somewhat late in noticing your "Scraps from Ireland." In your notice of the Dundalk competition, I probably share the opinion of the thirty or forty disappointed competitors, that the design chosen was not the best, though we should probably not equally agree as to which was; but having seen the selected design, I can bear testimony to its being a very creditable one, although sadly disfigured by two disproportionately large arch-headed gateways to the markets and corn-exchange; yet still it bears no evidence on the face of it of an intentionally unfair decision on the part of the committee, and I think competing architects not unfrequently charge committees unfairly with partiality in deciding in favour of local architects. It often happens that those resident at the place know better than others what are exactly the desiderata better than they can be set forth in any set of instructions, and moreover, are acquainted with the peculiar views and crotchets of influential members of the committee, and accordingly embody them in their plans. In this case, too, the usual problem for competitors, giving a very little money to do a great deal of work, was set before them in a most aggravated form, and I believe the tender from Mr. Murray, *builder*, accompanying the plans of Mr. Murray, *architect*, helped not a little to determine the selection. The committee seem wisely to have determined not to recognise the identity of the two individuals, and it is quite possible that in these days there may be builders found who do not comprehend the difference, and who may choose to tender for works under the superintendence of Mr. Murray, *architect*. Pity the fate of that *bipartite* gentleman when the bill of extras comes in. Garrick between tragedy and comedy does but faintly foreshadow it. The award of premium No. 2 to Mr. Neville is certainly "a coincidence."

With regard to the Lurgan Mechanics' Institute, the committee cannot be charged with partiality, inasmuch as they "knew not Joseph;" but in this case also twenty-eight gentlemen feel themselves aggrieved. It is said it cannot be erected for the money, namely, 1,200l. In answer to this I can simply state the facts: the committee resolved before I made my working drawings, to make some alterations and additions, including an observatory, a rain-water tank, and a large room in the basement; and as they wished fairly to test my estimate, these were separated from the original work in the bills of quantities and tenders. A tender was received from a respectable Dublin contractor for the whole for 1,300l. But the committee, preferring a local contractor, accepted the tender of Mr. M'Connell, of Lurgan, for 1,315l. inclusive of 87l. for work added subsequent to the competition. I think few will deny that this was a fair margin, viz. 28l. in 1,200l. The committee had,

I believe, fixed a higher one as the maximum that they could in justice to other architects allow, and this is really a point deserving the consideration of competing architects: to require an exact adherence to the sum specified, all who understand the matter know to be absurd. If we could settle among ourselves what was really fair, it would help us and help committees. In the case of the Thule-hill Church, recently erected, my design, first selected, was, I believe, reluctantly thrown over by the committee for an excess of 400l. in an estimate of 7,500l. This appeared to me unreasonable. The committee had, I believe, received notifications from other architects, that if the estimate was exceeded they would be held responsible. Let us first set our own house in order, and then proceed to find fault with committees.

In case any of your English readers should be inclined to compete, I beg to inform them that a competition is advertised for a church (R. C.) at Ballybay, to be 80 feet long, exclusive of chancel: premiums, 5l. and 2l. 1s. *Sic igitur ad astra.*

RAFFLES BROWN.

#### MEMS. FROM IRELAND.

The foundation stone of a new chapel of ease to be erected at Bray, Co. Dublin, was recently laid by the Archbishop of Dublin. The site is at Killycroy-hill, near the point where the parish of Bray meets those of Powerscourt and Delgany, and is replete with scenic beauties, it being on the borders of the world-famed Co. Wicklow. Mr. W. J. Barre, of Newry, is the architect, and Mr. Thomas H. Lee, of Drogheda, the contractor. The general dimensions of the church are 87 feet 6 inches in length, including chancel, by 27 feet in breadth. Style, Gothic of the fourteenth century. Plan comprises nave, chancel, vestry, and bell-tower, with spire and porch. At west end is a four-light window, with elaborate tracery, and *cinque-feuille* gable light, with hood moulding, and corbels over same. The nave windows are couplets with *quatre-feuille* pierces in the heads. Buttresses are introduced between the windows. The entrance-door is deeply recessed. At south-west angle is the turret, which will be 80 feet high, square at base, octagonal at a height of 30 feet, and terminating in a bough of spire. The chancel window consists of six lights, with tracery, hood-moulds, corbels, &c. Roof of open timber work, which, with the seats in nave, are to be stained and varnished. It is intended to tile with encaustics the floor of the chancel, and the nave with plain marble. The walls to be of random coursed granite rubble, and the dressings in chiselled limestone. Expenditure about 1,400l., exclusive of furniture, which will cost 400l.

A new town-hall is in progress in the centre of the Diamond Coleraine; Mr. Thomas Turner, architect. It will present externally a façade of 103 feet, with depth of 34 feet, the end facing Bridge-street, which will contain the principal entrance, and be surmounted by a clock-tower and cupola 88 feet in height, being semi-elliptic. A parapet will surround the building, and the ridge will be ornamented. Two stories in height, it will contain on the ground floor a board-room, news-room, library, telegraph office, mechanics' institute, offices, &c., as also a small bride-well, and on the upper floor the assembly-room, 86 feet by 34, by 20 feet in height. The local black whinstone is the material used for walling, and white freestone for dressings; but some are in favour of having it exclusively of the latter material, which would involve an extra outlay of 700l.

The Royal Dublin Society have again set up for competition the roofing in of the cattle yard. The plans, distinguished by the motto "*Never venture, never win*," were publicly acknowledged to be the best suited to the requirements of the committee; but it is said that the estimates having exceeded the stipulated amount, they were not adopted. We withhold the authors' names and statement of facts relative to this competition, until the final decision shall be made known, which will be about the 20th of this month.

#### METROPOLITAN BOARD OF WORKS.

At the usual weekly meeting of the Board, on Friday last, an application from Mr. T. Little, architect, on behalf of the Westminster and General Life Association, for a columbar façade to 28, King-street, Covent-garden, was granted.

The Board has consented to the appointment of an additional assistant in the architect's department, owing to the accumulation of business, at a salary of 100l. per annum.

#### The Superintending Architect's Annual Report.

Mr. Marable, the superintending architect, presented a report of the transactions in his department from June, 1856, to June, 1857.

"It stated that having been appointed to his office by the Board, at a salary of 800l. per annum, he appointed

Mr. Walter Newall as his principal clerk, at 200l. per annum, and Mr. Henry Hart, as assistant clerk, at 150l. with 100l. additional as surveyor, to verify plans, these gentlemen having previously served in the Metropolitan Buildings-office during the eleven years of its existence. Also one draughtsman assistant, Mr. T. A. Britton, and a copy assistant, Mr. C. Y. Norwood. The report then proceeds to define the duties of the superintending architect's department, which at present only consists in the superintendence of district surveyors, and the application of special rules under the Metropolitan Building Act, differences between builders and district surveyors being transferred to the police magistrates, dangerous structures to the police, and arbitrations as to party-walls and rights of adjoining owners, to the county courts. The report gives a statistical statement of the gross total fees received by the surveyors of the different districts, from which it appears that the gross fees received amount to 19,904l. the office expenses to 4,872l. and the net revenue to 15,031l. From this list it appears that in sixteen districts the fees do not exceed 200l. each, five of which are under 100l. with office expenses to be deducted. In eleven districts the fees do not exceed 300l. each, in twelve districts 400l. in seven districts 500l. and in nine districts the fees vary from 500l. to nearly 1,000l. one only reaching 1,317l. The report represents that the expenses attending the business of a district surveyor are considerable, amounting for the whole fifty-six districts to 4,872l. or nearly one-fourth of the gross revenue. The large amount of fees (8,927l.) remaining due at the end of 1856, and of 1,756l. lost partly by bankruptcy and abated from the legal amount of fees chargeable, indicated a difficulty with which the fees were recovered; and it was to be regretted that when the law was altered, some more efficient remedy was not provided to enable the executive officers to secure that remuneration for their services to which they are legally entitled. The report then deals in some detail with the operations of the architectural department in connection with the proposed new streets and improvements in Southwark, Covent-garden, Oxford-street, and other districts; together with the parks and lines of metropolitan street frontage, for which plans and designs, and drawings, had to be prepared, and concludes with a statistical return of matters of business transacted during the year in the department, from which it appears that 2,505 papers and applications were received, 4,718 official reports and papers sent out, 364 personal surveys made, ninety-nine meetings of the Board attended, while of the number of applications made to the Department under the Building Act, 143 were granted, and 130 refused. The annual report of Mr. Bazalgette, the chief engineer, gives an account of the works executed and business transacted in his department during the year, and shows the new district sewers constructed under his superintendence. In addition to his continuous attention to the main drainage question, and the superintendence of district sewerage, he states, that there have been 563 alterations from vestries and district boards to district main sewers, and that 860 connections therewith have been formed, that he had attended 119 board and committee meetings, had presented 112 reports, and issued 1,367 official letters.

The annual report of the Board has also been published. It is an immense treatise of their transactions, the index alone being eighty-four double-column, nine pages, and the report 749 folio pages. As a voluminous record of *speculatic* matters connected with Metropolitan Local Management, it forms a vast but valuable handbook. On the memorial of the gentlemen in the various departments of the Metropolitan Board of Works, the Board have signified their approval of the introduction of the Saturday half-holiday system into the establishment at Gresham-street.

The 20th section of the Metropolitan Local Management Act requires that each year the Board shall report as to what it has effected. This the Board has now done, and the report may be divided into two parts; the first, pointing out concisely what the Act requires or empowers the Board to do; and the second, showing what the Board really has effected. The period embraced in the report is from the 1st of January, 1856, to the 30th of January, 1857.

#### METROPOLITAN LOCAL MANAGEMENT ACT.

At Greenwich Police-court a few days ago, Mr. E. T. Phillips appeared upon a summons at the instance of the Lewisham District Board of Works, charging him with unlawfully making a certain drain from premises No. 1, Shepherd's-place, so as to communicate with a sewer vested in the Metropolitan Board of Works, the said drain being of a different condition, and the communication being made with the sewer in a different manner and form than was directed by the Board, whereby he had incurred a penalty not exceeding 50l.

Mr. Trail, having heard parties, said there could be no doubt that the Act of Parliament gave the District Board of Works power to enter upon defendant's property and to make a drain through it. He could not see that defendant's interests were at all affected thereby, because having, by his own showing, made a connection in a line with the drain as far as it was laid, he could not alter such connection at any future time without the sanction of the district board, in whom sewage works became for ever vested.

The defendant, rather warmly, remarked that his worship was affording him no protection, and threatened to appeal against his decision.

Mr. Trail—It is your intention to raise a question upon the point, I will make the penalty sufficiently high.

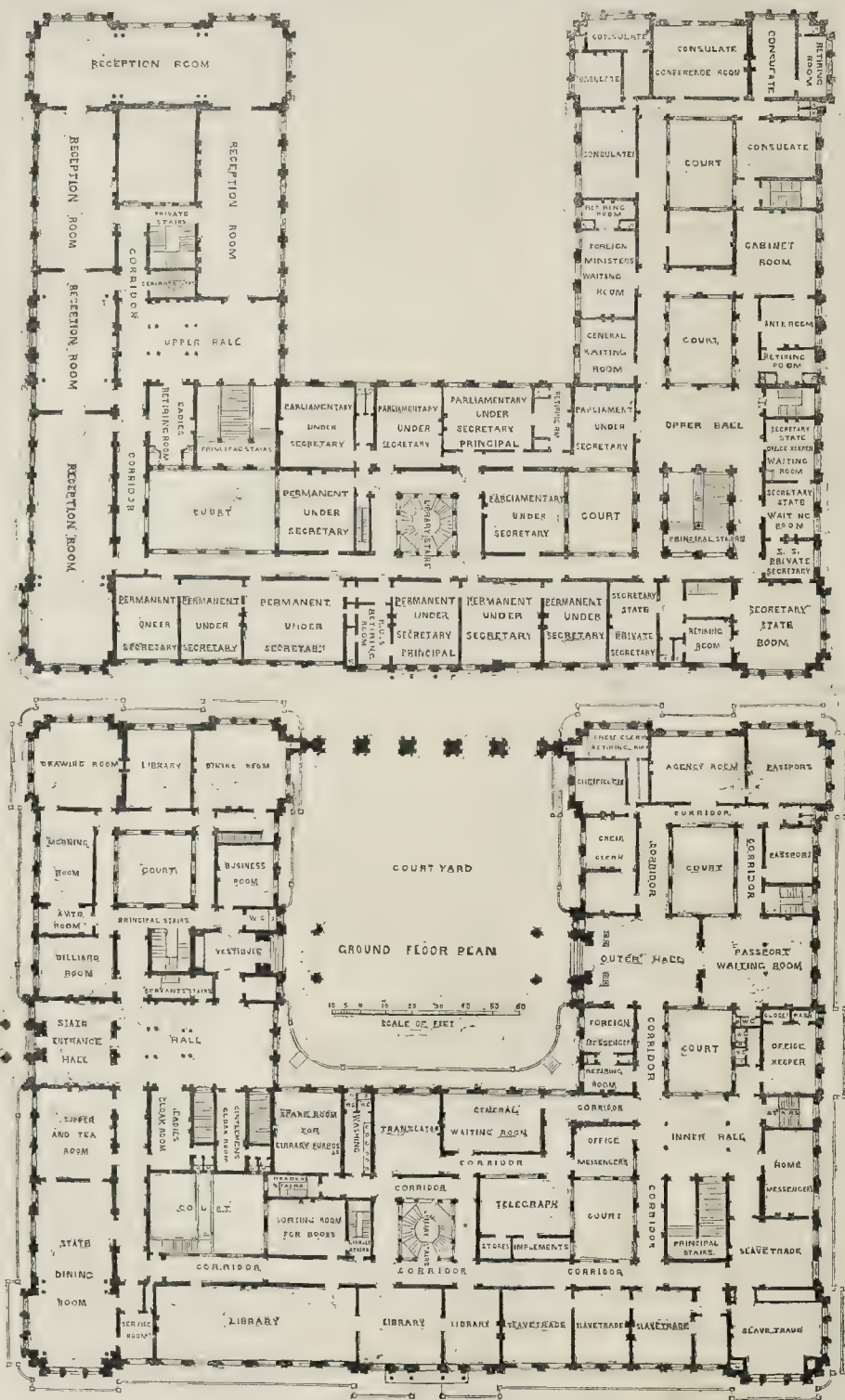
The Defendant—I shall certainly appeal to the sessions. The Board has no right to enter upon my private freehold.

Mr. Trail.—Then you are fined 50l. and I shall require you to enter into sureties to prosecute an appeal within ten days, as required by the Act.



DESIGN FOR THE FOREIGN OFFICE, TO WHICH SECOND PREMIUM WAS AWARDED.

*Plan of One Pair Floor*







DESIGN FOR THE FOREIGN OFFICE, TO WHICH SECOND PREMIUM WAS AWARDED.—MESSRS. DUNN AND BARRY, ARCHITECTS.



## THE PREMIATED DESIGNS FOR THE GOVERNMENT OFFICES.

In our present impression we give a geometrical view, and the plans of the principal floors, of the design for the Foreign-office, by Messrs. Banks and Barry, to which the second premium was awarded. Some account of the design, and of other parts of the general project submitted by Messrs. Banks and Barry (No. 58 and No. 60), will be found in our previous notice of the competition, — p. 252, *ante*. The building, it will be seen, is disposed round three sides of a quadrangle, a screen of arches and coupled columns enclosing the area on the fourth or east side, shown by our view. The style adopted is Italian, of a somewhat late character. The official portion would form the south part of the edifice, the Residence the northern. The plan is exceedingly good.

## CHURCH-BUILDING NEWS.

**East Grinstead.**—A chapel at East Grinstead, erected by the Rev. F. Glossop, the rector of the parish, was consecrated by the Bishop of Salisbury on the 23rd ult. It was dedicated under the name of the Holy Trinity. The east window and the two windows in the south wall of the chancel are of stained glass, being principally geometric patterns to suit the tracery, but the centre of the east window is a small medallion, representing the crucifixion, after a design by Mr. Alfred Bell, who has been employed in the same way in Westminster Abbey. In the chancel there are seven stalls, which are reserved by the rector for those of the parishioners whom it pleases him to honour. In the nave there are seven free sittings for the inhabitants of East Grinstead. In the organ-chamber are small marble columns, which, with the marbles used in other parts of the building, are, with one exception, from Torquay. The font stands at the entrance into the chapel, and is supported on four columns of Madrepore. The interior of the walls are of common red and black brick, relieved by horizontal courses of white stone.

**Waresley.**—The consecration of the new church of St. James, at Waresley, took place on the 25th ult. St. James's day. The old church was pulled down about two years ago, and a stone cross marks its site. The new edifice has been erected in the centre of the village, after the designs of Mr. Butterfield, in the Middle Decorated style. The cost, though aided by the subscriptions of the master and fellows of Pembroke College, Cambridge, who are the patrons of the living, and a few other friends to the parish, was mainly defrayed by Colonel Dancombe, M.P. of Waresley-park. The first stone was laid on Ascension-day last year by Lady Caroline Dancombe, who has presented to the church a painted window.

**Worcester.**—On the 27th ult. the General Health Committee of the Town Council opened the tenders for the erection of the cemetery chapels, and other advertised works. The offers were as follows:—No. 1, 5,101l.; No. 2, 4,965l.; No. 3, 7,358l.; No. 4, 4,880l. 14s. 6d. The lowest tender being much higher than what was expected, a discussion ensued, and it was ultimately resolved to ask the architect to meet the committee and advise with them upon the subject.

**Wrightington (Chorley).**—On the 27th ult. the Bishop of Manchester consecrated a church dedicated to St. James, which has recently been erected by private subscription at Wrightington, near Chorley. The church is built in the Norman style of architecture, with open roof, and dark supporting timbers. It is calculated to accommodate about 500 persons.

**Leeds.**—The "Church of the Immaculate Conception," Mount St. Marie, Leeds, which has been in the course of erection for about four years, was opened on the 29th ult. The edifice is not yet completed, as it consists at present of only nave and aisles. When finished, it will also comprise north and south transepts, two sacristies, a choir, with double choir aisles on each side, a lodge chapel eastward of the choir, and eight chapels and other dedications. The extreme length of the building will be about 210 feet, and the extreme width across the transepts about 110 feet. The height of nave inside is 83 feet from the tile floors. The edifice is erected on Richmond-hill, at the east end of the town. The building has already cost about 12,000l., a considerable portion of which has been subscribed by the Roman Catholics in the south of France.

**South Hetton.**—The foundation stone of a new Primitive Methodist Chapel was laid at South Hetton, by Mr. N. Wood, of the Hetton Colliery, on the 25th ult. The site of the intended edifice, to which school-rooms will be attached, is at the end of Union-street, and the ground has been purchased of Mrs. Pember-

ton, of Sherburn. The chapel has been designed by Mr. Greener, architect, Sunderland; and Mr. Clarke, of the same place, is the contractor. It will be a plain Italian structure, and is calculated to seat 550 persons. There will be 300 appropriated sittings, and the remainder will be for the accommodation of 600 scholars. The entire cost will amount to about 750l., raised by voluntary contributions.

**Shotley Hill.**—The ceremony of inaugurating the new Roman Catholic Church at Shotley Hill was performed on the 24th ult. by Dr. Wiseman and Dr. Hugarth, of Hetham. The first church, with the exception of the sacristy, was destroyed by a hurricane on the 7th of February of last year; and the church which has just now been opened was commenced almost immediately afterwards, upon an entirely new plan, by Mr. A. M. Dunn, of Newcastle, architect. It consists of a nave, 75 feet long by 25 feet wide, and 47 feet to the ridge of the roof; north aisle, 75 feet long, and 11 feet 6 inches wide; and south aisle, with a porch on the south-west, and a tower on the south-east, but which, at present, is only carried up two stages, with the lady's chapel underneath, and the organ-gallery above. The chancel, which is terminated with an apse, is 27 feet long and 19 feet wide. The ceiling is of wood, divided into panels by moulded ribs, arranged for decoration at some future day. It is lighted by five lancet windows, each 15 feet high: the three in the apse are filled with stained glass, by Mr. Wailes, of Newcastle, from sketches by the architect: in the centre is a figure of "The Immaculate Conception," under a canopy; and on either side is St. Patrick, the patron of the church, and St. Henry. The nave and aisles are covered with open timber roofs. Three lancets fill the west end of the nave, the centre one being 26 feet in height, surmounted by a small tracery window in the gable. The stone piers supporting the nave arches are hexagonal in plan, with moulded caps, which run up into the under side of the arches. From the exposed nature of the situation, unusual precautions have been taken by the architect to secure the building against the recurrence of a calamity that has already proved so serious. Hollow arches, built of brick and cement, are thrown at intervals across the aisles, springing from massive buttresses, and butting against the clerestory walls; in addition to which iron girders are laid on to the back of each of the principal timbers of the aisle roof, screwed into iron plates in the clerestory wall, and let into the caopied buttress heads, which are also cramped with iron into the walls. The contract was taken by Messrs. Gibson and Stewart, and Messrs. Wait and Howard, of Newcastle. The church will afford accommodation for about 800 persons.

## REDCAR.

THE foundation-stone of a new congregational church was laid on Wednesday, the 29th ult. at Redcar, Yorkshire, by Mr. John Crossley, of Halifax. Redcar is a sea-bathing town, and is yearly improving in its sanitary condition and number of visitors. Within the last three years the town has been drained, a water company has been formed, and now supplies the inhabitants plentifully: gas-works are nearly completed, and the erection of dwelling-houses is going on more rapidly than in most towns with a population of four or five thousand. Doubtless this is to be attributed to the rapid increase of the population in the neighbourhood, developed by the discovery of the iron stone in the Cleveland Hills. The church in question will be a Gothic structure, built of stone from the surrounding district. The walling will be a deep brown colour, and the dressings white, built in contrast. The stone has been given by the Earl of Zetland. There will be no gallery in the church, and sittings will be provided for 350 persons. A vestry and offices adjoin the building, and sufficient land has been purchased to erect schools and a clergyman's house upon. There will be a tower and spire at the north-west angle. The roof will be celled in the form of a semi-octagon, at the request of the committee, although the experience of the architect is against this form for acoustic purposes. Mr. James Jones, of Barnard Castle, is the builder; and Mr. Thomas Oliver, jun. the architect.

## STAINED GLASS.

**Chester Cathedral.**—A stained glass window has just been fixed at the east end of the north aisle in Chester cathedral. The subject is the Nativity of Christ; and the artist is Mr. O'Connor, of London. The donor is suspected to be the same lady who gave the west window, namely, Mrs. Hamilton, of Hoole.

**St. Mary's Church, Aylesbury.**—Another stained glass window has been placed in the chancel of this church. It occupies the middle lancet opening on the north side, and contains two vesicas, in the lower of which is a representation of the delivery of the

Sermon on the Mount, and in the upper the Resurrection of Lazarus. The subjects chosen are a sequence of those in the adjoining window, and form part of a design for a chronological series for the remaining windows. The general pattern of the glass (the work of Mr. Oliphant) is of the Early English type at Chetwode, and is similar to that of the windows already executed, excepting that the central circle is enriched with lily flowers on a deep ruby ground. The whole has been provided at the cost of Mr. and Mrs. Richard Rose, as a memorial of their brother. On a brass plate at the base of the window is the inscription.

**Wolveringham Church.**—The east window of Wolveringham church has been recently filled with stained glass in memory of the late vicar, the Rev. J. K. Miller. The window, by Mr. Wailes, of Newcastle, has four lights, representing the Bearing of the Cross, the Crucifixion, Resurrection, and Ascension of our Lord. Beneath, and corresponding to each, are types taken from the Old Testament, being respectively Isaac bearing the Wood, Abraham offering his Son, Jonah coming forth from the Whale, and Elijah going up into Heaven.

## PLOMBIERES.

## THE ROMAN BATHS.

THE great popularity acquired by this watering-place has led to the establishment of an Improvement Company, whose capital is upwards of one million francs. On making lately some excavations, the remains of Roman buildings have been found, which are of great interest. They are covered by a thick layer of rubbish, which, however, is to be removed; also for the sake of the concentration of the mineral sources, whose channels are yet unknown. As a small rivulet is running near the springs, the Romans dug an artificial bed on the left bank of the river, and covered it with *béton* and enormous tiles, and thereto conducted the river, on the banks of which stands a part of the present town. The filled up space was then built over by the *calcaria* of the baths. The Huns (from A.D. 451 to 937) devastated the neighbourhood of Plombières. It was only about 1292 that the baths were again made use of. But nothing more was done then, than to collect the waters in one of the old *piscines*, which was repaired for that purpose. One of these, and a bath (*étuve*) has been discovered of late. At its base have been found the leaden tubes, and farther on an enormous cask, the preservation of which, during so many centuries, is very remarkable, as the water passes through it now as it did 1,500 years ago. There have been formed by the long contact of the mineral waters small copper crystals, similar to those which Nature forms in the mines in her own way. The walls of the bath, instead of being made only of hewn stones, as in other Roman baths, are arranged as follows: on the hewn stone, which forms the outer stratum of the wall, is laid a cement of pounded tiles (*tuiles pilées*) 0.10 metres in thickness: on this is put a sort of yellow mastic, having the appearance of stucco, 0.02 metres thick. The *piscine* was built entirely of Roman bricks, and the walls were made of square hollow bricks, in which way the vapours circulated and heated the walls. Bronze medals of Constantine I. and Constantine II. in a perfect state of preservation, were also found. The mortar (*béton*) of the building is, as our neighbours say, "*d'une solidité prodigieuse*."

## NOTES UPON IRON.

(From our Correspondent at Wolverhampton.)

THE "quietness" in the iron trade of South Staffordshire, noticed in our last, is not now so perceptible as it was then; in other words, there is more doing, without the trade having received any great impetus.

The demand for sheets and plates continues large, and there are few mills where a good article of this class is rolled, which has not (for sheets in particular) more orders on hand than can be executed within the time prescribed by customers.

Upon *Champs*, at Birmingham, yesterday (Thursday), and at Wolverhampton on the previous day, there was a shade more cheerfulness apparent, not, however, unmixed with apprehension as to the effect that the Indian mutiny would have upon the trade. It is said that these disturbances will seriously check the export of rails to India. They no doubt will; but South Staffordshire will not suffer in this respect, because there are no rails for India being made in the district. It may, however, suffer from the increased competition in other descriptions of manufactured iron, by those districts, Wolverhampton and Scotland in particular, where rails are extensively made.

The reports from the United States, although not accompanied by many orders, yet speak in encouraging terms of the important aspect of commercial affairs in that country: the land speculations in the



west seem to have reached their limit, and the general appearances indicate the near approach of a time of much prosperity, with a good "fall" trade.

The late fatal accident in this town, from the breaking of a new cast-iron girder that was being placed in a building in course of erection, previously reported in the *Builder*, has occasioned a very general inquiry among persons engaged in the malleable iron trade, why wrought-iron girders are not used more frequently than they are. The increased cost of the wrought-iron girder would be almost met by the saving effected in weight of metal use; and before a good wrought-iron girder broke it would give timely warning by bending.

#### PROPOSED PURCHASE OF A HOUSE FOR SOCIETIES CONNECTED WITH ARCHITECTURE.

A MEETING was held at the Rooms of the Royal Institute of British Architects, on the 4th inst. to consider the best mode of purchasing No. 9, Conduit-street, for the purposes of societies connected with the architectural profession.

Mr. Arthur Aschapel, F.S.A. having been called to the chair, Mr. James Edmeston, Jun. as honorary secretary, reported on the steps taken. In the course of his remarks, as the matter was now likely to pass into a new phase, and as the names of those who had initiated it would shortly appear, included generally with many others, he begged leave particularly to mention, that the premises in question had been first brought under notice by Mr. Charles Gray, and therefore the great benefits to be realized when the whole idea was worked out, might fairly be traced to that as the first step. The matter had then been carried forward by Messrs. Aschapel, Wyatt Papworth, Gray, Hesketh, and Wylson, as a sub-committee appointed by the committee of the Architectural Exhibition, who had been most cordially received by the premises committee of the Royal Institute of British Architects, and no one had bestowed more personal pains and trouble, and assisted in a more practical manner in the later stages than Mr. Digby Wyatt, honorary secretary of the Institute.

On the motion of Mr. Digby Wyatt, seconded by Mr. J. T. Knowles, it was resolved unanimously:—

"That the want of some building available for the accommodation of the principal societies connected with the architectural profession, and affording facilities for the meetings of large numbers of persons, has been much felt of late years, and that it is desirable that that want should be at once supplied, by taking advantage of the accommodation offered by the premises, No. 9, Conduit-street, the residence of the Earl of Macclesfield."

Mr. Wyatt, in the course of his observations in support of the resolution, read a letter from Earl de Grey, P.R.I.B.A. expressing the warmest sympathy with the undertaking, and his lordship's magnificent intention, in the event of the measure proposed being carried out, of purchasing twenty-five shares in the contemplated company, twenty of which he would present gratuitously to the Institute, and five to the Architectural Exhibition.

It was proposed by Mr. Whicheord, seconded by Mr. Gray, and carried unanimously:—

"That the best mode of carrying out the desirable objects contemplated in the preceding resolution, will be by the formation of a company under the Act for ensuring a limited liability, and this meeting hereby pledges itself to support such a company by every means in their power."

Mr. Whicheord said that it appeared to him there was no other mode possible of realising the object in view than the one named in the resolution, since neither a Government grant was to be expected nor yet that any private individual would come forward with the money required. In the manner suggested, all might render some assistance, however small, and no one would run any risk whatever beyond that of which they had the full knowledge at starting. Under this Act, a creditor was bound to look to the credit of the company, not to any individual shareholder, nor could any contribution be required from a shareholder exceeding any amount that might be unpaid on the shares held by him.

On the motion of Mr. C. Mayhew, seconded by Mr. Joseph James, certain gentlemen consenting to become honorary directors, and to qualify for such an office by taking not less than ten 10s. shares each, were authorised to act in that capacity, with power to increase their number.

Mr. Edmeston then read to the meeting a list of the names of gentlemen, more than twenty in number, who had communicated to him their desire to act in this capacity; of these Mr. Tite was one of the first who most cordially taken up the scheme, and Mr. Cockerell, Mr. Beresford Hope, Mr. J. Pennethorne, Mr. P. Anson, Mr. G. G. Scott, Mr. J. Donaldson, and other gentlemen of influence, had written, expressing a warm approval, but at present the working part of the undertaking was not matured enough to enable those gentlemen to determine as to

the precise mode and extent of their assistance. It was gratifying, however, to find that, even at this very early date, and with a few persons only at all aware that anything of the kind was in agitation, promises to take shares to the extent of more than 2,000l. had already been made.

It was proposed by Mr. Edmeston, seconded by Mr. Ferguson, and carried by acclamation:—

"That the best thanks of this meeting be tendered to the Right Honourable the Earl de Grey, president of the R.I.B.A. for the kindness of his expressions towards the proposed Company, for the interest he has taken in the details of the scheme, and for his munificent offer of assistance."

Thanks, moved by Mr. Chas. Gray, and seconded by Mr. Joseph Clarke, were voted to the Institute; and the honorary secretary was requested to have printed, and to circulate by post, a report of this meeting, among members of the architectural profession, with a note requesting some expressions of opinion, as a guide to the honorary directors, at their meeting early next week, when a prospectus was to be prepared, and final steps would be resolved upon.

#### THE NEW-ROAD.

THE New-road was formed by Act of Parliament of the 29th of Geo. II., in the year 1756, but not without much petty opposition thereto from the landholders whose property lay in the line of the proposed new route to the west end. Horace Walpole notices, in one of his letters, the objection of the Duke of Bedford to it on account of the "dust it would make in the rear of Bedford-house;" and at the same time slyly tells his friend that the duke is too short-sighted to see the prospect.

A complaint was made by one of the duke's tenants, who held from him a large cow-farm in the intended route, at a rental of 3l. an acre, "that the dust and the number of people must entirely spoil her fields, and make them no better than common-land: she intreats his Grace to prevent such an evil, as it would be impossible for her to hold his estate without a large abatement of rent."

On suchlike frivolous opposition the *Public Advertiser*, of Feb. 20, 1756, remarks that "All objections to new roads, which arise merely from partial and separate interests, that happen in this respect to be opposite to the interests of the public, should have no weight." The journalist then proceeds to notice the advantages to the public in general of the proposed thoroughfare. "How much the communication with almost every part of the metropolis will be facilitated. Drivers from the west will pass from the extremity of the city to the centre in one continued straight line. Persons that have business in other parts may reach them by cross roads communicating with the main line; and persons of fashion, who live in the great squares and buildings about Oxford-road, may come into the city without being jolted three miles over the stones, or perhaps detained three hours by a stop in a narrow street. It must also be remembered that those who shall find it necessary to pass through the streets will pass much more commodiously, as the number of carriages will be lessened and the pavement preserved."

In the preamble of the Act of 29th Geo. II., it is stated, "that in times of threatened invasion, the new road will form a complete line of circumvallation, and his Majesty's forces may easily and expeditiously march their way into Essex to defend our coasts, without passing through the cities of London and Westminster."

When this great trunk-line of road was in course of construction, the progress made upon it was from time to time noticed in the public journals. Thus, under date May 8, 1756, we are apprised of its early commencement by being informed that on the Wednesday following, the trustees would meet, and that on the next day the men were to work upon it. At this period the expense of making the road was computed at 8,000l. After the lapse of a few months, during the interval of which the road-makers must have worked industriously, the following appeared in print on the 13th of September, 1756:—"It is with pleasure we assure the public that great numbers of coaches, carriages, and horsemen daily pass over the New-road, from Islington to Battle-bridge." Five days later, September 17th, we are informed that the banks and fences of the land between Paddington and Islington were levelled, and the new road across the fields opened to the public. In the *Builder* of 1756, the expensiveness of the road was adverted to, and 100,000 cart-loads of gravel estimated to be required for its completion.

The pleasant aspect of this grand thoroughfare during several months of the year, which the umbrageous foliage of trees and the gardens in front of most of the houses contribute chiefly to impart, is owing to a clause in the original Act for making the road, prohibiting the erection of any building within 50 feet of it, whilst at the same time it empowers the authorities of parishes through which the road passes to

pull down any such erection, and levy the expenses on the offender's goods and chattels. The lapse of a century, however, seems to have materially modified this penal enactment, for numerous are the instances in which the 50-feet plot is built upon.

Travelling on this highway after nightfall seems formerly to have been attended with some risk, as will appear from such notices as the following appended to the Sadler's Wells advertisements and bills of the performances:—"A horse-patrol will be sent in the New-road at night, for the protection of the nobility and gentry who go from the squares and that end of the town: the road also towards the City will be properly guarded." "June, 1788.—Patroles, horse and foot, are stationed from Sadler's Wells-gate along the New-road to Tottenham-court-turnpike, &c. between the hours of eight and eleven."

The Metropolitan Board of Works have given notice that on and after the 31st proximo, the New-road, and the separate names of places thereon, will be changed. Thus, the road between the Angel and King's-cross, will be the Pentonville-road; from King's-cross to Osnaburgh-street, the Euston-road; from Osnaburgh-street to Edgware-road, the Marylebone-road; and, further, the inhabitants are required to paint such numbers and names on their houses as the Board shall direct. W. J. PINKS.

#### AWARDS OF THE BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY.

THE council of this society met at Taunton on Saturday, the 25th ult., when the Journal Committee reported their awards for essays as follows:—

1. On the Condition of the Labourer, and the best means of improving his condition. Premium 21l. To Mr. Edward Spender and Mr. T. W. P. Isaac, of Bath.
2. On the Cattle of the West of England. Premium 15l. To Mr. Henry Tanner, of South Molton, Devon.
3. On Beans and Peas. Premium 10l. Two essays of equal merit were submitted for this prize, and the same was therefore divided between Dr. Donaldson, of London, and Mr. Colthurst, of Belfast.
4. On the Threshing Machine. There was no competition for this essay.
5. On the Management of Dung, considered Chemically and Practically. Premium 20l. This premium was divided between two essays of equal merit, one by Mr. Edward Spender and Mr. T. W. P. Isaac, the other by Mr. Henry Tanner.
6. On Roofing for Farm Buildings. Premium 10l. To Mr. T. W. P. Isaac.

#### DESTRUCTION OF BUILDER'S WORKSHOPS IN MANCHESTER.

ON Saturday morning last the workshops of Mr. William Harrap were completely destroyed by fire. In addition to the sawing, planing, and moulding machinery, stock of timber, and general work in hand, Mr. Harrap had ready for sending out a large stock of counters and other fittings for the warehouse of Messrs. Watts, in Portland-street, to the amount of 2,000l. which was entirely uncovered by insurance of any kind. The loss of workmen's tools alone was about 1,000l.; and the entire loss, inclusive of the two foregoing items, is said to have been 10,000l. It is stated that the total amount of insurance does not exceed 1,600l. It behoves all persons having work in hand to consider the propriety of increasing their insurances where circumstances shall cause them to have heavy stocks in hand.

#### NATIONAL GALLERY.

A VERDICT has been given at last by the Royal Commissioners, who have decided on numerous counts, proven and disproven, that the pictorial possessions of the nation shall be continued in their present locality. Like other verdicts of other juries (appointed to try the same question), this last award waits the approval of the high justices, whose "exequatur" will be decreed only in case that the issue be in exact conformity with their own predilections.

For the satisfaction of the public, a record is presented of the views and reasonings which induced the delegated inquirers to subside in the one *pis aller* conclusion, and the published details indicate sufficiently that great minds, when applied to commonplace subjects, are swayed and directed pretty much in the same way as are the intellects of ordinary observers among little men.

The nebulous vapours of London were first brought into debate, and to escape from their influence three alternatives were suggested,—a removal to Kensington-gore, to one of the Parks, or to the British Museum.

The utter insufficiency of the National Gallery for any national purpose, coupled with the impossibility of enlarging it, without displacing a barrack and a



workhouse, might have led away the commissioners to the contemplation of Great Russell-street. Florence, Naples, Milan, not to mention Rome or Paris, would, so far as their directing academicians are concerned, scowl contemptuously at a proposal to lodge their art-treasures in such a shrine as that which we dignify by the name of National Gallery.

We have unquestionably a site not excelled by any in Europe. The front to Trafalgar-square measures nearly 500 feet. It is filled in from St. Martin's-lane to Pall Mall-east with an elevation in respectably chiselled stone, but of such a character as needs no further commentary than that its only merit is in the adoption of the classic columns of Carlton-house, and that the dome and turrets ought to be transferred to the stables of her Majesty's new mews.

Supposing that the whole 500 feet range were dedicated to the objects of a gallery, if we are to measure the collections which the wealth and taste of this great country will inevitably concentrate in the building within another half century—even that, at its present depth, of only 58 feet!!! would be simply ridiculous. The range is all front, a single pent roof from end to end, fronting the square, and backed by an insignificant paved court about 20 feet wide; behind it, for two-thirds of the length, ranges the deformed and comparatively valueless pile of St. Martin's Workhouse; and for the other third, a barrack-yard and a poor thoroughfare, leading to Leicester-square.

In the laying out of modern structures or building speculations, it is usual when the investment is large, to purchase the back slums, to abate them, and, by combining the ground with the grand front plan, to confer an increased (and perhaps indemnifying) value upon the total outlay on a great design. New Oxford-street, Moorgate-street, Cannon-street, were all so treated. Where the concern is for a national purpose, and above all for the promotion of art, by how much the more is it not important to secure every facility for the performance of works that may promote the objects in view; or at least that Britons may be saved from foreign ridicule, to which they are now too obnoxious, of having lavished their money, and expended their labour, upon a monument of bad taste! Here, then, we have a frontage of 500 feet, and behind it an extent of depth to Henning's-row, nearly equal. The workhouse and adjacent schools are not only of small value, but they would be better in other parts of St. Martin's parish (much of which is tenanted!) and still more squalid and wretched), or removed to some other more central or extra-parochial locality.

Here is an opportunity for opening a respectable thoroughfare by Castle-street to Leicester-square, in a direct line from Spring-gardens; of making another leading duct, of suitable latitude, in continuation of King William-street; thus infusing life in a torrent from the Strand into the lumbered square,—that sealed and yet most central spot of town. It occupies a fine elevated site, and wants only clear ventilation and access: it is the haunt of refugees and exhibitioners. Let us hope that Shakespeare's prophecy may be fulfilled, and "that the great Globe itself, and all who it inherit may dissolve:" at present the wreck is beneath and around it.

But the most singular part of the manifesto, or report, of the Royal Commissioners is (in their own words), "the aids to economy which would be furnished by the rare circumstance of only one ornamental front being rendered necessary, from the disposition of the ground," &c. Now in point of fact there are three fronts or external walls;—the grand mistake facing Trafalgar-square; the brick piers next the court and barrack-yard; and the east end, affronting St. Martin's. But the rarity and the difficulty in the metropolis is to find any site that will admit of more than one front, and that in the street line. We should hold it as an immense advantage if not one front only, but four fronts, could be secured for every great public structure. Then, indeed, arts might have fair play, and something like integrity in architecture might recline from ancient models a chance of perfection.

The grand mistake committed, even in this wretched mask of a gallery (more fitted in form for an American bowling saloon than for an exhibition of pictures), is the continuation of the line to the houses of Pall Mall-east, where there ought to have been a street, or an opening of at least 50 feet wide, to detach the building, so as to make it integral.

Granting that the whole plot of nearly 500 feet square, or an area of 250,000 square feet, were obtained, it would be by no means necessary to inclose or cover all that space: part would suffice to found a structure suitable to the exhibition of the arts (*sculpture and painting*), while the remainder would admit of fine thoroughfares, where they are most wanted, and assure free access of air, with good points of view on all sides. At the same time, it would be most desirable that the five houses in St. Martin's-lane,

which, standing on a depth of 25 feet only, are built up against the workhouse, should come down: this would expose the east front in contrasting effect as opposed to the noble portico of St. Martin's; and, as the artists of the day (perhaps somewhat romantically) anticipate great improvements about Charing-cross, and grand demonstrations in architectural skill, the extension of the National Gallery scheme as herein noticed may not be considered inopportune.

Q'ONDAM.

#### APPLICATIONS RELATIVE TO BUILDINGS UNDER THE BUILDING ACT AND METROPOLIS LOCAL MANAGEMENT ACT.

A CODE of rules and regulations has just been confirmed and issued by the Metropolitan Board of Works, relative to applications with reference to buildings to which the rules of the Metropolitan Building Act are inapplicable, which should be obtained by those who are interested. It includes the following:—

##### Erection of Furnace Chimney Shafts.

All builders or other persons who may be desirous of erecting any chimney-shaft of a steam-engine, brewery, distillery, or manufactory, the same being buildings to which the rules of the Metropolitan Building Act, 1855, are inapplicable, shall, before commencing any such building, make an application to this Board requesting their approval thereof, setting out a plan of the proposed building, and such other necessary particulars as may be required by the Board. (Sec. 56, Metropolitan Building Act, 1855.)

##### Fees for Special Services by District Surveyors in Supervision of Furnaces, &c.

That the following fees be demanded and received by every district surveyor under the Metropolitan Building Act, 1855, who shall perform any of the services hereinafter enumerated, the same being special services required to be performed under the first part of the Metropolitan Building Act, 1855, for which no fee is specified in the first part of the second schedule to the Act, viz.

For the supervision of furnaces and chimney-shafts:—	
For every furnace and chimney-shaft belonging thereto, not exceeding 75 feet in height.....	£1 10 0
Not exceeding 100 feet.....	2 0 0
For every 10 feet in addition, up to 150 feet.....	0 2 6
For every 10 feet in addition, above 150 feet.....	0 5 0

#### THE CRYSTAL PALACE.

At an extraordinary general meeting of the shareholders of the Crystal Palace Company, held on the 30th ult. a report by a committee of investigation on the management was read, in which various statistics of profit and loss were given, and recommendations for the future management suggested. A reduction under the head of clerks, office expenses and disbursements, gardeners, &c., was recommended. At present 146 gardeners were employed, and a large reduction in the number it was thought might safely be effected. The cost of each display of the great fountains could not be stated; but the committee advised that they should play occasionally in the autumn on shilling days. Indeed, various suggestions for the popularization of the palace, of a similar kind, were made, such as the conversion of the Saturdays into shilling days, and Wednesdays into higher priced fêtes, the providing of better arrangements in the refreshment department for behoof of the middle and poorer classes, the distribution of small fountains of filtered water for drinking throughout the building and the grounds, &c. Advertisement in the cheaper order of newspapers was also urged, so that the million should be induced to patronize the palace more than they had done. The result of shutting out the shilling public on so many occasions, while expending large sums to attract the higher classes, was regarded as anything but satisfactory. The Italian opera concerts had been a loss to the Company of at least 5,000*l.* instead of a gain. So with the peace festival: the working drawings designed by Baron Marochetti for the peace trophy and Scutari monument were submitted to the directors at an expense of 550*l.*, and to that amount must be added 1,258*l.*, including 100*l.* to Baron Marochetti, making the total cost of the Peace Festival 1,908*l.*, against which sum the receipts in cash only amounted to 628*l.*, making a loss of 1,280*l.* to the company. A large immediate outlay for maintenance and repairs was necessary. The committee recommended an increase in the number of directors, and various other alterations and improvements in the management. The whole subject is to be taken into consideration on the 18th inst.

A new edition of the official "General Guide" to the Crystal Palace and Park, revised, with new plans and illustrations, and an index of principal objects, by Mr. F. K. J. Shenton, has just been issued. This division of the guide book also contains the railway time tables, the refreshment tariff, and other useful matters, and a new selection has been added, giving some account of the tropical and other plants in the palace, with illustrations. In the present edition too, the arrangement has been made with a view of simplifying, as much as possible, the reference to particular objects, and enabling the visitor to regularly explore, with

advantage, every portion of the palace. In noticing the issue of a new edition of the guide book to the Crystal Palace, its educational value must not be overlooked: to teach a great practical lesson in art is one of its most important objects, and it is to be regretted that it is not made more use of in this respect. In the new arrangements which appear to be on the eve of being carried into practice, could not something be done towards so useful an end, as by brief and colloquial remarks or lectures (often before urged by us) on the various objects of interest where they stand?

#### BUILDERS' BENEVOLENT INSTITUTION.

The tenth annual meeting of this excellent society was held at the London Tavern on the 30th ult. Sheriff Lawrence in the chair, supported by Mr. George Bird, Mr. Thomas Cozens, Mr. J. Newson, jun. Mr. J. Thorn, Mr. J. Williams, and other gentlemen. After a few introductory observations by the chairman, the secretary read the report, which stated that for the first time since the foundation of the institution there had been a decrease in the amount of subscriptions and donations received at their annual festival, and during the past year.

The total number of recipients, continued the report, is now thirty-six, viz.—twenty males and sixteen females. During the past year 801*l.* 13*s.* 4*d.* was distributed in pensionary relief, and since the formation of the institution, 3,699*l.* 13*s.* 4*d.* have been thus expended. The following deaths have taken place since the last report:—

John Wilkins, of Brighton, Oct. 1856, aged 68 years.  
Joseph C. May, March, 1857, aged 77 years.  
Joseph Furness, April, 1857, aged 75 years.  
Ann Stevens, October, 1856, aged 75 years.  
The subscriptions and donations for the past year amount to 1,124*l.* 0*s.* 6*d.* and the stock purchased in the 3rd and 4th Convoles, in 1856, to the Relief Fund, making the total amount of stock 6,800*l.*—viz. 3,850*l.* (stock), to the Relief Fund, and 1,950*l.* (stock), to the Building Fund. Since the auditing of the above accounts the directors have the satisfaction of announcing that they have received, through Charles Lucas, esq. the munificent donation of 50*l.* from Thomas Brassey, esq.

On the motion of Mr. J. Thorn, seconded by Mr. Cozens, the report was adopted, and the Treasurer, Mr. G. Bird, then moved a vote of thanks to Mr. Alderman Lawrence, who, as he said, had made a first-rate president for the past year. This motion was also seconded by Mr. Cozens, and unanimously agreed to. After the chairman had returned thanks, Mr. John Newson moved a similar vote of thanks to the patrons, to whose number he begged to propose that the name of Alderman and Sheriff Lawrence should be added. Mr. Simkin seconded the motion, and the matter was agreed to, as also were votes of thanks to the vice-presidents, the trustees, Mr. G. S. Smith, Mr. G. Bird, the retiring directors, the office bearers of the Crickton Branch Societies Mr. Joseph Bird, and the solicitors of the institution. Mr. Alderman Rose was then elected president for the ensuing year, and we have no doubt will do well for the institution.

#### PROPOSED MEMORIAL OF THE GREAT EXHIBITION.

On Tuesday, in the House of Commons, Mr. Laurie asked the First Commissioner of Works whether it was intended to erect any edifice in Hyde Park, in commemoration of the Great Exhibition; and, if no site had yet been adopted for Richard Cœur de Lion, whether there was any objection to allow it to surmount the Marble Arch?

Sir B. Hall said no public moneys had been spent on a memorial of the Great Exhibition of 1851, but when Mr. Alderman Challis was Lord Mayor of London, a subscription was entered into with that view. He saw Mr. Alderman Challis not long ago on the subject, and that gentleman asked him whether a site would be given in Hyde Park for the erection of such a memorial. He (Sir B. Hall) told him that he could give no positive answer until he saw the design that might be proposed. With respect to the question as to allowing the statue of Richard Cœur de Lion to surmount the Marble Arch, he did not think the public would thank the hon. member for such a suggestion.

What spiteful imp could have put such a notion into Mr. Laurie's head?

#### DISTRICT SURVEYORS' MEMORIAL.

Sir.—The report of the Committee of the Metropolitan Board of Works, upon the memorial of the district surveyors, is a most honourable testimonial of the Board to the district surveyors, but it appears to me that it does not embody the views of the district surveyors in regard to ruinous structures, for I feel that it is not the wish of the general body to be employed to make those surveys and reports, but to remove the imputation to which they have been subject, of neglecting their proper duties, and to induce a more efficient carrying out of the provisions in Part II. of the Act. I think that this would be obtained by the following arrangement:—

1st. By the commissioners of police appointing *still* the surveyor (not a district surveyor), but to have the metropolitan area divided into (say) four divisions for the purpose, and an experienced surveyor appointed for each.







of the same architectural character. The walls will be constructed of stone of the locality, with freestone dressings, lined internally with brickwork. The roofs will be of open timber-work upon the trussed rafter principle. The contrast for the work has been taken by Mr. Noden, of Leominster, builder.

*Byth.*—The contracts for the masonry and joiner-work of the proposed public-hall at Byth have been let at 960*l*.

#### DECIMAL COINAGE.

THE report of the Commissioners on the Decimal Coinage having made its appearance, much complexity of opinion as to the best method seems yet to exist. Some difficulty must appertain to any change, whatever it may be. Yet in practice I am sure there would be no difficulty whatever; and as in other States, which made great objections to a similar change, so we also shall only wonder we could have done without it so long. Permit me to ask, Mr. Editor, what may be the objections to the following plan (a simplification of the *pound and mil system*), viz.: to keep our accounts in *florins and farthings* (or cents), which can be readily converted into £, s. d.; or *vice versa*. Our coinage to be, sovereign; half ditto; dollar, or 4*s.*; florin, or 2*s.*; shilling, or half florin; sixpence, or quarter florin; threepence, or one-eighth florin; a copper, 2*d.*; one-half copper, or penny; one-quarter copper, or half-penny; and farthing, or cent. To do away with the 5*s.* or crown, the 2*s.* 6*d.* or half-crown, and 4*d.* piece; and to coin a dollar, or double florin, or 4*s.* piece, and a copper, or 2*d.* piece: our table to run thus:—

10 Farthings (or cents) .....	One copper.
10 Coppers .....	One florin.
10 Florins .....	One pound.

A crown-piece is a heavy and almost useless piece of coin: the half-crown is often mistaken for the two-shilling piece, and the fourpenny piece confounded with the threepenny piece. An English dollar would pass current all over the world, and be very useful to Englishmen; and the twopenny piece (or English copper) would also by its name (a copper) soon obtain a world-wide notoriety. Thus, 600 florins, by cutting off one figure, gives you the number of pounds; and, *vice versa*, adding one figure to the pound, always gives you the number of florins, thus: 7*l.* 1*s.* 6*d.* would be 77 florins 25 farthings. That minor division at the end of stated sums is of no moment compared with the facility for commercial purposes. As to altering the number of farthings in a penny, the public will find that some pennies weigh six farthings (allowing for wear); so that eight are equal to twelve of Victoria, others weigh four farthings, and some less, and so on. Yet no one considers the difference of moment in the ordinary pursuits of business: every old apple-woman would in a day understand the new plan, which need not at all prevent us keeping our accounts as at present in £, s. d. or Florins and Farthings, because each is at once convertible into the other.

A BELGRAVIAN.

#### Miscellaneous.

**GLAZING BRICKS.**—Will some of your correspondents inform me how I can stain and glaze the red rubber arch brick, so as to correspond with the Staffordshire blue brick; thus helping me out of a difficulty which at the present appears to me rather formidable. I am superintending the erection of a red brick building, in which the Staffordshire blue brick is introduced very freely, and with considerable effect in the plinth, string-courses, &c. and forming dressings of colour to all the jambs and arches of the windows and doorways,—in blocks of blue and red alternately. The arches being rubbed, and gauged, I find it impossible to use the blue bricks for them, as the material is much too hard to cut with any degree of accuracy,—let alone the rubbing. To be compelled to put in the arches entirely of red bricks would, to a great extent, destroy the effect aimed at by the architect; therefore, I have no alternative but to stain the red bricks blue: this the architect will not consent to unless I can put a glaze upon them, so as to correspond as nearly as possible with the blue bricks in the jambs. The staining I can manage, but I am entirely ignorant of the glazing process, and am likely to continue so unless some of your more intelligent correspondents will be good enough to enlighten me in the matter.—A CLERK OF WORKS.

**CORK SCHOOL OF DESIGN.**—From a report recently issued by the committee of management, it appears that this school, which was closed during the whole of the year 1855, has been successfully reorganised, and the committee attach a great portion of this success to the exertions of Mr. Raimbach, under whose direction the school has since been in operation. Serious differences, however, appear to have recently arisen between him and the committee, which have resulted in his resignation of the head mastership.

**ELECTRO-TELEGRAPHIC.**—The balance-sheet of the Electric and International Telegraph Company for the half-year ending June 30, 1857, shows that 89,451*l.* (less portage paid out, 2,573*l.*), have been received for messages, intelligence, subscriptions, &c. The working expenses, charges for maintenance and repairs, &c. amount to 56,129*l.*; balance, 30,748*l.* The receipts of the company steadily increase. For the first half of 1855 they were 67,689*l.*; for 1856, 78,516*l.*; and for the present half year, 89,451*l.* The directors are enabled to recommend a dividend at the rate of 8*l.* per cent. per annum.—A submarine cable is being made for the Norwegian government. This is probably the first electric telegraph which has ever been used for fishing purposes.

**A NEW MONUMENT.**—Last week a monument was erected in the chancel of Newport Church, Salop, for J. H. Adams, esq. to the memory of the late Mrs. Adams, his wife. The architect is Gothic, of the later Perpendicular period, peculiar to the reign of Henry VII. Columns, buttresses, and enriched cornice, are arranged to form a niche to receive a life-sized figure in statuary marble, expressive of Resignation. The figure is enclosed under plate glass in a metal gilt frame, which in statuary is a new arrangement, having in view the preservation of the sculpture. The coloured letters of the inscription, and the legend, "Thy will be done," are in the Old English character, and easily deciphered. The sculpture is by Mr. Calder Marshall, R.A. of London, assisted in the architectural portions by Mr. John Cobb, Chetwynd End, Shropshire.

**THE DWELLINGS OF THE POOR.**—The Earl of Shaftesbury's Bill for the prevention of over-crowding in the dwellings of the poor, has been brought down from the House of Lords for the assent of the Lower House of Parliament. The Bill enacts that no house or part of a house shall be exempted from the provisions of the Common Lodging House Acts by reason only that the lodgers in such house are members of the same family, unless such family consists solely of persons in the relationship of grandfather, grandmother, father, mother, child or children, grandchild or grandchildren; and the *onus probandi* as regards relationship will lie on the persons prosecuted at the instance of the police. The Commissioners of Police are empowered to enforce the 29th section of the Nuisances Removal Act. The Act will only apply to such parts of the metropolis as are situated within the metropolitan police district.

**MEDWAY UNION COMPETITION.**—Allow me to call the attention of your readers to the decision in the above competition, as I think it will be of service to judges, and a warning to all persons engaged in competitions, inasmuch as it shows that if drawings submitted exceed the amount of the stipulated sum, even if all workings, drawings, and quantities are furnished, architects are not to consider themselves the accepted, even if tenders are sent in for the works, and everything is ready to commence them. The guardians of the Medway Union have, upon receipt of the tenders, declined to accept the drawings for the workhouse; and why?—because Messrs. Peck and Stephens engaged that the works should be completed for 11,000*l.*: the lowest tender exceeds double that amount. They are very properly punished, although it is an injustice to others who forwarded drawings, as theirs might have been executed for the amount, and it is also a great delay of time.—R. A. U.

**FROM OXFORD-STREET TO PALL-MALL.**—Has the rumour reached you of a company in private formation to construct a street from Coventry-street or Leicester-square through Whitcomb-street to Pall-mall, more befitting so important a thoroughfare? I ask the question, because, if such be the case, the public will look to you, as censor and conservator, to protect it from an ill-constructed line of road or buildings *baseborn* not becoming the locality, verging as it does on mansions and palaces. There appears to be no other selection to make, if such a street is at all in projection, the mews and barracks offering an insuperable barrier elsewhere; and the way will by this means be direct from Oxford-street to its almost imperial parallel, through Wardour-street, Princess-street, &c. till you come to the little disgraceful outrider Whitcomb-street, with its little trumphy tenements of small rag-shops, chimney-sweeps, and low ginger-beer stalls. Of course, such an enterprise, however private, must be by permission. I do not vouch for the correctness of the report, but I have heard it; and as such an improvement is desirable, and the property of comparatively small value that forms the present obstruction, I think it not unlikely. At present the tide percolates through ill courts and alleys and miserable streets to the east side towards St. Martin's-lane round the side of the barracks, &c.: scarcely a respectable inhabitant reaches the Pall-mall end of Whitcomb-street, but carriages and other vehicles are in perpetual lock and confusion there. Trusting you will excuse an old subscriber, I remain—G.

**THE CLOCK TOWER OF THE NEW PALACE AT WESTMINSTER.**—It appears from a return to the House of Commons, moved for by Mr. Ridley, M.P. that the amount in weight of gold leaf used in decorating the outside of the Clock Tower of the new Houses of Parliament, up to the 30th of June last, is about 95½ ounces; that the cost of the same is 1,119*l.* of which 890*l.* applies to the gold leaf used, and 229*l.* to the wages of the artificers employed; and that the amount of Sir C. Barry's estimate of the entire further sum which will be required for the completion of the work is 414*l.* Fine or pure gold of treble the thickness of ordinary gold leaf has been used by Sir C. Barry, and difficulties having arisen owing to the galvanic action between the gold and the metals in contact with it, a portion of the work has been necessarily regilt, and thus the expense increased. A composite, however, has been applied, which, in addition to having advantages as to durability and colour, constitutes a perfect insulation between the gold and the metal which it covers, and Sir C. Barry has every confidence that "the gilding, as now executed, will remain unimpaired and unaffected in appearance for a very considerable number of years to come."

**ADMISSION TO THE ARCHITECTURAL MUSEUM, BROMPTON.**—In reply to some inquirers, members subscribing one guinea and upwards per annum, students subscribing 10*s.* per annum, and art-workmen 5*s.* per annum, are admitted to the Architectural Museum, and by permission of the Committee of Council on Education, to all the other collections in the South Kensington Museum, on every day of the week, excepting Sunday, from ten o'clock a.m. till four o'clock p.m. and on the evenings of Mondays and Thursdays from seven till ten p.m. They are further entitled to a copy of the catalogue of the Architectural Museum, with free admission to all the lectures and conversations, and can study at all times in the museum. Subscribers of one guinea and upwards have the privilege of introducing, daily, by order, one visitor, or workman employed by them, for purposes of study, &c. free.

**LIVERPOOL LABOURERS' "DWELLINGS" COMPANY.**—A meeting of this company was held on the 30th ult. in the Common-hall, Hackin's-hey, at which it was stated the block of buildings which the company had determined on erecting had been completed at a cost of 6,300*l.* Nearly the whole of the houses were occupied, and it seemed a matter of certainty that they would pay a dividend of 5 per cent. per annum.

**THE BOTHY SYSTEM.**—In the case before the Justice of Peace Court, Montrose, Smith v. Mason, the following report was put into process:—"Montrose, June 3, 1857.—We this day inspected the bothy and sleeping apartments at Haughs of Kinsaird, occupied by the men employed on the farm. The bothy is a circular house apart from the other farm buildings, surrounded by a large quantity of hay. Immediately outside the door to the right is a puddle of stagnant water, and a good many slates on the back part of the roof are broken. The interior is 13 feet in diameter, with walls 6 feet in height, without plaster on the walls, or ceiling to the roof. The floor is of mud and damp. Inside the door, and below its level, is a pool of dirty water, part of which is concealed by three or four grey slates placed on it. Opposite the door is a large fire-place. It contains no article of furniture except a form 3 or 4 feet in length, and lying on its side in consequence of having only one leg, and two small barrels for holding meal. When the door is shut no light is admitted, except through a hole in a broken slate, and another in the bottom of a door sufficient to admit a cat. The sleeping apartment is situated immediately above the stable. The entrance to it is by a door 5 feet in height, and is 5 feet 9 inches above the ground outside. It is reached by a ladder fixed perpendicularly against the wall, consisting of five steps, the lower one being wanting. A rope hangs from the top of the gangway, to be grasped when at the top of the ladder to assist in the ascent. Except the door there is no opening of any kind. The dimensions of the apartment are 16 feet in length and 6 feet 6 inches in breadth, exclusive of the space occupied by the bedsteads. The height is 5 feet 9 inches. It contains five bedsteads, three of which are filled with clean bedding, and in use, and said to be occupied by six men. In the room a pane of glass is fixed about a foot square. From the dampness, want of light, and absence of any kind of comfort in the bothy, and from the situation, scanty space for the number of inmates, and thoroughly defective ventilation of the sleeping apartments, we are of opinion that a residence in these places must tend to deteriorate the health of the occupants.—Signed, John A. Ross, surgeon; David Johnston, M.D.—*Low Chronicle*, Dundee.—The above is a specimen of the brutal condition of farm servants in Scotland, in their sleeping and eating apartments.



# The Builder.

VOL. XV.—No. 758.



PROMPTED by considerations adverted to in recent notices of the competition for the Wellington Monument,\* we have been induced to pay much attention to the exhibition at Westminster Hall, and have tried to elucidate the principles to be observed in sculpture of the high class which is in question. We also have particularised under their mottoes, many of the models. Since our last number was published, the report of the judges has appeared, and will be found, with the names of the authors of the rewarded designs, at the end of this article. The names of the judges had been privately mentioned some time previous to the date of the report. It will be observed that amongst the gentlemen at first selected as judges, was Mr. Cockerell, whose reasons for declining to take part in the final decision might, perhaps, be such as would deserve more notice than they have received in the not very perspicuous English of the report. We believe they arose in the feeling of doubt, which he—the only one of the tribunal who can be considered qualified by the required extended study of art, the architect long attached to the structure of St. Paul's Cathedral, and who suggested the particular site for the monument, the discoverer of ancient marbles, and the author of published and other investigations into the design and character of sculpture, both mediæval and antique,—which even he, Professor Cockerell, felt of his own individual qualifications for the judicial office. Such office, probably, he would not have shrunk from, had the tribunal been constituted, or mainly so, of artists—representatives of the different branches of architecture, sculpture, and painting. Such a constitution, however, does not always obtain the sanction of those who dispense the patronage of art in England. We can only say, that taking these as Mr. Cockerell's reasons, they quite correspond with the views we have continually put forward in speaking of competitions. It does not follow that the valuable combination of judicial aptitude with artistic knowledge and skill is to be found necessarily amongst artists; but we cannot admit—as we seem to be asked to do, when there is a selection of judges merely to represent particular functions or departments of the legislature—or even when these are distinguished collectors or amateurs—that we necessarily get a tribunal to which deference can be paid. The practice of such appointments tends to keep up the fallacy that any one is able to judge of a work of art. Such a one may say he *knows what pleases him*,—the common remark; but he does not know what will permanently hold or deserve his admiration. Our remarks are general in their application, rather than applicable to the particular selection which has been made in the case of the Wellington monument. On that head we withhold any observations for or against particular models, but will rather lay before our readers the continuation of our views on monumental sculpture,—not denying, however, that we should be at issue in several points with the judges, as may be seen from a comparison of the selections with the matter of our notices.

Perhaps we should have hesitated to enter so deeply into the merits of works in a sister art, had we not felt that the deficiencies in the art as practised, were such as it lay within the scope of architectural criticism, or of our own habits of thought, to suggest the way to remove; whilst the period and the occasion appeared singular, as well as favourable to the efficiency of our interference. We trust that in drawing attention to the architectonic element as important in monumental sculpture—yet to the required predominance of the sculptural in works intended merely as memorials, though beautiful and didactic in their expression—and to the need of a poetic and imaginative element, combined with perspicuity of the language, we have been so fortunate as to enumerate the real causes of the contrast between, on the one hand, the executive skill of our sculptors and their indisputable success in the majority of the works in which they happen to be engaged, and, on the other, their too general ill-success in works of the class now more prominently under notice.

We ought to observe, if it have not already appeared plain, that a defence of allegory as an agent in imaginative art, does not imply the defence of its treatment, as commonly met with. Moreover, as to what we have called *representative sculpture*,—and as to its falling short of the highest art,—we would say merely that the representation of a single episode, or event, is that which we considered could not fulfil the conditions—in the case of most individuals worthy to be commemorated, or of those pertaining to the varied life and character of the Duke of Wellington. But, separate representations of figures drawn from different conditions of time and place, perhaps could be idealised into one group; and the monument might claim to belong to art of a higher class than that of the representation of incident or fact, or that of the simple statuesque or portrait branch. It is possible that this sort of sculpture would include the poetic and imaginative element sought for through the allegorical: but, judging from what has been put forth at Westminster Hall, or from the monuments in St. Paul's Cathedral, there is both difficulty in forming a connected group without vulgarity, and in conveying the intended idea without the assistance of allegory. The mixed combination—representative sculpture with the allegorical in the same group—has been attempted in numerous instances, with a view to the proper recognition of facts, and the illustration of a large theme under restrictions inevitable in sculpture. In one of the monuments in St. Paul's—that of Major-General Hay—the dying man, *in his habit as he lived*, is supported by the allegorical figure of Valour. But the mixture of the vehicles—the representative and the allegorical—even where the latter is understood by the multitude better than it is here, cannot, we believe, be satisfactory. It is erroneous in principle, and has, more than any other cause, brought all allegory into contempt. It was a concession to the popular demand—a half-measure between the sculptor's prejudice for a certain conventional allegory, and the people's want of something which they could understand—and, like many other compromises, was worse than either of the courses for which it was substituted.

By the sculptor, the incongruity, as well as the unsuitableness of modern costume was, on the other hand, attempted to be warded off, by idealising the whole group—so far as to represent the figure of the hero—a necessary feature—not in the dress which he wore, but naked, or draped, or in Roman costume. Thus, the whole became a consistent, whilst poetic and imaginative, work of art; but thus, also, the art failed in one of the objects of the monument,—one which, we may observe, is distinctly recog-

nised in each of the works at Westminster Hall, that we had ventured to single out and make prominent in our notices. In these works, a figure of the Duke, and in true costume, has been treated as an essential feature. But, the fact of the intractableness of the costume is deducible from many recent statues. Dalton, at Manchester, must be represented in a dress which he wore—perhaps on three occasions in his life; and Sir Robert Peel, by our first sculptors, must be a naked figure with garments pasted on,—not disposed like the Greek draperies—which, if they sat close in some places, to exhibit the beauty of the human form, in others hung in folds which, by contrast and concealment, added to the expression of the art.

It were much to be desired that the dilemma in which sculptors feel themselves, could itself produce some change in costume. The artist has little control over dress, though that may be such as both he and his patrons would least desire for perpetuation in stone; whilst the sculptor seems to be surrounded by difficulties which never occur to the painter. What lady would wish to be modelled in *crinoline*, or what gentleman in the hat? These difficulties seem never to weigh upon the portrait-painter, else why the enduring beauty of the works of Reynolds? But, taking things as they are, the objections are less to the use unconcealedly, of the modern costume—at least to so much of it as is not the fashion of a single year—than to the adoption of a dress which does not allow of true representation. For, it is obvious that the monument should include a portrait of the deceased. It is this very necessity, indeed,—the combination to a certain extent of represented fact, with art-vehicle of another kind,—which makes the peculiar difficulty in our present case. In the same monument you have to show the appearance of the man, and also to tell what were the features of his character, and circumstances of his life. To effect these objects, considerable space will be required for detail in representation, or some use of types and emblems. To interdict allegory, therefore, is to limit the resources of the art—to entail a partial exhibition of the attributes of the man.

Allegory, to the extent contended for, has been used in some of the best monuments. We may name the monument to Lord Mansfield in Westminster Abbey, not because it reaches all that we now require, but because the mention of it shows how much of really superior art is condemned by sweeping denunciations. This tendency referred to may be no proof of merit; but we see nothing inconsistent with either perspicuity or Christian art, in Flaxman's representation of Justice—more than in the beautiful forms of allegorical representation used by the author of No. 13 in the exhibition, where Justice, instead of the scales, holds a weight in each hand, and Truth is placed beside a sundial. Nor could there be any objection to the typical signification of locality in the monument to Sir Ralph Abercromby in St. Paul's, mainly a work of the representative class, where Egypt is indicated by sphinxes. On the other hand, reverting particularly to this latter class; in the beautiful work of sculpture, the monument to Mrs. Warren and her child, in Westminster Abbey—by the same artist as that just mentioned,—the elder Westmacott,—the seated figure of a poor woman with an infant, is exquisite in its pathos, and admirable in its manifestation of technical skill: but—taking it as a perfect work of *its class*—we may ask,—Does it realise what is intended in monumental sculpture,—to wit, the perspicuous commemoration of a particular individual—along with the lesson to the living?

Flaxman, indeed, who spoke somewhere of the degradation of the art, by cutting in stone "paragraphs of military gazettes," was the author of monuments which are liable to

\* See pp. 415, 425, and 445 ante; also p. 213, on "Monuments and Statues."



the same generalization. But all the resources for portraiture, and commemorative, didactic, and "phonetic" expression, will be needed in a monument to the Duke of Wellington; and the aim must be to unite them in position and in grouping of the monument, without the interference of different modes of expression with one another. Architecture offers the means of this, and the structural framework for each separate representation or composition: but, *motives* which should be kept distinct should not be attempted as parts of the same particular combination: that is to say, otherwise connected than somewhat as the books of a library, or the objects of a museum, or the decorative paintings of a room, are united in selection and disposition, and in general grouping and design, to aid a connected train of images and thought. It is worthy of notice that a *minor* feature in one of Westmacott's works in St. Paul's Cathedral the monument to Lord Collingwood—displays the principle of composition which up to the present time had seldom been exhibited for a whole design. In a scroll on the prow or side of the ship, in separate, but connected, *relievos*, is represented, under the guise of allegory, a complete picture of the progress of navigation. Here there is so far perspicuity, that the series requires only to be looked at to be understood as well as the most natural work in representative sculpture. The monument, generally, is of the latter class, modified or idealised to suit the limitations of the space. Observe, also, the value of the scroll, or architectural framework—subordinate though it properly is,—its value as well to the general effect as to the sculptural element, besides the telling of the story.

We may be told—as those are who would inculcate the "principle of selection" which belongs to art, and to the use which it makes of Nature—that we should narrow the field by the general course which we have contended for, and that monumental sculpture would no longer claim the highest rank as a branch of the art. We would rather there should be even that result, and success proportionate to the effort, than that from the face of the work there should be read only those greatest of deficiencies, as to art sculptural or architectural, the confession of a failure, or of the inability to reach the perceptions of the public. But, we should dispute the conclusion that we should lessen the scope and end of art, by guiding its efforts. The different branches of art have been repeatedly trying to achieve what was beyond their powers, or that which could not be expressed by one art separately; and more would have been in many cases done, by attempting less. The best sculpture, mediæval or antique, is that which is strikingly characterized by simplicity—where the conception was such as could be expressed by one, two, or three figures, or otherwise where the separate parts of the series were, as we may say, imbedded in a building, and so the links of the story or moral could be taken up and read. We do not, indeed, now want a building—a Parthenon, a Wells Cathedral, or any miniature of a structure,—we require a monument mainly sculptural: but use must be made of architecture nevertheless, and considerable use, if a complex and a difficult theme is to be uttered; and if it is to reach the perceptive sense, and "point a moral," and fulfil the ends for which alone 20,000*l.*—or whatever smaller sum—could be justifiably expended.

Although we have mentioned all the designs which happen to have been selected, and some of the number more than once, we may further state that No. 80, by Mr. W. Calder Marshall, R.A. which has received the first premium, consists of a statue of Wellington on a pedestal of red granite, at the angles of which are placed allegorical figures, as of Valour, Peace, Duty, &c.; whilst at one end are groups—in one case, a mother with a child in her arms bending over the dead body of her husband; and in the other case, a group intended to represent Commerce and Agriculture rejoicing at the restoration of Peace. These several figures, with the statue and pedestal, stand on a lower pedestal of grey marble, occupying the oblong space intended for the site. The figures are shown as bronze; but the author says

marble might be adopted, with slight change in the drapery. We have already spoken of the merit of the modelling, and of the beauty of the design in many respects; and have offered some other remarks.

In the design by Mr. W. F. Woodington, marked "Avon" (No. 56), there is barely an allusion to the military incidents of the Duke's life. Some of the models, from their height, were, we believe, deemed unsuitable to the cathedral, and were on that account rejected; but we observe that one of the number which occupies the greatest height in the Hall, is in the selected list.

We have described or referred to nearly all the other works which would seem to deserve notice, but may mention No. 67—"Arma Virumque Cano,"—which has a figure of Wellington seated, on a pedestal that takes the form of a tomb, with a door on each side. Over the door is a sarcophagus. At the angles of the pedestal are figures of War, Fortitude, Temperance, and Peace. Also, No. 71—"Pro Patria,"—which is a simple figure of the Duke, with the usual accessories of figures, allegorical and statuesque, on a general quadrilateral plan in several stages. A portion of the actual pedestal, however, takes the form of a circular building with a Doric order—the intercolumnium filled up. No. 72—"Justice"—is noticeable as having some attention given to the monumental requirements in grouping—in which the pedestal of coloured materials takes part,—but the sculpture is defective. No. 75—"Hope"—has a statue of Wellington, and allegorical figures of Britannia, Mars seated in front, History reciting the deeds of Wellington to a youth, and a figure representing Ireland. The figures of soldiers are at the angles of the pedestal. In No. 76—"12"—which we have already referred to, there is merit in the ornaments and *relievos*; though the excessively architectural character, the representation of a tomb, the grouping of the tiers of pedestals, and the Pagan idea of the recumbent figure on a sarcophagus at the summit of the monument, may all be objected to. No. 78—"Deeds, not words"—has a recumbent figure under a low arch, suggestive of architectural detail. The arch supports a kneeling figure of Victory, laying a laurel wreath. The author of No. 79 has tried to solve one difficulty in the portraiture of Wellington, by showing him twice, at different periods of his career.

In No. 82—"Virtutis fortuna comes"—a statue of Wellington is designed to be placed on a tall pedestal of elaborate character; but which forms a marked background to the figures, without contributing to the monumental effect. In No. 83—"Studii et rebus honestis"—before mentioned, as having the form of a sarcophagus as a leading feature of the structural part—the sculptor seems to have had Michelangelo's Medici monuments in his mind. The recumbent figures here, are on one side a soldier of Assaye, and on the other a Highlander of Waterloo; the principal group is a figure of Wellington crowned by Victory, and attended by Peace; and below are Britannia seated, and figures of Military and Civil Science. The architectural and sculptural elements are here well combined, and the general grouping is good. The pedestal, sarcophagus, and similar portions are of red granite; and gilt inscriptions are introduced.

The model just mentioned is the last in the collection; and we have now brought our notices to a conclusion. Should it be inferred from the frequent mention of allegorical figures that the character of all the works in the exhibition is not creditable to British art, or that the dramatic effects on which we have made observations, are generally sought in the models, we would observe that such is not the case. We have spoken freely of what we believe is wanting in many otherwise excellent productions, to constitute them true works of monumental sculpture; but we think, notwithstanding much that has been said of the collection tending to a different construction, that, as contrasted with sculpture of the date of the monuments in St. Paul's Cathedral and Westminster Abbey,—so often referred to as exhibiting the worst treatment of allegory—the models show a considerable advance.

## THE WELLINGTON MONUMENT.

AWARD OF THE JUDGES.

THE following is the report of the judges appointed to examine the models, submitted in competition, for a monument to the late Duke of Wellington:—

"To the Right Hon. Sir B. Hall, Bart. M.P. First Commissioner of the Admiralty's Works and Public Buildings. Sir,—In the execution of the duty devolved upon us, we beg to recommend that the prizes should be allotted to the models corresponding with the following numbers:—

PRIZE.	NO.	MOTTO.
First	80	Most greatly lived this Star of England! Fortune made his Sword.
Second	56	Avon.
Third	38	'Passed away.'
Fourth	10	Arno.
	12	'This not my profit that leads mine honour. Mine honour it.'
	18	I know of but one art.
	20	Finis coronat opus.
Equal	21	A design in clay resembles life. A statue copy resembles death.
	21	The execution in marble, however, is the resurrection of the work of art.
	63	Let us guard our honour in art as in arms.

We have thus endeavoured to adjudge the prizes we have been instructed to distribute (in the scale of which we have not thought ourselves at liberty to make any change), in the order which appeared to us to be that of the relative degree of merit in the models, such models falling within the prescribed conditions as to the space to be occupied and the cost to be incurred.

In so doing we have not considered ourselves bound to take into exclusive consideration the peculiar fitness and adaptation to that spot in St. Paul's Cathedral which appears to be in contemplation for the erection of the proposed monument, which consideration might possibly have led to some difference in the selection.

We cannot at the same time forbear suggesting that, before any design is finally adopted by the Government, it would be desirable, considering the peculiarity of the situation contemplated, and that it essentially differs from that of all the models now existing in the cathedral, the opinion of some experienced artists should be called for, who would be better judges of the local effect than we consider ourselves to be; more especially as Mr. Cornwall, the only one of the appointed judges professionally connected with the arts, though we have derived from him valuable assistance and information in the progress of the examination, has declined on that account taking a part in the ultimate decision.

We may be permitted to add that it is with much regret that we have found ourselves precluded from admitting into the competition some of the models, from the circumstance of their having exceeded the limits as to space, distinctly laid down in the prescribed conditions.

LANDOWNS, EDWD. CUST,  
H. H. MILMAN, W. E. GLADSTONE,  
OVERSEERS.

6, Palace-yard, Aug. 7, 1857."

The following are the names and addresses of the successful competitors, with the premiums awarded:—

### FIRST PREMIUM, 700*l.*

80. Mr. W. Calder Marshall, R.A. 47, Ebury-street, Eaton-square.

### SECOND PREMIUM, 500*l.*

56. Mr. W. F. Woodington, 22, Richard's-terrace, Lorrimer-road, Walworth.

### THIRD PREMIUM, 300*l.*

38. Mr. Edgar G. Papworth, 90, Milton-street Dorset-square.

### FOURTH PREMIUM, 200*l.*

10. Cav. Giovanni Dupré, Florence.

### FIVE PREMIUMS OF 100*l.* EACH.

12. MM. Mariano Polcini and Ulisse Cambi, Florence.

18. Mr. Alfred Stevens, 17, Canning-place, Kensington.

20. Mr. Mathew Noble, 13, Bruton-street, Berkeley-square.

21. Herr Ernestus Julius Hanne, Dresden.

63. Mr. Thomas Thorneycroft, 39, Stanhope-street.

## THE NEW WESTMINSTER-BRIDGE.

THE question as to the site of Westminster-bridge has been at length decided in the manner for which we have contended, and this week the works have been recommenced. The committee of the House of Commons had previously met, and, after hearing the evidence of Mr. Stephenson, M.P. and of Mr. Pege, the Government engineer, agreed to report as follows:—

"Having been informed by the First Commissioner of Works that, after considering the report of the judges appointed to report on the designs for the new palace on the block plan, and taking into account the great expense that would be incurred if the site of Westminster-bridge was changed, it is not his intention to recommend that the site of the bridge be altered,—the committee proceeded to consider the present site of the existing bridge, and the alterations proposed to be made in the new bridge to meet the objections which have been taken to the mode of construction as originally proposed. The committee learn that the precautions taken for securing the old bridge have been complete; they recommend that the new bridge be proceeded with in conformity with the mode of construction as set forth in Mr. Pege's letter addressed to the Chief Commissioner, July 23, 1857. The committee have also carefully considered the important question of the roadway of the bridge, and in connection therewith the subject of the

\* What was the use then of the lithographic plans, sections, and view of the proposed site, very properly furnished by Sir Benjamin Hall to competitors?—Ed.



gradient of the roadway as now proposed, and the gradient which would be consequent upon raising the bridge. The committee find that, according to the plan now proposed, the roadway on the Surrey side, would be 1 in 45, and if the bridge was raised from 20 to 22 feet, the gradient would be 1 in 27; that on the Middlesex side the gradient, as at present designed, would be 1 in 37, and if raised, 1 in 45. The committee are, therefore, of opinion that it would not be expedient to increase the height of the bridge.

We might now take some credit for having held to our views on this matter, in opposition nearly to all others. But in truth we could never comprehend how there could be any doubt on the subject of the site. The questions of headway, gradients, and effect in conjunction with the Houses of Parliament, had been all carefully considered before Mr. Page's design was adopted; and the report above presents no new feature as to these particulars. Mr. Page's letter, which is alluded to, probably refers to the slight structural amendments recommended last year, and which could hardly be deemed important enough to affect the principle of the construction. The heads of the piles, we suppose, will be all cut down a few inches—so that there will be no risk of their remaining, during some minutes, above the estimated level of low water at certain tides; and some other improvements in details may be effected. It is considered by the eminent authorities who were consulted, that the bridge will be the better for the slight modifications: the engineer, we presume, willingly accords, and we will not question the propriety of the additional outlay. We do, however—while gladly giving credit for the motives to the stoppage of the works, and for the determination which is now made—repeat that no advantage could be derived from a course such as that which has been followed in the case of Westminster-bridge. If, on the one hand, failure in our public works results from precipitancy, or ill-mangement of those preliminaries which cannot be dispensed with, on the other, there can be no progress, if changes, probably not much considered, are to be introduced suddenly into a design that had once been matured.

We are not alluding to the case of Westminster-bridge, so much as to the practice,—for which the British House of Commons, perhaps, might be taken to account, as much as the Government. But here was a case in which there had been no precipitancy; where every interest and opinion had been heard, and a judgment had been formed with the greatest care; in which works had been actually commenced, and a large amount of money had been spent; and in which, positive outlay in the removal of what had been done, and incalculable sums in compensation, would have resulted from change. We believe also that the statements made from time to time on due authority, as to the condition of the old bridge, by no means warranted the inferences drawn that there was no actual danger from delay, and which inferences were inconsistent with the assertions of several competent authorities whose evidence is on record. Also, we may observe that a constant weekly expenditure, which would strike our readers as deserving of consideration, has been going on, merely in the maintenance of the works and plant.

We will add nothing as to the advantages of the existing line of route, either with or without the other bridges which are required, having already said enough on previous occasions, as in the course of our remarks on the several designs for the Government Offices—which all, whether suggesting a new site or retaining the old, so clearly pointed to the decision that has been made. It is only worthy of remark, that each one of the three designs for the general arrangement of the Offices and street communications, to which premiums have been awarded, shows the bridge on a site different from that which has now been affirmed and adopted. The decision here only corroborates the view which we took as to the small value of those plans.

Therefore, repeating the expression of our thanks for the decision which we have recorded, we trust that neither tergiversation in the executive part of public works, nor precipitancy in the preliminary selection and decision, will be allowed in future to militate against the desired progress, so much as they have sometimes done.

#### THE EDUCATIONAL DEPARTMENT OF THE BROMPTON MUSEUM.

This very important department is placed between the galleries of mechanical models already described and that portion of the fine arts department which contains specimens of carved furniture, ornamental brass and iron work, porcelain, and copies of the frescoes of the Raphael school. It consists of a central passage, in which are arranged numerous objects, with a series of compartments on each side labelled, and in which are arranged the matters corresponding with the labels.

First, we have the space for "School Buildings and

Fittings," others for "Books," for "General Education," "Music," "Household Economy," "Drawing and the Fine Arts," "Natural History," "Geography and Astronomy," "Chemistry," "Physics," and "Machinery."

Before entering into an examination of these various compartments, it is interesting to glance round at the aids to education and general knowledge which are here gathered together, and contrast them with those in use less than half a century ago; and it might be worth while (particularly as the space required would not be large) to collect the helps which the schoolmasters and schoolmistresses who had to labour amongst the large and industrious class of the English people at the end of the last century possessed. Amongst those we should find the "Horn-book," for very small boys and girls; the "Reading made Easy," the Spelling-Book, disguised by a few horrible engravings; a clearly printed edition of the Old and New Testament; and an "Arithmetic," complicated and difficult. We must not forget the "Copy-books," which the scholars or the teachers used to rule with the help of round rulers; at that time no machines had been invented for that purpose. The plan of teaching children into knowledge had not been thought of, and explanatory pictures, and others which would teach, as well as amuse, were discountenanced by most of the instructors of youth, in consequence of being, as they supposed, "a means of drawing off the attention." As a natural consequence of such a state of things, the lives of the little things during school-hours was one of such dry sag, that it was a matter of necessity to provide other persuaders than those by which we are here surrounded: amongst these were the birch, the instrument of earliest application,—the fool's-cap, and long red inscribed tongue of horrible appearance,—the black-hole, the cane, and in addition to those, a heavy clog for truants, with a chain to fasten it round the leg. Many not yet past the prime of life, will remember receiving punishment in old schools which, if practiced at the present day, would cause the teacher to meet with the fate of a criminal, and make him to be generally thought of with indignation. A group of those persuaders placed here would cause many a pleasant thought, by a comparison between them and the instruments by which they would be surrounded.

The department of school buildings and fittings contains large models of some of the most approved designs for schools of different descriptions, from which may be gathered many hints as to the most economical arrangement, lighting, heating, and ventilation. There are also various seats, tables, desks, and other matters, which may be most usefully examined by all who are engaged in fitting up schools. There are, besides, various drawings and estimates of expenses.

In the department of general education there is exhibited a very large variety of alphabets (English and foreign), of various sizes and plans, which now take the place of the "Horn-book" of old. Many of these are most ingenious in their construction and arrangement. Here are also on the shelves numerous editions of primers, spelling-books, grammars, arithmetics, histories of England, &c. &c. &c. and many will be surprised at the extent and variety of this educational library: of "arithmetics" alone there are about 150 different descriptions. The means for teaching writing, from the simplest rudiments to the most finished lessons, are also exhibited. In this department are collected all the printed methods of diffusing general education, as in those of chemistry, mechanics, &c. are the books which teach each science; so that in fact, besides the models, we have here a large and valuable library of works on education, which may be freely consulted by any visitor during the Wednesdays, Thursdays, and Fridays, which are set apart for study; and it may be worth while also to mention that books on those subjects will be received here and descriptions printed in fresh editions of the catalogue, recently published. The books may go either as gifts to the museum, or they may be left in charge for twelve months.

The space provided for music contains simple and advanced lessons, and the various methods of teaching this delightful art in schools and otherwise; and next to this is the department of household economy. In this space are arranged drawings of model buildings, and other suggestions for improving both the interior and exterior arrangement of our dwellings; there are various models of fire-places, &c. intended for the purpose of economising fuel. By means of one of the cooking ranges, it is said that, with a singularly small quantity of coals, a dinner for 100 persons could be got ready. Those matters are well worthy of notice. Amongst other objects is one which we must more particularly describe, because it is so simple, and would be useful in conveying warm food, such as stews, soup, coffee, &c. to workmen at a distance from houses and fire-places. This invention is from Belgium, and consists

of a square box of such a size as to admit of the light surrounding at sides, bottom, and top, with dry hay or straw, of any ordinary tin cooking vessel with a tight-fitting lid. When the pan is boiling, and the food ready, it should be lifted from the fire, the sparks carefully removed, and then placed in the casing of hay; and so completely does this prevent the escape of heat, that we are told the process of cooking will go on for some time after the pan has been thus packed. On even a small scale, this plan might be used for the conveyance of the food of workmen when at a distance from their homes. No doubt this portion of the museum will rapidly extend, for no department of education is of greater importance to the middle and industrial classes than that of Household Economy.

Drawing and the fine arts occupy a very large space, and as in the department of general education we find the first letters of the alphabet and the first strokes of writing, in that of drawing we have lessons which enable the student to proceed from the first lines to those more complicated, which by patient perseverance will enable him to master the difficult yet beautiful tasks of the human body, and the intricate outlines of foliage, landscape, and architecture. We see here specimens of drawing materials by several makers; geometrical models, diagrams, &c.; an extensive collection of busts from fine examples of Greek and other art, and from nature; and those are to be purchased from a department of this museum at a moderate retail price. For instance, we noticed full-sized casts of horses' legs, marked 4s. 6d.; architectural details, small casts of animals, at from 3s. to 5s.; and these prices will be very considerably reduced when the casts are bought in numbers, or when needed for the use of such schools as require assistance. It would want a great deal more space than we are able to devote, to mention the various drawing lessons, plain and coloured, which are here arranged for selection. Nor is the natural history department less worthy of notice; and here the most striking feature is the arrangement of a series of animals printed in colours on large sheets of stout calico, which is published by the Working Men's Educational Union, and can be purchased at about 1s. 6d. each sheet. These prints are bold and effective, and well adapted to the purpose for which they are intended. Our experience, however, shows that a set of these, cheaper in price, is required for the ragged and poorer schools both in the large towns and country districts. Mr. Waterhouse Hawkins's large and clever lithographs of the restoration of extinct animals will here attract attention, and we must notice that one of the great uses of this Museum is, that here can be displayed many large works required for educational purposes which could not be exhibited in the shops of the booksellers; and many a schoolmaster of both London and the provinces might, in search of materials, travel the town round, and even then miss many matters of consequence which he would here see without trouble. In the days of the Horn-book and birch men or women could gain but little knowledge of the structure of their bodies, and great loss of life has been the consequence of that ignorance. Now, however, we have large sketches for the use of schools of the anatomical formation of the chest, and other parts, which may be familiarly explained. Many will thus acquire such a knowledge of "the house they live in," that they will be enabled to escape many evils.

In the geographical department the collection of school-books on this subject is extensive. There is also an immense collection of maps, the production of England, America, Germany, &c. the larger of which are arranged on rollers, and can be conveniently consulted. Considering the importance of a good geographical knowledge to the rising generation, we made an examination of many of the maps here arranged, and found, that although those produced in this country for the use of schools are neatly executed, they want that boldness of both outline and colouring which is so necessary in the lecture and school room. A large coloured map which forms part of the series of American works on education which has been presented by the New York Educational Board to this Government, is well worthy of attention: certain parts are coarser than necessary, but the colouring is most effective.

The astronomical instruments, drawings, &c. present a goodly array; amongst them is a large model of a monster telescope, which is, however, mistaken by some visitors (not ill-dressed) for a cannon, and is taken for cannon-balls. These mistakes show the necessity of such institutions as this, and also the need of activity on the part of the schoolmaster. Many of the diagrams of celestial phenomena are well done, and of moderate price.

In connection with chemistry, we have sets of apparatus and materials exhibited which can be pro-



cured at a cost of from less than 2% to 20%, or 30% and upwards. Here the books on the subject are also carefully collected, and in the various departments, in their proper places, are busts of Benjamin Franklin and others. In like manner, the spaces for physics and machinery are illustrated by useful examples. In these the calico prints of the society above referred to are conspicuous.

The catalogue of this part of the museum will be found a useful guide, as well to those who come here as to directors and teachers of schools at a distance, for it contains a priced list of all the objects that are gathered together, classified: and it is very cheap.

Crowds continue to flock to Brompton, and it is pleasant to notice that on the public days a large number of those for whose especial use this collection is arranged are in attendance; in the fine arts department intelligent workmen may be seen examining and comparing the ancient wood carving and other works, with the French and English modern productions.

#### ON RESTORATION.—CANTERBURY CATHEDRAL.

THE restoration of ancient and dilapidated edifices is a subject of interesting importance, requiring serious, patient, and persevering research. To become proficient therein, a practised knowledge of the varieties into which all styles have been, or possibly can be, extended, must be familiarly obtained; and the student must also examine the restorations made from time to time, in order to judge of their accuracy or errors. When his imagination can fill up all the vacancies of a ruined temple, church, castle, or mansion; complete broken and defaced shafts, capitals, windows, buttresses, finials, and all other details faithfully; and obtain a visionary prospect of it, as it stood perfect from the tools of the free-mason, he may commence to lay down his measurements, and proceed with every chance of success. In Pointed architecture, on account of much difference in some details of the same class, the designer thinks he is at liberty to use any of these, when making good the old work, without any breach of order.

Where an edifice is a church or mansion, built within a certain period, by one architect, or from the same design, there exists scarcely any difficulty; but works done in different centuries, without any order of progress, the extension and repairs having been left to the caprice of some great improvers, anxious to display their skill, are quite different subjects altogether. Such ambition was in a great measure praiseworthy, causing a competition which did, as it always will, when practised honourably for the exaltation of architecture, result in a high degree of excellence. Still these clashings of set styles would be disagreeable to the eye, if practised in the present age, because they now seem so historically distinct; although, perhaps, the architects of those ages only considered them expansions and improvements of the same order. Nor would it be judicious to enter upon a restoration, with the latter conceptions, as the builders of those days, when introducing a newly acquired advancement amongst earlier and distinct phases, fancied, perhaps, that at some future time, when the older portions would require reconstruction, it should be done according to their modern taste.

The prejudice imbibed in favour of a particular section, when pursuing the study of Gothic, is admissible; but it should never influence a person engaged on a restoration. Nor is any danger to be apprehended if the entire subject be perfectly understood, unless the mind is clouded by an illiberal youthful education. Even then a truthful impulse may be given to the imagination, by certain calm considerations, and by silent reflection on the result of all immature notions, if carried out. It would not be wise of any person, however experienced may be his judgment, to pronounce dogmatically upon a serious reconstruction, as long as he can qualify his ideas, by attending to the united opinion of a professional council. He will not lose any fame as an architect, if he throw aside conceited selfishness, and ask the opinion of another equally skilled with himself. Let any reader look back to those eras when architecture flourished, under the auspices of great and zealous men, and he will find that each galaxy of illustrious artists maintained a cordial communion of brilliant sentiments.

To restore Salisbury Cathedral, or the church of Batalha, and to finish the construction of Cologne Cathedral, are simple practice (as before observed), in comparison with entering upon an edifice mixed with corruptions, and defaced by anomalous repairs, cement, and wilful demolition. With reference to a small church or mansion, it may be lawful to notice the latest predominant type, and if that be stable and capable little trouble, to make the portions that are to come down of similar design. But it would be necessary to examine carefully whether that style

were sufficiently free from debasement to warrant such a conversion of the older portions. Above all things, every erroneous feature introduced by negligence or ignorance must be removed, Gothic from Classic, and reversely, and this though modern work. Good old parts of a Mediæval building are also found successively in decay, according to age, leaving to the last style of that art every chance of being spared, and waving the judgment of continuing an older system, when its fragments are as shapeless as its utility is inappreciable.

That a mixed restoration is beset with many difficulties, cannot be better exemplified than in the various specimens of Canterbury Cathedral, the construction of which extended over all the transitions of Gothicism in England. Religious edifices were framed of wood, previous to the Conquest; for Stowe, in his "Survey of London," records the observation of King Edgar, in the Malmesbury charter, A.D. 974:—"All the monasteries in my realm, to the outward sight are nothing but worm-eaten and rotten timber and boards." The wooden structure having been burned down, Edmerus says, "Langfranc built the new church, and that probably (as I conceive) after this new French form; and, within the space of seven years, he almost entirely completed the work, from the foundation thereof." This is the church begun in 1080, the new form being the Norman, introduced by his "French architects and masons;" but Gosting seems to think, in reference to the foundation, that the great crypt is of the ninth century. In 1114 were commenced the towers of St. Andrew, on the north side, and St. Anslem, on the south; and, according to Edmerus, "the oratory or choir, as far as from the great tower to the east end, was, by the care of Archbishop Anslem, enlarged;" which, from the chronicle of a monk, Gervase, was destroyed by fire in 1174, four years after Beckett's murder.

In 1175 a reconstruction of the church was resolved on, and the design subjected to competition, in which it seems that William of Sens obtained superiority; but having fallen from the scaffold, and received injuries that compelled him to return home, the finishing of the "glorious" choir fell into the hands of William the Englishman, who also built the eastern transept, Trinity Chapel, and Beckett's Shrine, the last at the extreme east of the fabric. In 1304, Henry d'Estria built the organ-screen; and in 1379 were commenced a series of extensions, progressing slowly up to their conclusion in the reign of Henry VIII. The great transept and chapel of St. Michael (oblique on the plan), arose under Archbishop Sudbury; the nave, cloisters, Arundel (north) steeple, and chapter-house, under Archbishop Arundel; and the south, or Dunstan's steeple, was begun in 1410, but not completed till 1468. The northern tower appeared of the same age as the nave, and Bishop Godwin says that it was "covered with lead pyramides." The length of time occupied in building the south tower extending over half a century, it represented the anomaly of transition, bearing no resemblance to the other. In 1417, Henry IV. and Dean Nevil's chapel were built; and about 1470 the lady-chapel was erected, and the central (Bell Harry) tower was commenced; for, according to Somner, "the great tower in the centre, called Angel Steeple, remained such as Lanfranc left it, until Prior Saelling, who died in 1495, began to rebuild it; and his successor, Prior Thomas Goldstone the second, finished it before his death, which happened A.D. 1517."

Here are a series of designs, from Saxon to Perpendicular Gothic, connected together in one immense fabric, including every variety introduced during the lapse of five centuries. The view would have been a very indifferent one indeed, could it be seen as Salisbury; but as it stood externally, so many obstructions advantageously subdivided the whole, an ordinary spectator forgot its disorder in its vast dimensions. Still, in the western elevation, the dissimilarity of the two towers before referred to, the nondescript porch, and the unmeaning window in the pediment, square with rounded angles, could not escape notice. Semi-circular and pointed window heads were to be seen in the same compartment. Internally, the entrance of the fine organ-screen was filled in. The columns with screens between, at each side of the choir, were alternately circular and octagonal; apparently due to the talent of William of Sens, whose "new" form was so close to Corinthian, in its capitals and mouldings, as to be almost mistaken for a classic order. To complete the debasement, a Corinthian altar-screen was introduced in the reign of Charles II. and several barbarous repairs were made under Queen Anne, and the first two Georges.

The partial restoration resolved on through necessity, a few years since, gave Mr. Austin an opportunity of displaying both ingenuity and talent. A very great difficulty existed in pulling down Arundel steeple, on account of its connection with the nave; but this he cleverly overcame, and rebuilt a tower

similar to Dunstan's, which was a step in the right direction. Where he had to renew a tottering portion of the Norman, in the south-eastern transept, he did that in its pristine form; wherein he also acted perhaps judiciously, with a view to balancing the features of the general plan. His internal improvements, including the throne, which exhibit a blending of two styles, taking into consideration the irregular character of the entire pile, are unquestionably excellent, and, from his limited position, exempt from all callous criticism.

However, attention must be drawn to the fact that, during the transition of styles, every change was progressive; and the moment an old form was neglected or set aside, never again was a church or monastery built in that fashion. Both in the Classic and Gothic orders, there is no instance of retrogression either to be seen or on record; and thus it may be easy to conjecture what the ancient and Tudor architects would have done, had they to restore the dilapidations of an older date in a mixed building. And, as an episodic remark, if the spirit of retrogression influenced their movement, as it has done modern enterprise in art, they never would have accomplished the beautiful results left for men's admiration. Therefore it may be well to form a theory of this system, so successful in former times, and to avoid all retrogression in designing to restore. If the aim of the mythologists and mediævals were progress, and men consider that they made their styles perfect, the view of a modern architect should be to stand stationary on that perfection, or to render his alterations as approximate as possible thereto.

Perhaps, if may be maintained, where a building is extensive, and every compartment requires a change of position to view it, either within or on the outside, it is not expedient to reduce all to the same style, in a renewal of the older parts. Others may urge a similar reconstruction of every peculiarity, for the purpose of identifying its age, and for the edification of modern professional aspirants. The zeal of a few alone would induce them to prefer a restoration of old errors and anomalies to the most perfect harmony of a symmetrical style. With such opinions the candid artist has nothing to do, when studying to arrive at perfect order in his design. Though it is necessary to restore faithfully the gorgoyle and other grotesque carvings in an old building, it does not follow that new buildings should be disfigured by the illustrations of an age, the extinct customs of which need no longer be ridiculed. Neither is it fitting to revive the old "willow-pattern" figures, lozenge-work, or other *pseudo* decorations, in the glaring and offensive colours often resorted to still by the bearded professors of ecclesiastical frippery; since there are chaster modes of colouring, cultivated with the march of civilized art, exquisitely suitable to walls and ceilings, and in unison with the solemnity of a sanctuary. And, even in renewing windows, it would be folly to introduce into stained glass lights subjects which, from simple truthful origins, have been preferentially blazoned by the legendary writings and perorations of conventional enthusiasts.

Restoration must therefore be divided into two sections, the *unique* and the *identical*,—the former when an edifice is restored to one particular style, and every detail finished in accordance therewith; the latter when everything has been renewed, without any change or improvement, and all errors even re-instated, with the fidelity shown by the Chinese tailor, when working according to pattern. It would be unwise to argue in favour of either, as circumstances and necessity may decide the choice, even when the best intention exists, to carry out a scheme magnificently. But as to the effect of studying the principles of restoration, upon the minds of professional students, the benefits therefrom are too great to be detailed within the compass of a few words. Suffice it to say that as, during those centuries called the dark ages, the bread of Mediæval grandeur was cast upon the waters, so now, in reproducing these beautiful remains, with actual fidelity, the spirit of architectural improvement will reappear in its former grandeur.

FRANCIS SULLIVAN.

#### NOTES UPON IRON.

(From our Correspondent at Wolverhampton.)

COMPARATIVELY little iron has been manufactured in South Staffordshire, in consequence of the Wolverhampton races, which came off on Monday and Tuesday, affording the men an opportunity of recreation, and their employers a favourable period for making those repairs and improvements in the machinery of their works which are called for at tolerably frequent intervals when there is a good demand for manufactured iron. On the Wolverhampton side of the district, the works remained closed up to Thursday morning, and in the district hemming Birmingham and Dudley, the first two days were blanks at the malleable iron establishments. The extent to which



these recreations are attended, may be gathered from the fact that last week the North Staffordshire races were attended on one day by 27,000 to 28,000 persons, and on another by as many as 30,000 persons.

These interruptions to business are acceptable only when there is no great demand; and in the existing state of the order-books those of the past week will not be seriously felt.

Whilst from these statements it will be gathered that there has not been any alteration upon last week in the direction of improvement, it will at the same time be seen, from there having been a no greater delay than two days in most instances, that masters generally are not over-ready to take advantage of a favourable opportunity for closing their works for a week, showing that orders are forthcoming of a number sufficient to require the full operation of the works. This, in the place of a marked decrease in the demand from the United States, with a falling off in the export trade to India, which was rapidly growing, is a most encouraging circumstance, demonstrating the healthiness of the home trade in those great interests for which iron is in growing demand.

The past week's mail from America has brought exceedingly fair promises, but exceedingly scanty order-sheets.

On 'Change at Birmingham yesterday (Thursday), and at Wolverhampton on the day before, there was a marked readiness to sell pig iron, but no disposition on the part of the long-established firms to giving way in price, 47 2s. 6d. being asked for warm-air mine pigs. At the same time there are large quantities of another brand on offer, at 37 10s. We have little doubt, however, that at least 2s. 6d. would be split in the majority of instances in each of the brands which we have quoted, if there should be serious disposition to transact business. At the same time stocks of pigs in the yards both of makers and consumers are low, and the weekly product of pigs is not a large weight in excess of the demand. A good order from a leading malleable-iron establishment would drive up prices at once; whilst cautious withholding on the part of these keeps prices easy, and the pig-makers as a whole open to receive offers.

#### METROPOLITAN BOARD OF WORKS.

At the meeting of the Board on Friday, a delicate question, for the first time since its establishment, was discussed with closed doors, relative to a report from the committee of the whole Board, stating the result of their investigation of certain particulars in the return of fees made to the Board by one of the district surveyors of the metropolis. It was stated that the return of fees in question had been falsified, and charges made that were not in accordance with the regulated scale of fees. For the present the consideration of the subject is adjourned.

The conclusions arrived at by the Building and General Purposes Committee were reported, and a copy of the report was ordered to be sent to the Commissioners of Police and the District Surveyors' Association.

An application from Mr. C. Furber, surveyor, on behalf of the Postmaster General, for the establishment and erection of a district post-office, at No. 1, Moor-place, Kennington-road, was approved of, on the recommendation of the superintending architect.

#### PROPOSED PURCHASE OF PREMISES FOR ARCHITECTURAL SOCIETIES.

Our report last week of the proceedings at a meeting held to consider the proposed purchase of a house in Conduit-street, to be occupied by societies connected with architecture, has shown our readers that the Institute has entered warmly into the project, and are willing to become the tenants of part of the premises. The resolution came to by the Institute was this:—

"That this meeting, having received the resolution of the Preses Committee, communicated through the council, hereby authorises the council to prosecute such further negotiations as they may think fit with the proprietors of the premises, No. 3, Conduit-street, Regent-street, and if it shall appear to the council desirable, upon the further development of such negotiations, to enter into such an agreement as they may think fit, whereby the Royal Institute of British Architects may obtain for a term of years, on lease, the amount of accommodation shown upon the plans now exhibited, at a rent not exceeding 250l. per annum, with a premium not exceeding 500l. If, on the contrary, upon the further development of such negotiations, it shall appear to the council that the termination of any such negotiations will be for the best interests of the Institute, they are hereby authorised to bring them to a close, reporting thereon at the next Special General Meeting.

"That this meeting authorises the council, in the event of their entering into any such contract as above referred to, to expend a sum not exceeding 300l. for removal and fitting up the premises now brought under the notice of the meeting for the purposes of the Institute."

The Architectural Exhibition Committee will take another large portion of the premises; and indeed there seems little doubt of tenants enough at starting

to pay a fair per-centage on any fair expenditure for the house, if the matter be properly managed, as we have no doubt it will be. Under the Limited Liability Act, individual shareholders will run no risk beyond the amount they may subscribe for, and it is to be expected that all the shares will be taken by architects, who will thus become their own landlords. It is a good roomy sound house, well placed; and, under any circumstances, there seems to be so little risk of loss, that we may pretty confidently advise our readers to take shares, urging upon them that they may thus advance the professional status with every reasonable prospect of obtaining a fair return for their money.

#### PROVINCIAL NEWS.

**Reading.**—Various improvements are here under consideration, to which the sanction of the ratepayers is looked for. The scheme combines the erection of a new police-office, with court, magistrates' room, detention cells, &c. an entrance to the public markets in Friar-street, corresponding with that in Broad-street, and giving a more extensive area.

**Hereford.**—The improvements which have been carried on in this town during the last few years, says the local *Mercury*, must be regarded as indications of local prosperity. There has been no building mania. On the contrary, there has been a want of enterprise and courage on the part of the builders, which is rather surprising, seeing that, wherever a house has been built, it has been immediately occupied. Nevertheless, considerable additions have been made to the town during a short period. Almost the youngest man amongst us can recollect the erection of the Port-Valle suburb; and the Ware-road suburb is the creation of the last five years. It is worthy of mention that these extensions have become necessary for the accommodation of persons whose business lies in the town. Could land for villa residences be procured on the north side of the Ware-road, we might hope for a new population from London, from amongst a class who would certainly prefer dwellings amidst the scenery of Hereford to the tenancy of "a house in a row" in the overcrowded streets of Tottenham or Edmonton. But it is not alone in the extension of the town that we find the proofs of prosperity. There are various improvements which tell their own story.

**Devonport.**—The plans of the proposed public park at the Brickfield have been prepared, giving in detail the proposed alterations, and have been approved of at head-quarters. The War Department have offered the ground at 100l. a year. That offer is now before the committee of the Council.

**Derby.**—A project for a Crystal Palace at the Arboretum has been started, and at a recent meeting of the Arboretum committee, resolutions were adopted to the effect, that drawings, together with plans and estimates of the proposed building, be made and laid before the public, and a subscription raised for erecting it; that a building fund account be opened, and 600l. be paid over from the Arboretum funds to that account; and that the secretary solicit subscriptions to this fund. The cost of a building of the desired size will be over 2,000l. and promises of assistance have been given, amongst which Mr. H. Boden, of the Grange, has promised 100l.

**St. Helens.**—This town is undergoing some sanitary and other improvements. The Sankey brook running through it for many years, and a great nuisance, is being paved with flag, laid in Cyclopean order; and an engine-house, cottage, stables, &c. are also to be erected by the local commissioners, according to drawings furnished by Mr. McManus, the town surveyor. Mr. Charles Bishop, one of the commissioners, is to erect a fountain in the centre of the town, the commissioners supplying the water. The erection of baths, it is expected, will soon follow. The railway, which in a short time will connect St. Helens with Ormskirk and Southport, more directly than heretofore, is progressing under Mr. McCormick, the contractor. Mr. Cross is the engineer to the company.

**Castleford.**—The foundation-stone of a building for the Local Mechanics' Institute was laid on the 3rd instant. The building has been designed by Mr. J. Dixon, of Leeds, and the contractor is Mr. D. Sykes, of Castleford. The building will comprise: a lecture-room, 50 feet long by 34 feet broad; a reading-room, library, class-rooms, &c. The estimated cost is 800l. a large portion of which has been subscribed.

**Galashiels.**—A public meeting was held here last week, to consider the propriety of erecting a town-hall, when it was proposed, and unanimously agreed to, that a committee be appointed to look out for a site, and ascertain the probable expense, and that the capital required be raised by the creation of stock in shares of 1l. each.

#### THE WORKING CLASSES.

I AM sure that all those who have had the opportunity of becoming acquainted with the artisans of London and other large towns will agree with you as to the facts stated in the leading article of your number for the 18th ult. (p. 401), and that the great bulk of intelligent working men will be glad to read the plain and earnest manner in which your opinion has been given. It is quite true that but few of the makers of our laws, and the chief portion of those who enjoy rank and wealth, are aware of the intellectual superiority of a large majority of the working classes who are anxiously watching the progress of events, and it is unfortunate that for years this class which, as you observe, "so largely contribute to the strength and happiness of the country," have been so left without consideration from those above them in worldly position that a spirit of something like contempt and animosity has risen up on the part of the artisans against the upper classes.

In small towns and country villages a friendly communication is kept up between "the hall" and "the cottage," and those of various grades are knit together by various acts of kindness and interest. The clergyman in most instances is acquainted with his flock, both rich and poor, and on Sundays the poorest peasants in their plain yet picturesque smock-frocks, and their homely-dressed yet neat and cleanly clad children, form a sight which few can witness without pleasure.

In such busy hives of people as this metropolis, this community of feeling has been too much cut off, and so isolated are the people from each other, that it often happens that a person is not acquainted with his next door neighbour; and in many instances so large is the population entrusted to the care of one clergyman, that it is almost impossible that he can make proper and regular visits to the houses in his district; and it is unfortunately the case, that the poorer the neighbourhood the greater is the number of those put under the care of a single individual; and yet it is in the poorer places that it is necessary to move with the greatest activity, in order to counteract the prejudice and danger which have arisen.

It must be granted that the difficulties in the metropolis are great of keeping pace with the wonderful increase of the population. Not many years ago the population of St. Pancras was of trifling amount: now it is nearly 200,000. The growth of Islington has been nearly as great; and the same remark will apply to other places. It is, however, most important that a system of house to house calls should be made by each of the parochial clergymen of all thickly-peopled neighbourhoods. I know that this practice has been carried out with the best effect in several of the poorer parishes of London. In almost every instance the visits of those gentlemen who have thus so properly fulfilled their duty, were received with the best feeling by those who even differed from them in opinion; and it is a satisfactory fact that those calls have led to many who had not done so for years becoming regular in their attendance at church: children were taken to be baptised, and many were sent to the national and other schools, who but for those friendly visits would have been growing up in neglect. I have not the least doubt, from the experience I have had of the disposition of the working classes of several large towns, that this system of kindly visitation would form one of those "social bridges" to which you have already referred, and which in a measure would be the means of joining together our at present disjointed conditions of society. By those visits the clergyman would become acquainted with the feelings and requirements of those inhabiting his district: his friendly advice would be the means of adding largely to the numbers in the schools, and he would be enabled by personal communication with the youth who are in course of training in various trades to judge how far they might be benefited by classes, lectures, libraries, &c. in connection with the national schools, which might be made available after working hours. Moreover, the established clergymen would, by this knowledge of the ability, honesty, and good feeling of the majority of our skilled mechanics, be able to dispel by their evidence the often hastily-formed and wrong opinions of those who move in a higher position.

In all attempts to move amongst the working classes, it should be borne in mind that the working classes do not require the intrusion of ill-judged charitable offers; but I am sure, if they are met in a frank and kindly spirit by those whose duty it is to cultivate their acquaintance, it will be found that great good will be the result: and, appreciating the excellent services of the missionaries and others, I must still urge the necessity of the clergymen themselves taking this matter up; and if at the time of those friendly visits they could glance at sanitary conditions, and, when useful, give a word of advice, the benefit would be much increased.

A WORKER.





MIDDLE TEMPLE HALL, LONDON: 1572.

## MIDDLE TEMPLE HALL, LONDON.

THE Knights of the Red Cross, first living humbly in Holborn, removed to the new Temple in 1184, where buildings of cost were erected for them, including the church (which fortunately remains as a choice example of the architecture of that period), a hall, and various other offices appertaining to a monastic establishment; here, during a time of prosperity, the knights dispensed a splendid hospitality, and kings and other magnates were not unfrequently their guests.

In course of time a change came over the scene; the knights had become too powerful and dangerous to the established government; their mission to the East was no longer looked upon as of importance, and, as a matter of policy, the vast property of the Templars was confiscated, and the order suppressed.

After the men of the sword, there came to this site those skilled in battling with the pen and tongue, who have, since the beginning of the fourteenth century, held their own in this place, increasing much in numbers, influence, and riches. Spenser speaks of—

"Those brick towers  
The which on Thames' bank doe ride,  
Where now the studious lawyers have their bowers,  
There whilom wont the Templar Knights to bide,  
Till they deasy'd through pride."

The church escaped, almost by miracle, the great fire of 1666. Antiquaries would be glad if the ancient hall remained too, but this was removed, and the hall we now see there was built in its stead, in 1572. As a specimen of the work of that time it is exceedingly interesting,—as much so as anything in London. On entering the hall, few visitors can fail to be struck by the fine effect of the light and shadow.

The roof is of dark oak. The windows on each side are filled with the armorial bearings of benchers, and other dignitaries of the Inns.

The wainscoting has a large number of shields of arms, some of which are curious. Along the length of the hall stand rows of massive tables and seats, some of them probably as old as the building. At the end of the hall is a slightly raised dais, with a recess towards the river, lighted by a window, also filled with painted glass. The green trees, and well kept grass-plot, bordering Father Thames, form here, when the windows are open, a pleasant picture.

At the end of the hall, where the best light falls, is a large portrait of Charles I. on horseback, and some others. In an honourable position here are also fine busts of Lords Eldon and Stowell, both members of this Inn, and other matters of interest. In this hall one, at any rate, of Shakspeare's plays was acted, very shortly after its composition in 1601. But for the large chandeliers, not very good in form, of burnished gold, and ill-formed shades for the gas-lights which are now used (omitted in our view), it would be easy to fancy the Feasts of Peacocks, and other festivals, when kings and their courts were entertained by the legal Templars, and grave judges in the hall were wont in the season to unbend.

At Easter time the fire-place in the centre of the hall was decked with shrubs and flowers.

In a portion of this building which now belongs to the Middle Temple, the library is arranged, evidently, both as to readers and to books, on a too circumscribed space; and it has been proposed to erect a new library on the site of the fountain which in summer time dashes up its little jet of water amongst the green leaves of the trees, which, for London, and situated where they are beside the old hall, are not objects to be lost or given up if they can be kept. We hear another site is to be selected for the useful purpose mentioned. At present this fountain, which from its position

amongst the trees has attracted much admiration, is simply a piece of pipe stuck in a central basin. A choice work of art should supersede it.

## CORRESPONDENCE ON THE COMPETITION DESIGNS FOR THE PUBLIC OFFICES.

THE block plan to which the premium of 500*l.* has been awarded, is no doubt very beautiful as to its general arrangement and composition. But is it entitled to the first prize? I say, decidedly not, and for the following reasons:—

The instructions given to competitors were admirably and clearly drawn up. An outline of the ground, upon which the buildings are proposed to be erected accompanied these instructions, and it was understood that this outline was not in any case to be exceeded. What shall we say then to those architects who have not attended to these instructions, who have, in fact, thrown them aside, and who have disregarded the value of the properties in connection with the spot in question?

The plan now under consideration, composed by M. Crepinet, of Paris, is, I repeat, very beautiful in its outline, but is it calculated for the spot where it is intended to be erected? Does it adhere to the instructions, or will it be injurious or otherwise to the buildings in its immediate neighbourhood? In the first place, it exceeds very considerably the outline upon which the buildings are proposed to be erected; it sweeps away the whole of Great George-street, north and south; it extends into St. James's-park far beyond the reserved line, and it removes Richmond-terrace. By the block of buildings between Parliament-street and the Thames, it obscures Sir Charles Barry's building; and in approaching from Whitehall the whole of that building would be concealed, as well as the greater part of the Abbey. How is it, then, that this design has been accepted, and that the first prize has been awarded to it? Surely some consideration ought to be paid to those who have abided by the instructions.

The remainder of the plan, as regards the streets,





BUILDING FOR THE FREEMASONS' LODGE OF ST. JOHN'S, TORQUAY.—MR. EDWARD APPLETON, ARCHITECT.

may soon be dismissed. It is a *beau idéal*, made without any regard to the value of property. I might as well take Sir Christopher Wren's plan in my hand, and propose straight lines of streets as far as St. Paul's without any consideration for vested interests. The great merit of an architect, I conceive, is to adapt his conceptions to existing circumstances, and to meet the difficulties which may present themselves, with the least possible injury to individuals. No doubt the plan which M. Crepinet has proposed would be very beautiful, but is it likely such a plan can ever be carried into effect?

VIGNOLA.

#### MASONIC LODGE, TORQUAY.

At the end of May last, the first stone was laid of a building about to be erected in Torquay, for the Freemasons' Lodge of St. John, No. 411. The annexed engraving is a view of it. The edifice will be built of limestone, excavated on the site, hammer dressed (provincial "nobbled") with dressings of Bath stone and brick (in colours) from the architectural pottery, which will also be used for the jambs, &c.

of the internal doorways. The roof will be open to the collar beam, and the floor of the lodge-room is to be laid with parquetry. Our *Masonic* readers will observe that the design has been studied as regards the introduction of the porch, dormer, and tessellated paving. The east end of the lodge-room will have a large circular window filled in with tracery, in the form of crossed triangles, surrounded with voussiors of red and white bricks. The shafts of the porch columns will be of polished dark marble. The apse shape of the west end is dictated by the form of the ground, which runs off to a sharp point. The apse is devoted to the entrance-hall and staircase, with a robing-room over.

The chimney-stack of the two main rooms is placed in front to suit internal arrangements, and as there is a high rock close behind the building, it is probably a fortunate necessity. The lower room will be rented by the Natural History Society of the town, and used as a museum. This museum ranks among the best of the west of England.

The windows of the lower room are placed high up in the wall, to afford room for cases for curiosities under them.

Mr. John Harvey, of Torquay, is the contractor for the works. Mr. Edward Appleton is the architect.

#### OPENING OF THE MANCHESTER AND SALFORD REFORMATORY.

The building recently erected at Blackley for the Mayes-street Reformatory School was formally opened on the 7th inst. by the Bishop of Manchester, under the auspices of the Earl of Shaftesbury, Lord Radstock, and others. The building stands about half a mile to the northward of Blackley Church. It has been constructed by Mr. Robert Neill, builder, Strangeways, from plans furnished by Messrs. Cawley and Radford. It is a plain brick building, with stone facings, and convenience of internal arrangement has very properly been more attended to than beauty of external appearance. The ground to be enclosed, and which has cost the committee 1,550*l.* amounts to nine statute acres. The building faces the south-west. The entrance is



by a large gateway, which runs through the building to a yard behind. To the left of this arched passage is an entrance-hall, from which the stairs ascend to the dormitories, and from which a corridor leads up the centre of the building, dividing the rooms in the front from those at the back. At the foot of the stairs a door leads into the committee-room, 16 feet by 14 feet, from which there is also a door leading into the dining-hall and school-room, an apartment 40 feet long by 20 feet broad, and 10 feet high. At the back of the ground-floor of the building are a bath and lavatory, laundry 14 feet by 13 feet, store-room, kitchen 17 feet by 14 feet, &c. Behind the bath-room a line of building extends for 23 feet, the largest part of which is a workshop, and the lesser and furthest removed, the foul washhouse. The master's house is in a line of buildings to the right of the entrance-hall. On the ground floor are sitting-room, kitchen, scullery, and pantry, and at the extreme right an enclosed yard, from behind which a building extends which forms a workshop, 35 feet by 15 feet. There are various other accommodations, in the shape of dormitories, probationary and refractory wards, &c. The extreme length of the building is about 150 feet, and it covers an area of 482 square yards. The cost of the land and the building contract amounted to 3,224*l.*; furnishings and extras swelled it to 3,724*l.*; and about 400*l.* will yet be required to complete the work, making a total of 4,100*l.* Of that amount, 3,700*l.* has been subscribed, leaving only 400*l.* to be supplied. The building was designed for forty bays, between the ages of twelve and fifteen, though accommodation might be found for fifty to sixty; and the cost of forty boys would be 800*l.* per annum. At present an allowance is received from the committee of council; but more would be obtained if the school was registered under Lord Palmerston's Act.

#### CHURCH-BUILDING NEWS.

**Great Baddow.**—The parish church of Great Baddow has been re-opened for divine service, after having had extensive alterations carried out. The old and unsightly pews have been swept away and replaced by others of a uniform width and height. The floor, which sloped considerably, has been levelled and paved with terra-metallic tiles. A new door, in painted Gothic, with Bath stone dressings, has been erected in the chancel, a reading-desk, in old oak, constructed upon the north side of the middle aisle, and the pulpit, which was carved, and dates from the year 1639, is thoroughly restored. By these alterations, about one hundred free sittings have been obtained, a considerable portion being allotted to the aged poor. The works have been executed by Messrs. J. and R. Sorrell, of Great Baddow, according to the plans of Mr. C. Ainslie, of London, architect.

**Holt.**—Through the liberality of a professional gentleman of this town, the parish church, says the *Norfolk Chronicle*, has been embellished with the following ornamental windows, and it is hoped that the example will be followed out by others with a rearrangement of the pews. A short time since, the south chancel window, within the altar rails, was filled with stained glass by Mr. Jas. King, of Norwich. The window consists of a quatre-foil and two lights; in the quatre-foil is "the Lamb standing upon the Bible;" the two lights are divided into three subjects, the first on each side, "weeping angels" underneath these, and in the second division as it were, "Moses representing the Old Law," and on the opposite side, "St. John the Baptist as the type of the New Law" under these is the "death of the first-born in Egypt;" and opposite, "the resurrection of the first-born;" beneath this window, on the chancel wall, is a brass plate, in scarlet and black letter. Within the last two weeks, the five south clerestory windows have been filled with stained glass, each containing three lights and two crocket lights, by Mr. Wallis, of Newcastle; the subject in four of the windows being the "passion of our Lord," with alternate borders of blue and scarlet. In the first light of the east end is the cross with the spear on one side, and the stick with the sponge on the other side; the middle light is merely filled with stained glass and a ventilator, whilst the third light represents the coat and dice. The second window of the outside lights has "the crown of thorns, with the lantern and sword and staves." The middle window consists of the emblematic devices of "the four apostles spoken of in the Revelations," whilst the centre light has three devices, a figure of the Lamb holding a banner with "Ecce Agnus Dei;" above this Alpha and Omega, and underneath, I. H. S. The fourth window represents "the head of Judas Iscariot, with the thirty pieces of silver, and, under, the rope to which he hanged himself," with the pillar and rope to which our Saviour was bound." The fifth represents "the nails, hammer, and nippers, with the scourges, and sponge and basin." When the old windows were removed, it was found that there was only one stone

millon in the whole five windows, the rest being wood: these have all been replaced with stone by Mr. Freeman, of Aylsham, and as a safety guard, the outside are all protected with copper guards.

**Lawshall.**—The ceremony of re-opening the church of this parish (which has undergone extensive repairs, at the sole expense of the rector, the Rev. E. Baile), took place on the 6th ult. The new floor is of oak, the passages composed of red and black tiles, mixed with Portland stone. The straggling old pews, encumbering the body of the church, have been removed, and oak benches and chairs substituted. The ancient font remains, and the new oaken canopy is carved. The pulpit, lectern, and reading-desks, are of carved oak. The porch is rebuilt and paved. The chancel (also re-built), vestry, and organ-room, are in the early English style. The latter is divided from the chancel by a pierced and moulded oak screen. The edifice is lighted by numerous lancet windows, several of which are of stained glass. The ceiling is decorated. The pavement of the chancel is laid with Minton's encaustic tiles, figured. The architect employed was Mr. Butterfield. Mr. Elliston executed the woodwork, Mr. Grimwood the bricklaying, Messrs. Keogh (Brothers) the stone-masonry: all are of Sudbury, Suffolk.

**Buckingham.**—A congregational church has been erected here, and was opened on the 5th instant. The building, which is in the style of the latter part of the thirteenth century, and is similar to Christchurch Chapel, Banbury, consists of a nave (with end gallery for the school children), and one aisle, together with minister's and deacons' vestries, entrance lobby, and porch, and will seat about 500. The internal length is 70 feet, and the width 38 feet. The roof is open to the timbers, and consists of six arched hammer-bess trusses, enriched with light shafts and carved tracery panels. The arched ribs support an inner ceiling which forms a ventilating chamber between the chapel and the external air. The nave and aisle are divided by an arcade of four compartments (the columns, capitals, and springing of the arches being of stone), corresponding with which, on the opposite side, are two arches opening into the vestries, which are separated from the chapel by traceried parloches with curtains. The seats are open, with cut elbows, and, together with the other internal fittings, are stained and varnished. The porch, lobby, and passages, are floored with red and black Staffordshire tiles. The cushions and hangings of the interior will be of a uniform blue colour. The building will be lighted by metal gas standards, of mediæval character. The windows are glazed with cathedral glass in lead quarrises. Owing to the limited extent and confined nature of the site, the architectural features of the exterior are principally restricted to the front elevation. This consists of a lofty gable, the principal feature of which is a triple window. The heads of the lights are fitted with geometrical tracery. The principal gable is flanked by a turret containing the gallery entrance and staircase. The walls are built with Cosgrove stone, with Bath stone dressings. The building has been executed by the contractor, Mr. E. Chesterman, of Banbury, under the direction of the architects, Messrs. Fosters and Wood, of Bristol. The warming apparatus was supplied by Messrs. Haden, of Trowbridge.

**Bridport.**—The parish church of Bridport is to be restored at a cost of 1,200*l.*

**Bromsgrove.**—A meeting of the Bromsgrove Church Restoration Committee was held on the 7th inst. for the purpose of receiving tenders for the work. Tenders had been obtained by writing to different individuals, and some of the subscribers to the fund felt dissatisfied with this mode of proceeding. The tender of Mr. Cooper, of Derby, being the lowest (2,800*l.*) was accepted. The work he contracts to do for that sum includes the restoration of the edifice, new pewing, and removing the galleries. Several things necessary to the complete restoration of the parish church will have to be carried out by others.

**Bebington.**—Christ Church, Higher Bebington, is designed in the first Pointed style, and will consist of nave, north and south aisles, chancel, organ, chapel, north porch, and sacristy. The principal entrance will be through the north porch, and there will also be two entrances one on the west and one on the south. The total inside length of nave is 84 feet 7 inches, and of chancel 28 feet; in all 112 feet 7 inches; width of nave, including aisles, 51 feet. There will be a lofty clerestory to the nave, with seven three-light windows each side. The roofs will be of open timber framing, covered with boarding beneath the slates, all, as also the seats, stalls, and bench-ends, stained and varnished. The nave will be separated from the aisles on each side by an arcade of six bays. The pillars and arches, as also, those of the chancel, and of all doors and windows, and all the clerestory and the inside of the walls of the nave, chancel, &c. will be of polished stone, no

plaster being used in the church. The passages porch, and chancel will be paved with tiles. The west window, of six lights, will be of considerable size, and the east or chancel window, of four lights, will be filled with tracery. The height of nave, from floor to top of roof, will be 47 feet, that of the chancel 36 feet. The pulpit will be of carved stone. All the stone, both externally and internally, will be from the Storeton quarries. A tower and lofty spire are intended to be built at a future period. Part of the aisles will not be built at present. All the benches are to be open, without doors with carved ends, and a considerable portion free. The church will have accommodation, at first, for 500 persons, and when completed for 690. Mr. Walter Scott, of Birkenhead, is the architect, and Mr. James Routledge, the contractor.

**Liverpool.**—Stanley Church, Old Swan, has been re-opened. Two stained-glass windows, the gift of Mr. W. Preston, have been added to the chancel, representing the Conversion of St. Paul and the Deliverance of St. Peter. Other two windows have been fixed as memorials, one representing our Saviour reproving Martha, with Mary sitting at his feet; the other, the two Marys at the Sepulchre. The windows have all been designed and executed by Messrs. Forrest and Bromley, of this town.

**Covenry.**—Holy Trinity Church, Covenry, has been cleared of old pews, galleries, white and drab wash, and re-seated with oak open seats, with poppy heads. The whole of the seats in the south transept and the south side of the nave are free, and are now always filled by the working classes.

**Wantage.**—The old parish church of Wantage, which has been under repair since May, 1856, has now been re-opened. The edifice, which still retains portions of "twelfth century work," had been enlarged, and encased by architecture of the sixteenth century, when the third Pointed style was becoming debased. The work of this date, though of a very coarse description, and in its details far from pleasing, gave better proportions in length and height; but being of a very indifferent character, it was every where falling into decay. The mullions, crumbling to pieces, were patched here with plaster, and there with wood, washed to imitate stone; the roof, hardly keeping out the water, were in places threatening those who might gather together under them; the area of the building was choked with high pews, and its arches were cumbered with heavy galleries. These have been removed. A new roof of considerable higher pitch than the old one has been raised over the chancel, the interior woodwork of which is left open, and varnished. A new east window has taken the place of the old one. In character it is in keeping with the original middle Pointed window, the remains of which were found a few years ago imbedded in the chancel walls. It is of five lights, with a large circle, cusped with open work in the upper part, and is filled with stained glass. The two northern and southern lights contain figures of St. Peter and St. Paul (to whom the church is dedicated), and of St. John and St. Andrew: the middle light represents the Incarnation of our Lord, and the circle above contains the Crucifixion. New clerestory windows, of simple design, have also been inserted; and a reredos in stone, marble, and alabaster, has been raised behind the altar. The floor has been laid by Messrs. Haydman, and the floor was laid by Messrs. Minton: in this pavement there is a considerable admixture of bright green tiles. The remainder of the church is floored with Minton's tiles, in a simpler pattern. The south transept has received a new window, of similar style to that in the chancel, but of simpler design. Iron stalls have been placed under the central tower, the roof of which is groined in stone. A pulpit of stone and alabaster, of the same character with the reredos, has been placed in the nave, the roof of which has been thrown open, felt and boarding being placed between the lead and the rafters. The whole of the stonework has been made good, within and without. Messrs. Kent, of Wantage, builders, were the contractors.

**Shields.**—The Roman Catholics of North Shields have resolved to erect a memorial to their late pastor, the Rev. Thomas Gillow. The memorial is to consist of a new tracery window, filled with stained glass, to be placed in the south side of the chapel, and also a carved monument, to be placed near the entrance outside. The committee have selected the designs of Mr. Archibald M. Dunn, of Newcastle, architect, and the stained glass will be executed by Mr. Wallis.

**Newcastle.**—The boarding which has hitherto obscured the new Presbyterian church, in Blackett-street, says a local paper, has been removed. The spire, though scarcely sufficiently high for the position in which it is placed, is yet as elevated as the comparative smallness of the church would admit of without erring in the proportions of the erection. The interior of the edifice is plain. The roof is an



open timber one, high pitched: the pillars which support it are of iron, with ornamental capitals. In allusion to this edifice, the *Gateshead Observer* says, "The community will give nicknames, and the new church in Blackett-street has been dubbed 'The Giraffe!' and the resemblance is certainly as striking as that of certain stars to Bears and Chairs,—which is not saying much for the likeness."

#### BLUE BRICKS.

ANOTHER "Clerk of Works," in reference to our correspondent's question on this subject last week, says he very much doubts the possibility of staining bricks so as to correspond with the blue jamb bricks, and the difference not perceptible to a practical eye; "and to produce an imperishable glaze on one equal to and corresponding with the jamb brick, on the face of the common red brick," he continues, "I think would be equally difficult. But why not make moulds of those of the arch bricks intended to be blue, and hand them over to the Staffordshire manufacturer, to be made and treated in precisely the same manner as the jamb brick? By this method of treatment he would be able to produce a uniform tone and quality throughout the building, and, in the end, as economical as the artificial means of staining. He does not describe the length of the arch brick, but should it be so long as to cause a doubt as to its retaining its proper form when exposed to the fire, cut it in two at the cross joint immediately on taking it from the mould, previously to being dried."

"One of the Craft," says on this subject,—"As the glazing should be indelible and a component part of the brick, I much doubt if it can be done; but if it is to be obtained at all, it must be before the bricks are laid. The following, I think, may be the only means.—After the bricks are cut and rubbed, wash them with water, sufficient to remove all dust from them, and when dry, apply the staining and pigment for fixing and glazing the same, as used by potters; and then subject them to a burning in an oven, the same as used for burning paintings, &c. on china; or in a pottery kiln may answer the same purpose."

Unless the glazing is procured by burning, the application of any substance will, in my opinion, be a failure, by the effect of the sun and weather."

In reply to an inquiry in your last number by a clerk of works, we beg to inform him that no mere staining of the arch bricks will answer, and both that and glazing would be an invasion of our patent; but if he will apply to us, we shall be happy to aid him. In common with others, he mistakes in calling the Staffordshire blue "a glazed surface." It is not glazed at all, as potters use the term; but the peculiar colour, neither black, blue, nor gray, is the result of a chemical change produced on the iron of the clay and silica at a high heat. Another error, much in fashion now, is using the term of "coloured bricks" to the common red, and buff or yellow (miscalled white). Strictly speaking, they are not colours at all, but simply the usual well-known native clays, often combined in a building with effect. The only building materials really glazed and coloured, as Maroon, Celeste, and Mazarine blues, pink, orange buffs, druffs, &c. and the only ones proved to be perfectly impervious to wet, dirt, gases, smoke, &c. are those manufactured by us (Bale's patent). These goods have been largely used at the Lecture-hall, Trinity-college, Dublin, and many other public and private buildings, in the kingdom, banks, stations, baths, &c. Hoping this information may serve your correspondent and others,

We are, &c.

THE PATENT ARCHITECTURAL POTTERY COMPANY.

#### ON THE POINTED PENDENTIVE DOME.

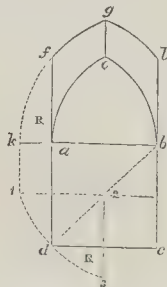
THE pointed pendentive dome,—i.e. a dome in section a pointed arch, and having vault arches of similar figure,—is a vault which I have never seen employed, and yet, possessing all the excellence of the pointed arch, it is the lightest, the most easily equilibrated, the most perpendicular in its thrust, and so, the best and cheapest of pendentive domes. And it would be deemed the best in taste by those who hold Bartholomew's maxim, that taste in architecture is purely structural. Best in taste, and best in construction, I should conceive that this dome would not be an inappropriate feature in modern "utilitarian" architecture. However, it has in its height a disadvantage which would frequently cause it to be superseded by a segmental or circular dome.

Pointed pendentive domes are as susceptible of variety as the ordinary circular domes: they are applicable to any plan, the angles of which touch the circumference of a circle. They may be stopped at any horizontal course, and be surmounted with any kind of dome, circular in plan, or polygonal, and of a

section either pointed or semi-circular, or by any form of cone or pyramid.

The most obvious pointed pendentive dome is that derived from the sphere, and is, in the upper portion, in plan a polygon of curved lines. It consists of as many segments as the plan has sides, of a sphere, whose

radius =  $\frac{s \cdot d}{r}$ , where  $s$  = a side,  $r$  = the radius of its arch, and  $d$  = the diameter of the circumscribing circle. This holds for all plans, square, oblong, hexagon, &c.



The diagram represents this dome to a square plan,  $abcd$ ;  $aeab$  is the elevation of arch; 1, 2, 3, is one of the four segments of the sphere of which  $b$  is centre, and  $bd$  radius;  $kfg$  is the elevation of 1, 2; and the portions  $R$  being retrenched, the figure  $afglib$  represents the section through the centre of the dome on the line 1, 2;  $a$  and  $b$  being the centres, and  $dk$  the radius of the arcs  $fg$  and  $gl$ ; the section on the line  $bd$  would be an equilateral arch, as is  $aeb$ .

Another pointed pendentive dome might be formed by making the circumscribing circle the plan of an ordinary pointed dome, into which the pointed arches would cut; but the line of these arches would become curved both in plan and section. S. C. R.

#### DEBATE ON THE PROPOSED PUBLIC OFFICES.

IN the House of Commons, last Monday, on the question of going into committee of supply, Mr. Beresford Hope moved that a humble address be presented to her Majesty, praying her Majesty to appoint a royal commission to consider the site and plans of the proposed new public offices, and particularly the Foreign and War offices, and to report on the same. He said the judges discharged their duty ably and conscientiously, but being bound by their instructions, they were obliged to give prizes to three plans totally different from each other, and incapable of being fused together. A French gentleman got the first prize for the block plan, an Englishman got the prize for the Foreign-office, which was incapable of being worked into the block plan; and another Englishman got a prize for a War-office, which was equally at variance with the block plan and with the Foreign-office. He understood that the block plan was to be thrown aside, and that the discordant War and Foreign offices were to be run up cheek by jowl. An excuse had been made, that to carry out the block plan of M. Crepinet would involve an extraordinary amount of expenditure. He could not deny that, if this plan were carried out in its integrity, it would cost a sum which would stagger the legislature, but, besides the scheme for the re-adjustment of the public offices, this plan contained a scheme for the re-arrangement of the approaches, considered particularly with a reference to the rebuilding of Westminster-bridge, which was not an essential part of the block plan, but which the competitors had been invited to contribute over and above the main design. It was not certain, however, that the scheme of the Government would be much less costly. It certainly would be much cheaper, in the long run, to lay down some great scheme, which might be carried out gradually as the national resources would allow, than to run up two independent and distinct offices, which would be finished in 1860, and which, before 1861 had gone round, we should devoutly pray that some earthquake would destroy.

The Chancellor of the Exchequer deprecated putting the matter into the hands of a Commission, and said, all they wanted this session was power to acquire sufficient space for the erection of a new Foreign-office, and one or two other public offices.

Lord John Russell said he hoped that the Government would throw aside the whole of these plans, and consider what it was they wanted, and what sum of money they were prepared to propose to Parliament, and then let them obtain plans suited to the expenditure

they propose. The plans which they had at present were, without doubt, exceedingly handsome, but they seemed to him infinitely more adapted for palaces than public offices.

Sir Benjamin Hall explained the course he had adopted, and showed that the buildings proposed were no larger than the requirements of the offices demanded. Then, with regard to the architectural elevation, he said surely it was desirable, if they were to rebuild the public offices, that they should have some design for an elevation which should really be worthy the country, seeing that the constant complaint was that the public buildings in the metropolis were such wretched abortions. He had had these designs exhibited, and he believed they had met with considerable favour, but it was for the House of Commons to say whether they would carry them out. If the House thought them too grand or expensive they would not be proceeded with. What the Government proposed to do at present was simply this, to have some ground set apart in the neighbourhood of Downing-street on which two or three public offices might hereafter be erected; but no steps would be taken in regard to the expenditure until the House of Commons had sanctioned the proposal. He proposed during the recess to look at the designs which had been approved by the judges, and endeavour to ascertain the expense of carrying them out; but nothing further would be done until the House was informed on that point.

Mr. Tite thought the block plan was so extravagant, involving an expenditure of from five to ten millions at the least, that no country could be expected to embark in it. It was quite true that in the two plans for the two blocks of buildings one was modelled on the *renaissance*, and followed closely the style of the Hotel de Ville, and the other was in a very ornate style of Italian architecture. To have the building of Sir C. Barry in which they were assembled in juxtaposition with a building very much like the Hotel de Ville, would be an incongruity which no man of taste would put up with for a moment. He wished to impress upon the House that they ought not to embark in anything without a distinct and well-considered plan. He believed that the competition had not produced much of a practical character, but the suggestions of the eminent and talented men who had competed were worthy of consideration, and he hoped that the Government, having the results of the public competition before them, would take time to consider these suggestions, and would be prepared next session to submit a well-digested plan to the House.

After other speeches, the motion for going into committee, negativing Mr. Hope's proposition, was carried by 138 to 8 dissentients.

A grant has since been obtained for the purchase of the site.

#### THE LEICESTERSHIRE ARCHITECTURAL AND ARCHEOLOGICAL SOCIETY.

THIS society held its meetings in the week before last, at Ashby-de-la-Zouch. On Tuesday morning the members and friends assembled at the castle, the Rev. J. M. Gresley acting as *cicerone*. The attention of the visitors was directed to the various points of interest, particularly the chimney-piece in the upper part of the building, and the remains of the chapel. From the castle the party proceeded to the church, where the carved screen was one of the first objects that attracted attention. Nothing excited more interest, however, although not of a very ecclesiastical character, than the celebrated finger-stocks at the west end, which are believed to be almost unique. This singular instrument for the punishment of disorderly behaviour, we may state, answers the same purpose with regard to the fingers as the stocks, which formerly stood on every village green, for the feet: the apertures are graduated, so as to secure effectually the digital appendages of the stoutest adult and the youngest boy who might chance to require the exercise of their corrective efficacy.

The business meeting was held in the Bath-rooms at four p.m. and the public meeting in the same rooms at eight p.m. The latter was numerously attended. Sir A. G. Hazlerigg, bart. took the chair. A letter from Lord John Manners, apologising for his absence, having been read, the Rev. J. M. Gresley read a paper on Croxden Abbey. The rev. gentleman traced the origin of the religious establishments of the twelfth century to the remorse of the Norman nobles for the crimes of which their ancestors had been guilty to the serfs and villain over whom they ruled, their idea being that by the foundation of these houses they would promote the benefit of the souls of the departed, while they were of great benefit to the poor of the current age. It was impossible to rightly appreciate foundations of this kind without divesting ourselves of many of the prejudices in which we had been brought up. The Abbey of Croxden, he observed, was founded by Bertrand de Verdon, as a monastery



of Cistercian monks. It was one of the few religious houses which were permitted to survive for a short period the general destruction decreed by Henry VIII. In 1538, however, it was surrendered by the abbot, and the king's agents forthwith destroyed it. A paper by Mr. P. North on the principles and aims of Archaeological Societies, was then read, and the Rev. Mr. Gresley followed with some remarks as to the Leicestershire Society.

An exhibition was held in the large room at the Bath-rooms, superior, it is said, to any the society has ever been able to collect together till now. The visitors to it were numerous.

An excursion took place on Wednesday, when Repton and Melbourne were visited, also Breckon-on-the-Hill, and Staunton Harold, at all which places the churches formed prominent objects of interest.

#### PROGRESS AT MONTREAL.

THERE are many buildings of recent erection, in course of erection, or about to be erected, at present in this city. We can notice a few only of the more important.

The foundation-stone of Christ Church Cathedral was laid some time ago. It will be a cruciform structure in the Early Decorated style, with tower and spire at the intersection of the cross branches. The material will be Montreal limestone, with dressings of Caen stone. The plan consists of nave, with north and south aisles, and north porch, transept, chancel, and chancel aisle, with vestry attached. The following are the dimensions of the building:—Length (inside), 187 feet; width of nave, 70 feet 6 inches; transept, including tower, 99 feet 6 inches; height of tower and spire, 224 feet. The nave and chancel will be lit by windows in the clerestory of two lights of varied tracery, in addition to which, at the chancel end, there will be a large ornamental window with five lights, of a highly decorative character; and, at the nave end, a wheel window, of 12 feet diameter. The aisles are lit by windows with three lights, having tracery of varied design. The main entrance to the edifice will face St. Catherine-street, flanked by two large octagonal turrets. The designs were furnished by the late Mr. F. Wills, the architect of the cathedral church at Fribourg, in Nova Scotia, and of various other important churches both in the British provinces and in the States. The plans for Christ Church were unfinished, but have been adopted by the present architect, Mr. T. S. Scott, of Montreal. The contractors are Messrs. Brown and Watson, builders.

A Roman Catholic cathedral is about to be erected in St. Antoine's ward, on the site of the old cemetery. It will be in that style of architecture which has grown out of the Grecian basilica, by the addition of dome and towers. The pillars are to be of the Corinthian order, and the whole building will be cruciform, and a copy of St. Peter's, at Rome, so far as can be observed in an edifice only one half the size. The outside walls will be of finely-cut stone, but the interior chiefly of brick. The design will be intrusted to Mr. Victor Bourgeois, who has visited St. Peter's for the purpose of studying all its dimensions.

The Unitarian Church in Beaver-hall will shortly be rebuilt on an enlarged scale, and on the present site. The style adopted is the Byzantine. There will be a tower about 17 feet square, and rising to a height of 120 feet at the east end. Some of the windows will be of stained glass. The architects employed are Messrs. Hopkins, Lawford, and Nelson.

St. James's (R.C.) Church has been erected on the ruins of the one destroyed by the great fire, and known as the Bishop's Church. It is in the Pointed style of thirteenth century. The windows will be of stained glass.

There are other churches in course of improvement, one of these being St. George's, which is being enlarged, and St. Andrew's, which is being enclosed with cast stone plinth, and cast and wrought iron railing.

The Theological College in course of erection on the ground of the seminary of St. Sulpice—commonly called the Priests' Farm, abutting on the line of Sherbrooke-street, is an extensive and imposing structure, in the Italian style of architecture. The plan forms three sides of a quadrangle, with the wings advancing. The western wing will contain a chapel 100 feet by 40 feet, in the Corinthian order. It is probable, says the *Herald*, in describing the building, that this is the most substantial building ever erected in Canada, built from a quarry of compact building stone of basaltic character. The materials employed were of large size, and very generally of the whole thickness of the wall. When used in facing as ashlar, the introduction of grey stone dressings produces an agreeable effect. There is no quarry in the district of the same class of building stone. Mr. Footner is the architect.

Amongst the business premises, stores, &c. newly

erected, or in progress, are a large wholesale store, in Wellington-street, Mr. A. Laforge, builder; a large flour warehouse, at the corner of Grey Noun and William streets, Mr. Noah Shaw, builder, cost 4,500*l.*; and a store such as that in Wellington-street, close to the locks of theachine Canal, Common-street, Messrs. Hopkins, Lawford, and Nelson, architects.

There are also numerous town residences and street dwellings recently erected, and in course of erection. A town mansion is being built in Dorchester-street West, of fine cut stone, at a cost of 7,500*l.*—architect, Mr. J. H. Springle. Adjoining is a site destined for a similar mansion, and a residence in St. Catherine-street is about to be extensively altered and enlarged, in the castellated Gothic style, from designs prepared by Messrs. Hopkins, Lawford, and Nelson. Four cut-stone first-class residences, near the English Hospital, in Dorchester-street, have been designed by the proprietor, and are in course of erection. A villa residence has been erected of cut-stone, in its own grounds, in Drummond-street; it has a stone portico of the Ionic order, with fluted columns.

These few particulars, selected from a numerous list, may give some idea of progress at Montreal.

#### PLACES FOR STATUES.

WHILE passing through the principal thoroughfares of this "Our mighty London," I have often been struck by the number of unoccupied niches in most of the public buildings of which we boast. It would be needless for me, sir, to point out to your readers what a serious deterioration these omissions are to the general beauty of an edifice: the appearance of St. Paul's and other buildings answers that.

What I would suggest is this—that these niches should be made the receptacles of statues of our illustrious men—statues that we (admiring Londoners) too often bury within cathedral walls: let them be exposed around our public buildings, where places have so long been provided for that purpose, so that as passers-by we may look upon them and remember that—

"We can make our lives sublime,  
And departing leave behind us  
Footprints on the sands of time."

ETA.

#### THE MAIN DRAINAGE SCHEME.

THE great objection we have already urged to that part of the plan of the referees who have reported on the scheme for the drainage of London, which proposes to carry the sewage to the outfall in huge open channels, appears to be very generally felt. In the face of the present nuisance arising from the Thames, of which the sewage forms but a comparatively small portion, it is impossible to contemplate with equanimity the establishment of two streams of pure sewage, 35 feet wide, with a very sluggish fall.

A member of the Board of Works, Mr. F. Doulton, writing on the subject, says:—"From your reports of the debates of the present board, when discussing their own project, it appeared that a considerable diversity of opinion existed as to the fall which ought to be given to the main sewers. Their most eminent predecessors had, it appeared, settled that 4 feet per mile was the least they ought to have, whereas the present board were advised by their engineer that they could do with 2 feet per mile, but he seemed to think it ought not to be less. The referees, however, improving upon him as he improved upon his predecessors, when they nearly doubled his estimate, reduced the inclination of their sewers to 6 inches per mile. Now, sir, I have lived all my life by the river-side, and I know the bed of the Thames above Blackwall falls about 2 feet per mile; and I do not require a galaxy of eminent talent to tell me that, with all the scour of the tide, aided by the steamers, shoals are continually forming, and require a vast deal of dredging to keep them down—a great deal more, indeed, than they get; and if this takes place in the Thames, what will happen in the big ditches?"

#### PROPOSED NEW PUBLIC BUILDINGS IN MANCHESTER.

CONSIDERABLE discussion is taking place in Manchester, through the press, and in public and private circles, respecting the entire remodelling of all the public offices connected with the corporation, the law courts, the post-office, and other public buildings. The post-office authorities have requested the city council to point out a situation for a new post-office, as the present one is most contracted and inconvenient. As the town-hall, the gas and water offices, the borough court, are also too contracted for the increasing requirements of Manchester, it is thought that the present time is a fitting one for a complete remodelling of the arrangements connected with the buildings for public purposes, and the subject commands attention.

It is to be hoped that the "merchant princes" of

Manchester, who have exhibited such spirit in the erection of palatial warehouses, will not allow a niggard spirit to prevail in the arrangements to supply the present acknowledged want. The opportunity of improving the city should not be allowed to pass, and we trust to be able shortly to record a decision on this subject which shall secure a comprehensive pile of buildings that shall be an honour to Manchester and the boast of her citizens.

If this subject be grasped in an enlarged and enlightened spirit, the internal street communications may be considerably improved; a central open square may be provided (of vast importance to the health of the city); and an advantageous concentration of corporation offices, and provision for the requirements of post-office, law and bankruptcy courts, &c. may at once be attained.

#### FOREIGN INTELLIGENCE.

*The Louvre of Napoleon I.*—M. A. Léo has published an elaborate series of papers on that huge palace, from which we derive the following sketch of the Louvre, as it *now* appeared under Napoleon I.:—"The Emperor fully appreciated the plan of Bernini, and wished to execute it. But there are plans of ambition (even in the arts), which a wise economy dissuades to follow. Percier and Fontaine, the latter one of the fanitiers of Bonaparte, proposed the following plan.—There was to be a gallery contiguous to the library, and parallel to the facade of the Tuilleries, which reached on one side the buildings of the Rue de Rivoli, and towards which the south and north wings of the Louvre were to be prolonged. The north part of the palace had to receive, on the side of the Palais-Royal, a chapel, the entrance to which was a *pendant* to that of the Musée, and a little further the great Opera building was to rise. Between the new building on the south side of the court, and the gallery on the bank of the Seine, a Court de Service was intended. This plan approached much that of Perrault." Messrs. Percier and Fontaine executed, however, that splendid monumental staircase, which led formerly to the gallery of paintings, and which did much contribute towards the fame of these two architects.

*Inauguration of the Louvre, Paris.*—The *Moniteur* announced that, on the 14th instant, at two p.m. the emperor in person would inaugurate the new buildings of the Palace of the Louvre, begun in 1852 and finished in 1857.

*Paris Exhibition.* Charles V. at St. Just.—This picture of M. Robert Fleury may be considered as one of the best amongst a deal of mere handicraft art. It represents a richly-decorated *salon* of the Convent-Palace of St. Just, when the aged monarch, borne down by illness and *ennui*, received the messenger of Philipp II. to engage him to re-occupy his former position, to which he gave a declining answer.

*Paris.*—*Ménilmontant.*—Ménilmontant, that charming suburb of Paris, where J. J. Rousseau dreamed, is to be cleared away, although for a useful purpose. As the people's *alimentation* is one of the great topics of Paris journalism, M. Victor Bonie has put forth a plan of a "Marché central de la Bouchevie Parisienne." M. Bonie places in the middle of his plan a large covered *rotunda*, this being the central hall, of more than three hectares of ground surface, where men and beast would be, at all times, under shelter. As the whole of Paris is encompassed by a circular railway, there will be a branch line starting from its nearest part to the hall, so that the cattle can be brought without transshipment from the farm direct to the slaughterhouse. The site of Ménilmontant has been chosen on account that out of the 1,800,000 inhabitants of Paris, 349,000 only live on the left bank of the Seine.

*Paris.*—*Improvements in the Cité.*—These improvements, begun in 1836 and 1839, are to be completed on a great scale. According to the plan, the Rue Constantine is to be continued from the Rue d'Arcole to the banks of the Seine, amongst a heap of old and ruinous houses. At the top of the Rue Constantine thus prolonged, the archiepiscopal palace would rise on the eastern point of the Isle de la Cité. This new piercing would make a new passage from the Quai Napoleon to the northern portal of Notre Dame, which would then be seen from the great saloon of the Hôtel de Ville. This street would cut the Rue Constantine at right angles, and the four finest buildings of Paris would be visible at one sight. The expense of these improvements would not be very great, considering that the houses to be pulled down are of little value, and those erected in such cleared localities being worth the double of the former old *maisons*. However, of ancient Paris there will be soon no vestige left.

*Munich Art Union.*—Some of the German art critics cavil much at the *ensemble* of the *Kunstverein* and its late exhibition, and say that it is *life* alone which imparts value to art productions, and that nothing deficient



of this quality will for any length of time engage attention. They apply this axiom to the pictures of Rodolph Hapsburg, by *Schneid*, and the Ascent to Heaven of Christ, by *Schraudolf*. We cannot follow the writers of the *Allg. Zeitung* in comparing the former figure to that of a master tailor (*Schneidermeister*), &c. The *Genre-bilder* of Bischof, J. Zimmerman, Gogel, &c. one representing a scene of Versailles of the olden time, are more favourably spoken of. While historical pictures are now made after sickly models or dolls (!), the landscape is the only thing possessing a foundation of real appreciation. Thus Isar scenery by A. Zimmerman is much praised, which has procured for this young artist a call as professor to the art academy of Milan.

**Berlin: New Gates, Sanssouci.**—The new gates to that former residence of Frederic the Great are now completed, and form a worthy entrance to that historical palace. Four large iron columns, each of the weight of 30 cwt., topped by heads in the form of Hermes, support the four parts of the main railing. Each of these weighs 18 cwt., and is ornamented with arabesques, *chiffres*, laurel wreaths, &c. Most of these ornaments are richly gilded. The *Freidenkirkche*, ornamented last year with two Roman columns, and other palaces and public buildings, add to the fine sights of this part of Potsdam.

**Bavaria: a National Work.**—By order of the king the first volume of the work entitled "Bavaria," will appear at the close of the year. The whole work, destined for universal circulation amongst the nation, will comprise four vols. of about forty sheets of impression each. It will contain a succinct history of the country in its external relations, a general statistical description of the land and its inhabitants, and an outline of the constitution and administration of the realm will conclude the introductory volume. The remainder will contain a detailed description of the different *Kreise* (counties); their chains of mountains, net of rivers and water-courses, character of the landscape, the climate, the geological geographic character, and distribution of the animal and vegetable kingdoms. The ethnographical portion will comprise the bodily and sanitary condition of the people, moral physiognomies (!), sketches of popular and culture history, and the social condition. It will also deal further on the habitations, towns and villages, clothing and nourishment, the different dialects spoken by the Bavarian people, and their peculiar habits and customs. The agricultural and horticultural condition, the condition of the forests, industry, trades and commerce, will also be treated. The history and description of each *Kreis* will, in fine, embrace a description of monuments and remarkable buildings, and the various art curiosities contained in public and private collections. [Such a work deserves to be imitated throughout Europe.]

#### GAS.

It is well known, says a French paper, that the illuminative power of gas may be heightened by mixing it with the vapour of liquid hydro-carburet. But when this mixture is effused at the gasworks, the gas, in its progress along the pipes, loses a considerable portion of the hydro-carburet, on account of the partial condensation of the latter; so that the effect obtained is much inferior to what might be expected. M. Lacarrière, a manufacturer, has just invented a small apparatus, which he calls a "Saturator," by which the mixture of the gas with the vapour of the hydro-carburet can be effected on the consumer's premises, thus obviating the inconvenience and loss alluded to. The substance he uses for this purpose is a compound of several hydro-carburets, known in trade under the name of Benzine-Collas. About forty grammes of benzine to every cubic metre of gas will increase the intensity of light by seventy per cent. There is, however, a serious objection to the general introduction of this method in the high price of benzine, which at present costs 2*fr.* 70*cs.* per kilogramme; whereas, to apply it usefully in an economical point of view, the highest price that could be admitted ought not to exceed one franc.—Alex. Ross, Jas. Valentine, A. Murray, and Alex. Don, Tottenham, Kinross-shire, have invented a new process for purifying coal gas, by the use of all kinds of pine-tree and hard wood, either in a state of sawdust or in a chopped and bruised condition, in lieu of the ingredients hitherto employed for purifying coal gas; the same ordinary purifying apparatus, without alteration, serving for the purpose of purifying gas according to this invention, thus.—The gas coming into contact with the sawdust, or wood in any other state, chemical action ensues, and effects the purification of the gas, and the purifying matter (wood) is converted into a suitable manure or fertilising agent; or, if not used for that purpose, it may be employed with advantage in the retorts, in lieu of coal, in the ordinary process of manufacturing coal gas, when it will be found to yield a considerable quantity of an excellent

gas, and the residuum in the retorts will be pure charcoal.—The *Yorkshire Gazette* states that a firm in York have received instructions to fit up the *Great Eastern* steam-ship with gas-works, and all necessary gas-fittings, on a most elaborate scale.—A recent reduction of 104. per thousand feet has been made in the price of gas at Otley; namely, from 7*s.* 6*d.* to 6*s.* 8*d.*—The Worcester Gas Company have declared a dividend at the rate of seven per cent.—In boring for water in Crystal-street, Hull, a natural jet of gas has been found, which yielded at once a flame two yards in height, sufficient to light all Hull.

#### ALDERSHOT HOSPITAL.

##### VENTILATION.

Sir,—In reference to a notice in the *Builder*, of July 11th, together with the editorial note attached to the same, touching Netley and Aldershot hospitals, may I beg a spare corner in your paper for the following.

Although many of the advantages contained in my designs for the military hospital at Aldershot are remarked upon by "Juste Judicatio," there are others, of still more importance, which require a brief notice: among these are warming and ventilation.

From the large amount of space given to each patient (about 1,500 cubic feet), it may be considered by some that very special efforts connected with ventilation are unnecessary. I am, however, far from such an opinion: I believe that in apartments of all sizes, and to whatever purpose appropriated, too much care cannot be bestowed upon this most essential provision for the promotion of both health and comfort.

The manner in which rooms are now constructed is, in my opinion, really criminal: one would suppose that every pains and care were taken to render them as thoroughly uncomfortable and unhealthy as possible: they are positively as much like air-tight boxes as they can be. They have no properly constructed inlets for fresh air, which is left to get in as it can, through the chinks and crevices of ill-fitting doors or windows. It is a mercy, for the sake of their inmates, that the joinder does not more perfectly complete his work: were he so to do, the chances are that they would not "live out half their days," where the foul or respired air is guardedly retained, as though tenacious of losing one breath. It is scarcely necessary to say that when air has passed from the lungs it has acquired that levity with which Nature, in her wondrous adaptations, has invested it, and by which it rises to the ceiling,—if not allowed to escape, spreads itself out into a thin layer over the cold surface of our plaster ceilings,—condenses into a heavier gas than the pure air, and from thence descends upon the unfortunate inmates of the apartment, to be by them re-breathed. It is true that a portion escapes up the chimney (provided there be a fire burning), but it must be borne in mind, that as the chimney-place is usually lower than the mouths of persons sitting in the rooms, so in its passage to the fire-place it must pass below the level of their mouths, and consequently be inhaled, with all its sickly and pestilential qualities.

Considering, therefore, that nature would effect all the purposes of ventilation if we did not prevent her, I decided to construct the wards of the hospital in question so as to offer as few impediments to her unaided action as possible. Thus, firstly, as to the admission of cool fresh air. I propose introducing it through the flooring, down the centre of the ward, so that passing between the foot of one bed and the foot of the opposite one (for the beds are opposite to each other, down both sides of the room), it will keep the ward thoroughly pure, while it will offer no draught to the patients, whether in or out of bed. The mode of its introduction is most simple—as follows:—The ceilings to be arched brick work, running longitudinally, "rendered" to a fine face, to offer as little impediment to the upward drainage of the respired air as possible; these supplied with perforated glazed earthenware key-stones, divided horizontally into two compartments, the under half receiving the vitiated air from the lower ward, while the upper half supplies the ward over with pure air, through its perforated surface in the floor above, the former to be connected with a fire-place at the extremity of the building, which is to be constantly burning, and thereby extracting the respired atmosphere night and day; or the arches might be placed transversely across the ward, which would allow the foul air to escape on either side of the building, according to the manner in which the wind was blowing. The upper half of the earthenware key-stone communicates with the external air by small flues at short intervals, to introduce the cool fresh air into the ward. I firmly believe this would be sufficient for all healthful purposes, nor do I conceive that extraction shafts, fans, pumps, and contrivances of this sort are needed, when the building is designed at the outset with a view to sanitary results, and not built

haphazard, and patched up afterwards with all the extraordinary ventilating contrivances of the present day. So much, then, for the admission of cool fresh air and the extraction of warm impure air. There is also an arrangement for summer ventilation, which I think will add much to the comfort of patients. The windows are on both sides of the wards, opposite to each other, and are up to the ceiling line, so that in summer the upper sashes could be opened of windows opposite each other, which would thoroughly clear out the upper region of the ward, and impart a refreshing coolness to the apartment without condensing the vitiated atmosphere.

For the admission of "warmed fresh air," I have suggested that the external air passes into fire-stove chambers behind the stoves, and from thence to the wards in positions most convenient for its thorough diffusion.

The latrines, sculleries, bath-rooms, and washing-rooms, are all in an octagon tower at the end of each ward; and as these towers will always be at a higher temperature than the wards, it will be quite impossible that disagreeable effluvia should pass towards the patients in the wards, even supposing the double doors which are provided were both left open.

Independently of the large wards for twenty-five men each, there are smaller rooms for a less number of patients, besides an operating room to each block, with doctors' rooms, and the usual offices and apartments requisite for a military hospital.

In conclusion, I beg to say. I am extremely pleased that the designs proposed by me, under the orders of the Royal Engineer Department, for the hospital at Aldershot, should be found to be in accordance with the "suggestions" that you state have appeared in the *Builder*, as that has strengthened me in my opinion that the principles are correct, although at the same time I can assure you that I have not benefited by them, never having seen the "article" you have referred to, the general plan having been completed more than six months since. I may also state that I have explained the drawings to Miss Nightingale, who, in a communication with me, was pleased to say:—"I consider the ground plan as the most perfect example of the block system I have seen: the French and the Russians, ever before us in carrying out that which we ourselves have originated, are adopting this plan—*corps de bâtiments*—(for a great number of sick) universally. Yours is superior to the *Zarboisère* at Paris, in the greater distance between the blocks, and the better construction of the latrines."

As my professional connection with the Government terminates very shortly, I feel particularly gratified at having received the commendation of that lady, as well as others to whom I have had the pleasure of explaining my design, although it is only fair to state that there are points connected with ventilation upon which Miss Nightingale and myself partially differ.

F. WARBURTON STENT.

#### THE CARRARA MARBLE WORKS.

CARRARA, a place familiar to all sculptors and architects, with its inexhaustible supply of marble for the whole world, has hitherto been, as it were, unconscious of the improvements of the age, and modern machinery of any kind has been a thing unknown there, notwithstanding its great commerce with the whole civilized world. The sawing-mills are little better than a few huts, wherein the same appliances used 300 years ago in the shape of machinery are still in existence; for in Carrara, more than, perhaps, in any other part of Italy, the people are greatly averse to change or improvement of any kind. In all the marble-mills here, the same old wooden rude machinery exists, which, upon the same principle, did its work 300 years ago: the original wooden spiked cog-wheels, scoop water-wheels, and the rest, are still in motion,—hence the uneven, bad sawing that exists. Content to jog on as their forefathers did—jealous of innovations of any kind—the Carrara marble merchants (a peculiar people, by the way) are far behind the age, resisting to the utmost the application of those high mechanical attainments to which we have at the present day arrived. Time, however, must tell them that the introduction of the modern arts in machinery is for their own advantage. The commencement of the new era has, however, begun; and amongst all the old jinnack and rude modes of applying the great water power of this country, surmounting all difficulties (and they far from few), the energy of one mind has at length, amidst all the jealousies of parties and state duties upon machinery, made a revolution in the marble trade in Carrara. The extensive mills just erected by Mr. Wm. Walton in that city are the first step to the passing away of all things old; and the introduction of the most approved machinery must have its beneficial effect upon the whole building trade in general. The building in question is 160 feet long by 55 wide, containing twenty-eight sawing-



frames, each frame capable of holding 100 saws, making seventy direct cuts per minute. In one part stand the polishing-machines, lathes for turning columns, planing-machines, &c. Large travelling-crane travel the entire length of the building, bringing up the blocks and depositing them under the frames, and in like manner removing the cut slabs for exportation, which are adhesively put together so as to transport them in one block, thereby avoiding the great risk in breakage.

The whole of the machinery is of wrought and cast iron, the frames being supported by four cast-iron pillars each, over which are placed the sand and water boxes, which supply and regulate themselves when the machinery is in motion. The blocks, when under the operation of sawing, rest upon six-wheeled waggons, securely screwed down, thereby securing steady and even cutting, a thing so much desired by the marble trade. The whole of this large mass of machinery is put in motion from a Turbine water-wheel, only 5 feet 6 inches in diameter, having a direct fall of water of 18 feet. This wheel is placed under the factory, so that no motive power is visible save the shafts running through the building. The water is obtained from the river Carrione, and conveyed by an aqueduct, about a quarter of a mile long. The last arch of the aqueduct is curved, at a radius of eleven yards. This is the first undertaking of this magnitude that has been carried out in the Duchy of Modena, and may be considered as a new epoch in this dormant country. Few people can imagine the amount of opposition used against this enterprise, and the introduction of new machinery: there has been no invention that jealousy and animosity could bring out that has no then put in motion to retard and obstruct the works, and which nothing but a resolute and persevering mind could have overcome. The whole of the works have been erected by the spirited proprietor, Mr. William Walton, at a cost of 7,000*l*. The same gentleman has, we believe, offered a premium of 200*l*. for improvements, in the best mode of cutting and polishing marble.

#### THE NAMES OF SLATES.

We sometimes find, in our various and many-sided contemporary, *Notes and Queries*, items of curious knowledge belonging to our specialties. Here, for example, is a communication on slates:—

"The whimsical names now in use, 'Princesses, Duchesses, Countesses, and Ladies,' are said to have been given by General Warburton, the proprietor of some of the great quarries in North Wales about a century ago. Perhaps it is not generally known that before that time names still more whimsical were used. The following list is taken from that very extraordinary collection of curious information, a 'portable library,' as some former owner of my copy has called it,—Randall Holme's 'Academy of Armory and Blazon.' As Holme was a Cheshire man, we may be pretty sure that he gives us the names then used in the slate districts:—'Names of slates according to their several lengths:—Short Haghattee, Long Haghattee, Farwells, Chitts, Warnetts, Shorts, Shorts save one, or Short so won, Short Backs, Long Backs, Batchlers, Wivetts, Short Twelves, Long Twelves, Jenny why Jettest thou, Rogue why Winkest thou. The shortest slate is about 4 inches, all the rest exceed an inch, one in length from the other; sometimes less or more, according as the workman pleases.'—'Academy of Armory,' &c. b. iii. c. v. p. 265.

According to this explanation the 'Long Twelves' were about 16 inches in length, or 12 inches longer than 'Short Haghattees'; hence, probably, the name of 'Long Twelves.' The largest slates, 'Rogues,' must have been about 18 inches long. There is nothing said about the breadth. The largest slates now used, 'Princesses,' I believe are about 24 inches long. J. W. PHILLIPS."

#### Miscellanea.

OLD "TROLLOP" AGAIN.—Our good and graceful contemporary, the *Builder*, meditating among the tombs, throws the following stone at our poor parish:—Amongst the ludicrous and eccentric epitaphs, perhaps one of the *worst* is that at Gateshead, on Robert Trollop, architect of the Exchange and Town Court of Newcastle:—

Here lies Robert Trollop,  
Who made von stones roll up  
When death took his soul up,  
His body filled this hole up.

How often must we say that there is no such epitaph "at Gateshead"—and never was Trollop buried in our churchyard, but with no such epitaph. The *Builder's* quotation from Mr. Pettigrew belongs not to "pothumous literature," but was written as a joke while Trollop was in the flesh.—*Gateshead Observer*.

ACCIDENTS.—At the Thames-bank saw-mills a poor fellow, last week, had both of his arms cut off, and was carried to St. George's Hospital, to which a brother of his had just before been taken, after falling from a cab and receiving injuries of which he died, as also did the sawyer himself, shortly afterwards. Nervousness on account of the accident to his brother led to his own sad fate.—The bolt of a fly-wheel having got loose and dropped into the main gear wheel of the machinery of a foundry and machine-maker's at Halifax, last week, the fly-wheel was broken into numerous pieces, the boiler smashed, and the whole of the machinery reduced to a mass of ruins. Various persons were injured.

REPORT ON DRAINAGE, &c. AT KENSINGTON.—A report by Mr. James Broadbridge, the surveyor of St. Mary Abbots, Kensington, has been printed by authority of the vestry. From this document it appears that during the four or five years that the Kensington Improvement Act was in operation, from 1851 onwards, a great many improvements were effected, and that the total sum expended on paving alone was 9,024*l*. odd. The report enters into details as to the particular drainage and other works done since the passing of the Act. The total lengths of sewers in the parish and under the direction of the vestry are,—brick sewers, 27½ miles; pipe sewers, 7½ miles; and open sewers, 1½ miles. Mr. Broadbridge, as we know, is very active in his vocation.

ROYAL CORNWALL POLYTECHNIC SOCIETY.—This society will hold their exhibition on the 29th and following days, and are soliciting the loan of objects of interest. They announce a number of prizes, amongst them in the fine arts, competition in this department being restricted to amateurs. Premiums of one pound each are offered for the following subjects:—1. For the best-filled sketch-book from nature. 2. For the best series of six flowers from nature, in chalk or pencil. 3. For the best series of six sketches, in water colours, of different rocks, showing their jointed structure and characteristics. 4. For the best water-colour drawing of a mossy stone, the flower of the hydrangea, a primrose-plant natural size, or other suitable natural object. 5. For the best isometrical drawing of a building in the county. 6. For the best engraving on wood, or lithograph.

GIFT OF PUBLIC FOUNTAINS TO THE TOWN OF BLACKBURN.—Mr. Pilkington, mayor of Blackburn, has announced to the general purposes committee there that he will make the town a present of three public fountains. The large one will be placed to the right of the principal entrance to the park, another in the small reservoir at the foot of the artificial waterfall, and the third in the small sheet of water to the left of the large one. The park is fast approaching completion, and is visited by thousands, particularly on Sundays. The conduct of the working classes hitherto in the park is said to be admirable.

ALUMINIUM.—This new metal is still making hopeful progress. The *Mining Journal* states that Mr. F. Wm. Gerhard, of Trafalgar-square, has patented a simple and economic process for obtaining the metal, whereby it is produced at a considerably less expense than by the means heretofore practised. In this process hydrogen gas combines in an oven with the fluoride of aluminium, and forms hydro-fluoric acid, which acid is taken up by iron, and is thereby converted into fluoride of iron, whilst the resulting aluminium thus obtained remains in the metallic state in the bottom of trays containing the fluoride.

FEES, RE METROPOLITAN RUINOUS BUILDINGS.—Permit me to call your attention to the miserable scale of fees contemplated to repay services in regard to ruinous structures, by the Metropolitan Board. To form a correct judgment of the object, it is well first to consider for whom these services are to be performed, or rather, perhaps I should say, by whose neglect they are rendered necessary, in order to protect the lives of the occupants, that is to say, of those who pay the rent. They omit to do the necessary repairs to uphold the premises, possibly their own property, possibly held merely upon lease. Well, in commiseration for these very parties, the court are about to repay the competent and experienced professional men whom they employ in these arduous and responsible duties fees varying from five shillings to twenty*l*. The professional men would, in the ordinary course of such duties, receive many times these amounts. But to save those heartless landlords who jeopardise so many lives, they expect to repay the professional men *amplly* for their duties. The fact is, that the negligent parties ought to pay *full* professional fees. It is, in fact, a premium upon their neglect. And when once the fee is so hardly earned and due, how is it to be levied? There will be as much trouble in getting the fee as earning it. Pray go through the list, item by item, and expose the injustice of *rewarding* the responsible duties of first-rate professional men, *their own officers*, by such remuneration as mere beadle's fees.—ARCHITECT.

APPARATUS FOR ENTERING FOUL AIR WITH.—Mr. Kay, manager of the Gas Works in Dundee, has recently submitted to the Royal Scottish Society of Arts an invention which is thought likely to be useful in all cases where it is necessary for persons to enter places filled with gas, or choke-damp in any form, smoke, &c. It is a covering for the head, resembling a diver's hood, enabling the wearer to breathe fresh air supplied by a pipe from a distance, and its utility has been tested by Mr. Kay himself *having gone with it into a gasholder filled with gas, and remained there half an hour quite uninjured*. The Society of Arts in Edinburgh remitted to their Committee on Inventions to examine Mr. Kay's apparatus; and the committee report that the apparatus is capable of being used with great advantage, not only in gas works, but in wells, mines, cesspools, and brewers' and distillers' vats, being evidently as well adapted for a security against carbonic acid, or any other deleterious gas, as against carburetted hydrogen.

THE LONDON MASTER BAKERS' PENSION SOCIETY ASYLUM.—The foundation-stone of the almshouses to be erected for the reception of master bakers who had become in needy circumstances, was laid on the 5th instant. The site selected is contiguous to the Lee-bridge-road, about a mile from the station, and a short distance from Snarebrook. A piece of freehold land there has been purchased at a cost of 1,350*l*. upon which there is space to erect fifty-four almshouses, and a plot for that object, in the rustic Italian style of architecture, has been furnished by Mr. Knightley, architect, which, when carried out, will form three sides of a quadrangle, with towers in the rear of the two angles. At present, however, the funds only admit of a portion of the plan being carried out to the extent of ten almshouses, which have been contracted for by Mr. E. Clarke, of Tottenham, builder, at 2,270*l*.

MORE STRIKING OF HOUSES IN LANCASHIRE.—At Barnsley a short time since there was a considerable alarm in the neighbourhood of Wortley-street, from the foundations of a number of buildings having given way in consequence of the coal underneath having been got. Since then the buildings in that vicinity have further given way; and at Calendar works there an accident has occurred to the machinery, by pressure from the giving way of the foundations. Occurrences of this nature have previously taken place in Barnsley, but none of such magnitude as the present. The giving way of the buildings has been attended with such noises that the tenants have deserted their dwellings. Many buildings in Wilson's place have given way, but not nearly to the extent of those alluded to.

CAST IRON RAILWAY SLEEPERS.—A pamphlet has been published by the Permanent Way Company, Westminster, on cast-iron sleepers, pointing out their superiority over those of timber, especially under certain new forms, in which the metal is considered to be arranged to the best advantage, to prevent breakage, &c. It is calculated that the saving of the cast iron road, as compared with an ordinary timber road with a similar bearing surface, is 33*l*. 4*s*. per mile per annum; equal to 331,200*l*. on the whole mileage of the kingdom. Many of the early trials of cast iron sleepers, however, were by no means successful; but this, it is alleged, was from want of a proper disposal of the metal, and from the high and fluctuating prices of iron. Of late years the price of iron has been more moderate and steady, and if our home consumption of iron could be (profitably or usefully) made to supersede the present consumption of foreign timber for such a purpose as this, a national benefit would be realized. The idea of substituting iron of a proper form for sleepers, in the place of wood, which is so subject to decay, does seem to be a good one. The advantage, we should think, would be particularly obvious in tropical countries, as in India, where insects prey so rapidly on timber.

NEW GARDENS.—The new museum is now open. The gardens are in all their summer beauty and splendour: they are open free every week-day at one, Sundays, at two. The palm-house, museum, and fifteen other conservatories close at six; the botanic gardens at seven; the pleasure-grounds at eight. The Victoria regia is now blossoming in the tropical aquarium erected specially for it at a cost of 3,000 guineas.

THE BURNLEY SURVEYORSHIP.—Mr. J. Brierley having resigned the office of surveyor to the Burnley commissioners, in consequence of his appointment as surveyor to the Blackburn corporation, the streets and buildings committee reported that there were forty-three applicants for the office. Out of these the committee selected the following, and invited them to attend the general meeting.—Mr. William Colbran, Rugby; Mr. George Laing, Birmingham; Mr. Richard Charlesworth, Halifax; and Mr. William Young Hardie, Blackburn. Mr. William Colbran was specially recommended to the general meeting, and was elected to the office by a large majority.



# The Builder.

VOL. XV.—No. 75S.

**C**HALDEA is a land of mystery.\* The interest with which the recent excavations at Nineveh, and the remains of its ancient temples and palaces, have been regarded, has been not a little enhanced by the still more recent researches and discoveries at Birs Nimrud, or Babylon, Mugeyer or the Ur of the Chaldees, Warka, or the Erech of Nimrod, and other sites of ancient cities in Chaldea and Babylonia. From the frequent allusions to the three associated regions of Assyria, Babylonia, and Chaldea in the Bible, and from all that history, profane as well as sacred, discloses as to their ancient inhabitants, these researches and discoveries have conspired to render this district one of the most distinguished and most important, not only to ecclesiologists, but to archaeologists in general, throughout the whole of the civilised world. To every believer in our sacred records, indeed, this is even hallowed ground. Here, as we think could easily be shown, was (perhaps mystically) located that "Paradise of God," which, according to the Revelations, *still exists* (though no longer *here*), with its "tree of life in the midst" thereof;† just as, in subsequent ages, that heavenly "Canaan," which was but another name for the Paradise of God, was figuratively located only a little farther to the westward, in Palestine, the land of the Philistines, and to inherit which "the father of the faithful" was "led, by the Spirit of the Lord," out of the very region of the primitive Paradise itself,—out of "Ur of the Chaldees," which, strangely enough, is now believed to have been a city, if not a land, of the dead.‡

That the Garden of Eden, according to the Bible, occupied (figuratively or literally), in antediluvian times, that very site which, after the Flood, was known as Chaldea, we think can easily be shown from a little consideration of the four rivers which united at this "Garden of the Lord,"—this "God's Acre;" two of these being "the great rivers" Euphrates and Hiddekel (or Tigris), which do there unite; but our sole object in even hinting at such a conclusion *here*, is merely to indicate one of the chief of those sources of the peculiar interest with which we all regard the ancient Chaldea, Babylonia, and Assyria; as to the long-buried and forgotten architectural remains of which we

simply intend to present to our readers a few particulars, gleaned from the very interesting volume lately written by Mr. Loftus, who has explored and excavated some of the more important of their vast and sand-covered "heaps."

One of the most extraordinary circumstances connected with the recent excavations in Chaldea is the discovery that the whole of this desolate region is thickly studded with *cities of the dead*, sepulchral temples, and mounds containing myriads of terra-cotta, slipper-shaped coffins,—a circumstance all the more remarkable that, in the associated land of Assyria not a single tomb has ever been found. The obvious conclusion deduced by the enterprising excavators to whom we are indebted for a knowledge of these circumstances is, that, in all probability, Chaldea was the ancient burial-ground of Assyria itself, whence the dead were floated down the Tigris, like another Nile, to this land of the departed and the shades of Assyrian life. There are cities of the dead in this very "land of spirits," and to this very day, to which "the faithful" of the Persian people are sent, after death, from all parts of the Persian empire, and even from India, there to be buried with their fathers, on ground consecrated to that end from time immemorial, in the "marshes of God," as much of the land of Chaldea is specially called. Such cities of the dead are Nedjei or Meshid Ali, and Kerebella, on the western or Chaldean border of the Euphrates. The remains of ancient cities of a similar order which have been recently uncovered, lie farther to the south. Mugeyer and Warka are the modern names of the most important of these; but indeed the whole region of Lower or Southern Chaldea abounds in sepulchral cities and temples, of immense extent. The enormous accumulation of human remains at Warka proves that it was a peculiarly sacred spot, and that it was so esteemed for many centuries.

"It is difficult," says Mr. Loftus, "to convey anything like a correct notion of the piles upon piles of human relics which there utterly astound the beholder. Extending only the triangular space between the three principal ruins, the whole remainder of the platform, the whole space between the walls, and an unknown extent of desert beyond them, are everywhere filled with the bones and sepulchres of the dead. There is probably no other site in the world which can compare with Warka in this respect; even the tombs of ancient Thebes do not contain such an aggregate amount of mortality. From its foundation by Cruxus until finally abandoned by the Parthians—a period of probably 2,500 years—Warka appears to have been a sacred burial-place."

The relationship of Chaldea to Assyria in ancient times must therefore have been a very peculiar one. Can we not shed some little light upon that relationship by help of the sacred Scriptures? Though there is no passage that we can trace which clearly indicates that the Assyrians held Chaldea in the light of a sacred burial-ground, there is one that we have not seen quoted which does bespeak a peculiar relationship between Chaldea and Assyria, even apart from the fact that the Chaldeans seem to have been a priestly order of men in Assyria and Babylonia as well as Chaldea, whose duties were peculiarly spiritual and magical.\*

\* It is a curious fact that the word Chaldean (according to Cruden) means *demons*, or *daemons*, a word implying one dead to ordinary life, and possessed by a spirit, whether good or evil, as in the "Waren," or *daemonic* possession, practised in India even at the present day. The Chaldeans, therefore,—who are spoken of in connection with the magicians and others of the "wise men" at Babylon, and who responded, both for themselves and for the magicians and sorcerers, &c. when Nebuchadnezzar insisted, rather unreasonably, not only that they should interpret his dream, but also recall it to his memory,—appear to have stood, in relation to the magicians, nearly as, in our own country, Kelly did to Dr. Dee; the "magician" being Dee, and Kelly being his "seer," or oracle, to whom, as the God-possessed, or Spirit-quickened, the magician or priest put questions, and from whom he received responses. These ideas will tend, we trust, to clear up some of that great obscurity which all mittedly overshadows the name or title of "the Chaldeans" as a branch of the wise men or magi of ancient

"Behold the land of the Chaldeans! This people as a not till the Assyrian founded it for them; that dwell in the wilderness: they set up the towers thereof: they raised the palaces thereof: and he [the Assyrian] brought it to ruin."

The Assyrians then did found or establish Chaldea as a nation or a people,—a peculiar people indeed, from amongst whom came forth the Chaldean father of that peculiar people the Jews,—a spiritual people, who, ascetic-like, dwelt in the wilderness, yet, mason-like, set up the towers thereof, and raised the palaces thereof, and whence, indeed, went Asshur forth, and builded Nineveh itself and many other cities,—a sacred, priestly, yet masonic brotherhood, mysteriously associated with the dead in their coffins, as also with temples and towers, in the midst of which this priestly race presided over the funeral rites performed around these sacred shrines of the Assyrian people. Strange it seems to be that this very people should have brought these, *their own sacred temples and towers* as it were, as well as to their own venerated priesthood or magi, to ruin: yet doubtless it must have been to the Assyrian, as the Bible tells us, that the wreck we now behold is to be ascribed. And perhaps after all this is not to be wondered at when we consider that the Chaldeans at length became "a bitter and hasty nation," who "marched through the breadth of the land to possess the dwelling-places that were not theirs,"—that they became "terrible and dreadful,"—*demons indeed*,—who "came all for violence;"† and thus most justly came this violent tribe of military priests themselves to a violent end.

The ruins of Warka were at one time identified by Sir H. Rawlinson as the ancient Ur of the Chaldees, whence Abram the Chaldean migrated into Syria and Canaan, a valuable manuscript in his library determinately connecting the one with the other. During the excavations at Mugeyer, however, which was almost a neighbouring city to Warka, cylinders were found, upon which the name of "Hur" was inscribed; and since that event Sir Henry has regarded Mugeyer as the true Ur of the Chaldees, and Warka as the Erech of Nimrod. Mr. Loftus seems still to be inclined, notwithstanding the title of his book, to favour Sir H. Rawlinson's first idea, that Warka is Ur; or rather he is disposed to attribute the name Ur "to a district of the Chaldees, which included both the ruined sites of Warka and Mugeyer." And there is a reason for this, and perhaps for still more than this, of which neither Mr. Loftus nor Sir Henry Rawlinson appears to have taken cognizance. The word "Hur" is the root of the well-known word "hurra!" and of other forms of it, such as hri! hurri! hurrai! all of which, etymologists tell us, were exclamations originally denoting a vehement desire to go,—*"to Paradise! to Paradise!"* and were often shouted out in battle to imply contempt of DEATH and a vision of bliss beyond its awful precincts. "Hur" then meant "Paradise," and this very district of the dead was its

times; and of whom by no means disrespectful mention by the way, is made in the Bible,—at least of "the wisdom and knowledge" of those of Egypt, though exalted in their own line by Moses, as were those of Babylon by Daniel, the master of the magicians himself, "in whom was the spirit of the holy Gods," and who was named "Belteshazzar." The residence of the Chaldeans in cities of the dead is paralleled, even at the present day, in the instructions of Rudra to his disciples who desire to be translated out of "Pravritti," or the concursive or concentrative life that now is, into "Nirritti" or "Nirvana," the dispersive or irradiative state of paradisaical repose, in which the life of sorrow, or the life that now is, is dispersed, annihilated, or extinguished, like a fire put out at night. These disciples were ordered not to dwell, or at least to sleep or abide by night, in any other cities than those of the dead, and not to clothe themselves except in garments dragged from the tombs. In ancient times, too, we find Isaiah the prophet, speaking of those who "sacrifice in gardens, who remain among the graves, and lodge in the monuments." He also alludes to Jews who, in imitation of the heathen, went into the tombs and temples of idols to sleep there, and have dreams that might discover future events to them,—clear allusions to these very characters as the Chaldeans seem to have at length become, however emended, either as oracles, or priests, or as astronomers, they may perhaps have been.

\* Isaiah, xliii. 13.

† Hab. i. 6.

\* "Travels and Researches in Chaldea and Susiana; with an Account of Excavations at Warka, the Erech of Nimrod, and Shush, 'Shushan, the Palace' of Esther, in 1849-52." By W. K. Loftus, F.G.S., Nisbet and Co. 21, Berners-street, London. 1857.

† "To him that overcometh shall it be given to eat of the tree of life, which is in the midst of the Paradise of God."—Rev. ii. 7.

‡ Ezech was directed to Cumae, in Italy, as the region where *Ezech*, the land of spirits of the heathen, was to be found. The reason why seems to have been, because at Cumae, in her cave, the Sibyl lay entranced,—a God-possessed dead body, the soul of which had departed this life for a time, and entered the region of spirits. False religion being, at least to some extent, a *daemonic* mixture of the true, it may thus have been because at one time, as in the case of Abram himself, and his father, Terah, the true "oracles of God" were manifested, in a distinguished manner, at the union of the Euphrates and the Tigris, that it is said the true Paradise of God stood there, as indeed it must have done wherever these oracles were manifested; for he in whom the "Spirit" or "the Holy Ghost" is manifested, is "not in the flesh, but in the Spirit," or is *dead* in the flesh, but *quickened* by the Spirit, and to be quickened by the Spirit is to be "caught up" into "Paradise," hence our Lord at His "my passion," on the Cross, expressed the thief that that night (when he became dead in the flesh, but quickened by the Spirit) he would be with Him in "Paradise."

§ In a previous number (p. 411, note) we have given our reasons for this identification of the Hiddekel with the Tigris, which was anciently called the Daghele or Diglo, and is still known locally as the Dijli.



accredited site! Well therefore might the name of "Hur" be found there. More than that, the word "Houri," which Mr. Loftus, by the way, inadvertently, and without the slightest idea of any allusion to Hur, to Paradise, or to Chaldea, but still most properly, spells "Huri," denotes an angel of Paradise; so that Hur and its Huris denoted Paradise and its angels or spirits.\* The "Huri" of the Hindoos doubtless denotes much the same angelic or spiritual nature as the "Huri" of other eastern nations.† Even the "Haran" in which Abram's father, Terah, dwelt, would seem to have had something to do with the same interpretation as that of Hur. As for "Ur," we are told by Cruden and other commentators that words beginning or ending with this root denoted Light. Thus Uriel and Uriah meant "the Light of the Lord," and perhaps "Uruk" (the name of the builder both of Warka and of Mûgeyer) meant much the same: thus too the "Urim and thummim," by which "the oracles of God" were consulted, meant light and perfection; and according to all mystics, Christian or heathen, to be in Paradise, the divine abyss, divine spirit, or beatific vision, is to be resting or reposing, in death-like entrancement, "in the light," which too was a phrase well known in the ancient Eleusinian mysteries, as it even is in the modern freemasonry, associated also as it there is with the "high noon" of midnight—the time of rest and refreshment—in bliss—"filled with the spirit" or "the midnight sun," as the divinity of the Eleusinian mysteries was called, and who is no other than the sun of righteousness, the holy spirit of rest in glory, and the Lord himself of Paradise or the heavenly Jerusalem—Zion—and temple whose *sanctum sanctorum* "needs no candle neither light of the sun," since it is ever "in the light" of the holy Spirit of entrancing rest, or paradisaical and death-like repose in bliss or glory.

Whether Warka or Mûgeyer were the true Ur of the Chaldees, however, matters little to our present purpose. Warka appears to have been the city of the dead distinguished and patronised as such beyond all others as yet discovered. It is now, with its vicinity, one of the most consummate pictures of desolation. Mr. Loftus says, that can well be conceived. The very Arabs of the desert, with the exception of one wild and strange tribe, shun it as the *abode of evil spirits*, and none will dare to pass a single night upon the doleful spot.

The principal edifice or ruin, to some extent uncovered by Mr. Loftus, is called the Buwârîyya, and thence is visible an astonishing accumulation of mounds and ancient relics, surrounded by the traces of an earthen rampart. The principal or central ruin is that of a tower 200 feet square. A more interesting structure, however, is that called Wuswas, and contained in a spacious walled quadrangle, the eastern corner 840 feet from the central tower. This, like all the other buildings at Warka and Mûgeyer, points with one corner to the true north, an arrangement which seems to have prevailed generally in Chaldean architecture. It was at the Wuswas ruin that Mr. Loftus chiefly excavated. The façade to which his attention was given, afforded what he regards as the first glimpse of Babylonian architecture,—although Sir Henry Rawlinson considers it of post Babylonian date. It exhibited, says Mr.

Loftus, peculiarities so remarkable and *original*, as to pronounce at once its undoubted antiquity, and furnish a new page to the annals of architectural art. It measures 17½ feet in length, and in some places 23 feet of the height remains. It has long been a question whether the column was employed by the Babylonians as an architectural embellishment. The Wuswas façade, our author thinks, settles this point beyond dispute. Upon the lower portion of the edifice are groups of seven half columns, repeated seven times, rude in structure, but built of moulded semi-circular bricks, securely bonded to the wall. There is neither cornice, capital, nor base. The groups of columns are separated by dentated recesses, or chasings, 7 inches deep. This chasing, he remarks, occurs in many other Chaldean ruins, and is regarded as a chief characteristic of Babylonian architectural ornamentation.

The walls of Wuswas are so thick, that it was for some time mistaken for a solid mass. At length, however, the interior was reached. Every chamber was filled with rubbish, and two of them were excavated, but they contained no sculpture. Neither, indeed, has anything of special interest been as yet found in this interior, except a valuable ring, got by a negro named Wuswas, from whom the ruin was named; but this ring Mr. Loftus did not see.

The preconceived idea on which Mr. Loftus founds his conclusion as to the *original* nature of the Wuswas ruin, namely, that a rude and simple arrangement, without much ornamentation, must necessarily, or at least probably, be a very early one, is by no means a safe idea; and in the present instance we feel much more inclined to agree with Sir H. Lawrence than with Mr. Loftus.

Near the central enclosure, a very interesting and curious example of decorative architecture was found in the fragmentary remains of an edifice like the Wuswas. This was part of a wall, 30 feet long, and faced with, or rather entirely composed of, terra-cotta cones imbedded in cement, of mud mixed with chopped straw. These cones were fixed horizontally, with their circular bases facing outwards. Some had been dipped in red and black colour, and were arranged in various ornamental patterns, such as diamonds, triangles, zigzags, and stripes, which are said to have had a remarkably pleasing effect. The wall which these cones ornamented consisted of a plane surface 14 feet 10 inches long, broken away for a short space in the centre, and projecting 1 foot 9 inches beyond a series of half-columns, arranged precisely as in the Wuswas façade side by side. In ancient Egyptian tombs, similar but much larger cones are found, with hieroglyphs stamped upon their bases, several specimens of which are in the British Museum.

"They are supposed," says Mr. Loftus, "to have a sepulchral character, and to have been let into the wall at the entrance of the tomb, although they have never been observed in that position. The hieroglyphs are probably the names of the deceased. No marks or inscriptions occur on these Warka cones, but there is every reason to suppose that they were in a similar manner connected with the burial of the dead. The ascertained fact, before noticed, that the site was a vast cemetery, is strong presumptive evidence in favour of this conclusion.

Cones of the same kind are of frequent occurrence upon the ruins of the great platform, sometimes firmly fixed together in strong white plaster or cement, but no other building was observed with them *in situ*. There is, however, little doubt that several might be discovered by largely excavating in the mounds. Similar cones are found in many other ruins of undoubted Babylonian age, which, unlike Warka, have escaped being built upon by succeeding races. Mr. Taylor discovered them plentifully, both at Mûgeyer and Abû Shehrya, at which latter place they occurred 10 inches in length, composed of limestone and marble, and sometimes with a rim round the edge filled with copper. They were, undoubtedly, much used as an architectural decoration in Lower Chaldea, and always in connexion with sepulchral remains."

These cones remind one much not only of the cones in the hands of Egyptian and Assyrian priests, but of those used by the Buddhists of the present day, apparently as objects on which to fix the eye in that "contemplation" which

forms so distinguished a religious duty in Thibet, China, and India. The "sanctifying instrument" called the *dorje* or *torche*, and also used by the Buddhists, has conical extremities, and a very similar instrument appears in each hand of a human figure moulded in terra-cotta, as if in a coffin, or a vesica piscis, and engraved in Mr. Loftus's book: he calls these instruments maces.

Warka, says our author, is a complete mine for extraordinary and unheard-of modes of decoration in architecture. Within a stone's throw of the south-west façade of Wuswas, he found a curious building somewhat resembling the conebrick structure, but formed of conical vases, mouths outwards, which produce a strange effect.

But the locality at Warka which furnished the most valuable and interesting fruits of research, was a small detached mound 40 feet high, situated about half a mile south-east of the central ruin. Here a chamber was discovered measuring 40 feet long and 28 feet wide, the mud walls of which stood only 4 feet high, and had been covered with coloured plaster.

"It was a perfect museum of architectural scraps, of a highly instructive and curious character. The unbacked brick floor was literally piled with broken columns, capitals, cornices, and innumerable relics of rich internal decoration, which exhibited undoubted symptoms of Greek and Roman influence on Oriental taste. The smaller objects were wholly plaster; but the larger consisted of moulded bricks, thinly coated with white plaster: many of them were fantastically coloured.

Three of the capitals are Ionic; but the proportions of the volutes and other members are peculiar. A fourth description of small capital has peculiarities of its own, suggestive of the later Byzantine style. A large and elegant leaf rises from the necking, and bends under each corner of the abacus. Springing from behind a smaller curled leaf in the centre is the bust of a human figure, wearing the same preposterous head-dress which is characteristic of the slipper coffins and Parthian coins.

No columns were discovered to correspond with the larger capitals; but the walls were liberally adorned with small Ionic half-columns, with half-smooth, half-fluted shafts, which were highly coloured. The lower and smooth surfaces were diagonally striped with red, green, yellow, and black; the flutes being painted black, red, and yellow alternately, while the level ridges between them are left white. In some cases the flutes were quartered with the same colours.

Among the *débris* of smaller articles were bases of columns,—frizcs, with bunches of grapes alternating with leaves,—gradines, resembling those on the castles of the Nineveh *bas-reliefs*, but ornamented at the base with a conspicuous six-rayed star in a circle,—fragments of open screen-work, with complicated geometric designs of different patterns on the opposite sides (these are very peculiar, and differ materially from the arabesque),—and flakes of painted plaster from the walls, with fragments of small statuettes, coloured, and sometimes gilded.

It has long been a disputed question whence originated the germs of Saracenic architecture; but the prevalent opinion is that the Moslems, having no style of their own, adopted those which they found practised in the countries whither they carried their conquests, more especially the Byzantine. It is, nevertheless, remarkable that the same uniformity in richly-wrought tracery and geometric ornamentation prevails from India to Spain in Saracenic structures, which could only have arisen from a central point.

May we not suppose that the peculiarities of Saracenic architecture are due to a much earlier period, and that they originated with the Parthians, who succeeded the Greeks in the possession of Mesopotamia? Of this race we have, unfortunately, scarcely any memorials left."

Amongst various other interesting remains found at Warka and Sankara, were moulded bricks in spiral columns and cornet-like capitals. Serpentine and clay tablets were also found, and numerous small terra-cotta figures, jars, and jugs, from the coffin mounds, as also trinkets, clay seals, lamps, and lachrymatories.

The researches of Mr. Loftus and Sir F. W. Williams of Kars at Susan, the Palace, where columns and other valuables were found, are also highly interesting, but our space is now fully exhausted, and all we can do is to recommend our readers to purchase for themselves Mr. Loftus's volume, which they will find to be well worthy of perusal, though not very skillfully put together.

\* Angels "are all ministering spirits, sent forth to minister for them who shall be heirs of salvation."—Heb. i. 14.

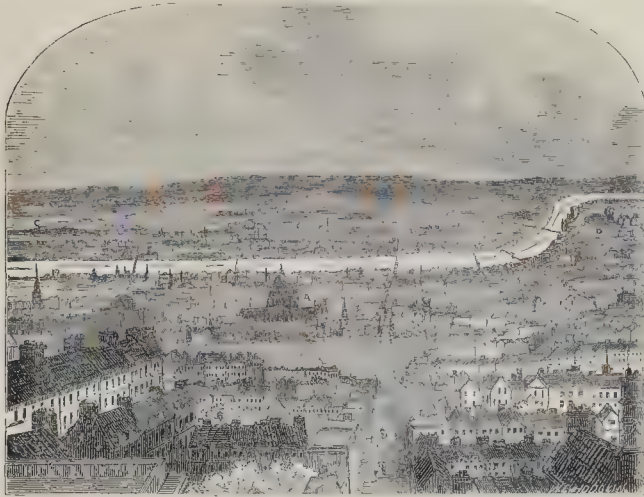
† "Huri," in Sanscrit, means Saviour, and "Harita," with the Brahmins, denotes "the visible tree of the universe, the *abode of perfection*,"—which, in fact, is the Paradise of God,—a tree,—and, like Jonah's gourd at Nineveh, an "abode,"—which is "seen" in a "grove," or garden, by "the holy sage" (or Magus) who is free from all loads, and *perfect in abstraction*. It has not this something to do with "the tree of life which is in the Paradise of God,"—the true "abode of perfection," and with the sacred tree of the Assyrian or Ninevite sculptures, to which the priests, magi, or holy sages, offer up the cones which they hold in their hands? Mr. Loftus alludes to this tree as "the deity in the form of the sacred tree." The offering up of the cone, if, like the Buddhist cones, it was used as an outward object of, or aid to, contemplation or contemplative abstraction, would well imply that "the holy sage" was "perfect" in that "abstraction," by means of which the soul was freed from the bonds of the earthly life, and "plunged into the divine abyss," or, in fact, translated, by an entrancement, into Paradise,—the divine "abode of perfection," such words as *Hierophant*, *Hieropolis*, and even *Hierosolyma* or Jerusalem, seem all to belong to those having *Hur* in their root, and all bore allusion to *Light* and a *Shen*, as it appears *Ur* itself did.



TWO ASPECTS OF LONDON.



"Look on this Picture"



"And on this."

TWO ASPECTS OF LONDON.

NOTWITHSTANDING the examples of the mighty Babylon, Nineveh, "Eternal Rome," and other famed cities of antiquity, we look forward with firm hope to the splendid future of London. This metropolis is, in our sight, growing in wealth, strength, and population. The dwellings of the poor are giving way to better buildings; and, ere a score of years are passed, it is probable that the sad condition of things which has been illustrated in these pages will have ceased to exist. Year after year the London houses are assuming a more important appearance,—a circumstance which may be readily proved by an examination of a few of the streets of various classes, built thirty or forty years ago. The warehouses in the City, the banks and other offices, are in many instances towering above their former height, and, instead of dingy flat brickwork, now present fronts of massive stonework and elaborated design. Our public structures are in like manner increasing in substance and extent: wise and kindly-intended institutions are springing into use: these and other indications of healthy progress assure us that London

is but approaching its prime strength, and that it will, as it has done for the last thousand years, continue to progress for long to come.

If the present condition of London is wonderful, its future hopeful, its rise and progress in ancient times have also an interest, which is rendered the more intense in consequence of the indistinct and dreamy records of the past.

We have before, on more than one occasion, referred briefly to the rise of London and to the surprising extent of ground which has, in the surrounding neighbourhood, been saved from marsh and water. In parts along Thames-street, which, in the days of Roman occupation, was the boundary of the Thames, we have noted the timber, piles, &c. which were used as a foundation for the houses of the conquerors, and as a means of saving land from the river.

This is old work, but in our days the same process may be seen going forward in the ship-building yards near the docks and elsewhere. We would, however, ask our readers to go with us back to a more remote period than that above mentioned—to a time when all the space which is now so thickly covered with vast

works, and occupied with living multitudes—was a watery waste as desolate as the neighbourhood of Babylon at the present day. Standing on a high part of Clerkenwell or Islington, it is easy to imagine the picture;—a foreground of sedges, reeds, and willows, and a sloping bank towards the Fleet river; then a stream of considerable magnitude. On the south, east, and west a space of water extends to the base of the higher lands, presenting the appearance of a large lake in which the channel of the Thames is not even defined. In the midst of the waters there may, however, be traced three portions of land which have risen by gradual degrees above the water: that nearest at hand is the site of the present city, the highest part of which is near St. Paul's. The little island to the right, B, has now grown into Westminster, and that to the left, C, is now occupied by Kent-street in the Borough—a spot on which many Roman and other remains have been discovered.

It is most interesting to wander in the various districts of London, and trace the evidence of the decrease of the water and the rise of the land. Sir Christopher Wren, at the time of excavating for the foundation of the present St. Paul's, made careful examination of the various layers of soil from the surface of his day to the bed of the London clay, and enables us to give a sketch of the various deposits.

	St. Paul's Churchyard.
	Miscellaneous Deposit.
	Hard Crust.
	Saxon Remains.
	Roman and Saxon Remains.
	Roman and British Remains.
	British Remains.
	Gravel, &c.
	Wet Sand.
	Dry Sand and Shells.
	London Clay.

Covering the London clay, the famous architect found shells, fine sand, and other indications which show the rise of the site until it presented somewhat the same appearance as the large shoals do which are still in course of formation in the Thames. Then come various other matters, and eventually evidences of the occupation and raised surface by man. Then appear the remains of different people, and marks of fire and buildings, which form a suggestive model of London's history.

By watching the numerous excavations which are being made from time to time, by a careful examination of different localities, and from the accounts of different writers, we gather distinct evidence of the truthfulness of our old picture.

It seems evident that London, or by whatever name the city was then known, had assumed considerable consequence before the erection of the river embankment—that great and mysterious work,—for it is not reasonable to suppose that what may be called the formation of the river would be undertaken without a very express purpose; and when we think of the extent of that work, and consider that so little is known of its origin, we cannot but contrast it with some of the trifling improvements of recent times.

After the embankment of the Thames, a considerable portion of what was once the lake must have been rendered comparatively dry. The city spread, but still extensive districts were flooded by every tide; even less than a century ago a part of Lambeth was daily under water; and eastward there were great marshes which were considered not worth cultivation. These undrained spaces had evidently an injurious effect on the health of London, and ague and some of the fevers peculiar to the Fens were common in the metropolis; but these have now disappeared, except in a few cases where they have been introduced from damp districts.

In order to give a more clear idea of the contrast of the past with the present, we annex a slight sketch of the same scene from one of the tall houses now built on the banks of the Fleet, near Bagnice-wells. The view of St. Paul's from here is very fine, and it will be a matter for future regret that the opportunity afforded by the late improvements in this valley has not been taken advantage of to open a direct line to the Cathedral.

FRAMES FOR ARCHITECTURAL PHOTOGRAPHS.—Have a good wide margin of white cardboard, glaze with patent plate glass, and let the frame be of dead gold a quarter of an inch wide. This, I think, will please your correspondent.—G. T.



STATEMENT BY MR. COCKERELL, R.A. ON THE WELLINGTON MONUMENT COMPETITION.

MR. EDITOR.—I have to acknowledge and to thank you for the interpretation you have been pleased to put upon my retirement from the adjudication of the prizes in the fine art competition for the Wellington monument, which, as you justly suggest, was grounded, first, on my doubts as to my own competency, though a well-known amateur of sculpture, to give judgment on an art not professionally my own; and, secondly, on my doubts as to the efficiency of a tribunal, on a technical and professional subject, without the aid of technical and professional counsel, so as to give satisfaction to the artists concerned and to the public generally,—for my isolated appointment on that commission cannot fairly be urged as supplying the professional element.

At the same time, as you have inferred, I deemed it my duty to the occasion, to my office as surveyor to St. Paul's Cathedral during more than thirty-two years, and as the original suggestor of the site adopted for the erection of that national monument, to offer every service, and advice in my power to the commissioners in that character, with reference to the harmonies of the cathedral architecture and of the special locality, though I gave no judgment on the relative merits of the designs. These scruples were submitted to my distinguished colleagues with all the zeal and loyalty I owe to the cause of art, and were listened to with the utmost candour; but circumstances preventing their acting upon them, I deemed it my duty to retire.

Of the imitative arts, the plastic is surely the most exalted in its conception, style, and composition. It ranks as the epic of those imaginative arts. Abstract, and grave, and rare in its genius, it exercises no less those rare qualities in the critic, far different from those he may bring to bear on the more popular art of painting. Enduring, like the architecture to which it is attached, it should be Catholic and of all times, harmonizing with its proportions, aiding its scale, and incorporated with its features.

The appropriateness of the symbols and the images amongst the many which present themselves in the illustration of the character and history of the great personage to be commemorated; the paucity of space, after all, to give expression and emphasis to the most important of these; the doing justice to those who have best contributed to these conclusions, by their thoughts and designs, and who so have led us to a juster estimate of the object to which we hope to arrive ultimately, is a delicate matter, on which we cannot be too scrupulous and deliberate. To aid in these, we want the counsels of the historical painter, the architect, the master of scenery, the learned sculptor,—no less than of the poet, the man of letters, the tasteful patron, and the accomplished man of the world. In these last the commission abounded: it was in the first that I could not but esteem that we were deficient; and it is certain that light can come only from the free discussion and interchange of thoughts amongst such persons as these.

The success of the system of competition depends primarily on the constitution of the tribunal appointed for the adjudication. This is the grand assurance of the integrity and the competency of the award, not only as doing exact justice to the public as respects the great object of the competition, but to the relative claims of those who have contributed their genius, experience, and expense towards that object. Without these secure foundations, the whole fabric falls to the ground, and our labours are fruitless and utterly abortive; adventurers alone will enter the chance medley; the ostentatious clap-net takes the place of the soundness of design; fashion prevails over the permanent principles of art; true taste is put to flight; and experience, ever modest and real, shrinks from a tribunal in which it will be scarcely heard, much less valued, in the face of garish and attractive pretensions. The veteran declines to expose himself to the mortification and the injustice of a low standard of criticism: the public thus loses the advantage of long labour and devout studies: new names alone appear on the list of candidates, and the celebrities disappear from

these most generous and interesting occasions: disgust and dissatisfaction generally follow.

Our illustrious neighbours in France largely practise the system of competition in the matters of fine art. Their tribunals are by a mixed commission. As with us, the leaders are selected from amongst the most distinguished and responsible public characters, understood to be *dilettanti* and amateurs; but they do not stop there, as we have done: they call in a large proportion of professional and technical members, reputed in their several academies;—lastly, men of literature and science, whose studies bear more or less on the subject of fine art. All these vote and discuss in perfect equality, as members of the tribunal.

The deference to scientific and artistic opinion, in a country where these qualifications are supreme, is carried to great lengths, and presents a remarkable contrast to our own, and the English members of the juries in Paris, 1855, were scandalized by the regulation which admitted into the juries the most distinguished competitors, who thus became judges in their own cause; and this was avowed by those who appointed them as necessary to guide the judgment of the leaders and less cultivated members of the jury. In Rome this principle is carried even further: with them the adage holds still, "*Cuique in sua arte credendum est.*" The sculptor does not admit the painter to the award, nor *vice versa*, much less the *dilettanti*, and the amateur.

But what shall we say of the practice of this country, in which gentlemen, patrons, *dilettanti*, and scholars alone are the judges? gentlemen, indeed, of whom we are justly proud, and to whom we defer as guarantees of the perfect honour and impartiality of the awards, but who from their loftier avocations must necessarily be deficient in the professional and technical considerations which are of scarcely secondary importance in the adjudication.

Sir, it must be felt by every one as degrading to our arts, to be subjected to the judgments alone of the *dilettanti*, and it is equally derogatory to the professor gifted by nature, and cultivated by the devotion of a life, to be dispensed with on these occasions of competition, and to have his judgment set aside as of no advantage and sometimes suspected. It is incomprehensible that in enlightened England, the determination of those professional merits, on great national occasions, by a committee of taste alone, should still hold amongst us.

None of us will deny the great respect and weight due to those high public characters, and our perfect satisfaction in the soundness of their leadership in competitions of all kinds; but their eminence in their special vocations cannot constitute them the all-sufficient judges of matters technical and professional; nor do they allow themselves this pretension in any other than questions of taste.

The profession of æsthetics is not to be treated as so light a matter when the glory and good repute of a country is in question, and when we are preparing to hand down to posterity a specimen of the understanding of this day in these matters. The very large sum proposed to be expended is not enough to purchase the wit and the taste required, much less is it necessary where these qualities can be found by a cheaper and more liberal method, a grave and enlightened discussion and criticism, with leisure and with learning, assisted by men of art and of thoughts in these higher departments.

All these considerations, as I have already said, I urged very respectfully on my distinguished colleagues, and I trust that the words of their report will sufficiently exhibit the candour with which they were received, as neither captious nor unfounded. Let us look to a future more enlightened practice in this particular, and I urge you, Mr. Editor, and the friends of true liberality, to enforce views which can alone lead to a right judgment in these glorious fine arts, and which have the sanction of all classical history, and especially of our illustrious neighbours on the Continent.

I cannot refrain from rejoicing with you at this moment in the unexampled liberality of those authorities who have originated these memorable competitions, to which I believe

no instances of equal splendour can be cited in history, in respect of occasion and subject, impartiality, public exhibition, and the splendour of the rewards held out to genius, both in honour and in pecuniary compensation. It would be lamentable indeed, that such generous and enlightened efforts should fail to attain their great results, which results we are all of us bound, at whatever cost of private feeling, to promote by every fair argument. I grieve that a principle which I hold as loyal to my profession should have prevented my co-operation with the distinguished commission amongst whom I had the honour to be associated in this last particular of adjudication, and to have appeared to offer any objection to the generous course of Government in favour of those fine arts which are so calculated to promote the honour and advantage of the country, and in which we all so heartily rejoice.—I have the honour to be, Mr. Editor, your most obedient humble servant,

C. R. COCKERELL.

#### THE WILTSHIRE ARCHEOLOGICAL SOCIETY AT BRADFORD.

BRADFORD, in Wiltshire, where the annual meeting of the Wiltshire Archeological and Natural History Society was held on the 11th, 12th, and 13th inst. is a picturesque and interesting town, and has a sufficient number of antiquities in and around it to fit it for such a meeting. The church, the free-school, the ancient barn, the bridge with what some antiquaries call a chapel on it, the "Duke's House," and many remnants of early domestic architecture discernible in the streets well deserve examination. Some of the views of the town, with houses and factories built on the hill-side and surrounded by trees, are very charming. The parish church gives the evidence of shallow flat buttresses against part of the chancel, and an apparent semicircular-headed opening in the same part of the church, long since filled up and white-washed over;—that it was founded in the time of the Norman, if not earlier; but the present structure is for the most part of the Perpendicular period. There is a recess on the south side of the chancel belonging to quite the end of the 14th century, ornamented with pinnacles and crockets, which have been restored, and containing the remains of a cross-legged effigy. There is a corresponding recess on the opposite side, but of plainer character. A hagioscope is formed to the extent of many feet through the north wall: the roof-loft has left its marks, and the chancel arch was once elaborately painted. A straight-headed panelled and ornamented recess in the north wall of the nave aisle, which once contained a crucifix and was decorated with colours, is peculiar. It is probably simply a tabernacle, but the pews which now shroud the lower part of it should be cleared away, so that it might be examined. One of the Perpendicular windows on the south side of the nave with a tracery transom is particularly good.

Within the free-school near the east end of the church will be found portions of a building displaying some of the characteristics attributed to work executed before the Conquest.—Sixteen in short. The semi-circular head of the doorway springs from an impost: the opening is wider at the floor than at the springing, while in another part of the building the pilaster-like arrangement of stones known in pre-Norman work is detectable.

The town was all alive, and had set itself to work to show it appreciated the visit of the society. Wreaths of evergreens spanned the streets, banners fluttered here and there, and one enthusiastic small tradesman, right Howell, had decorated the front of his house with an inscription formed in roses and dahlias, which read "Prosperity to the Archeological Society." The opening meeting was held at the Town-hall, a new building erected at some cost from the designs of Mr. Fuller, an architect, lately of Bath. It is of a mixed style, scarcely Elizabethan, and the lower part, where Gothic forms more strikingly prevail, is much better than the upper. The Rev. J. H. Bradney, who filled the presidential chair, and delivered the opening address, pointed out that while a "paper" must be strictly confined to the subject of which it treats, an address may be loose and rambling; and he certainly fully availed himself of the privilege,—sitting from Cicero to the Commissariat, and from the Old Testament to Tom Paine's bones. However, it was done with good humour, and one could discover a sound stratum underneath. The allusion to Cicero was to show his love for antiquity. When the province of Sicily, said the president, was assigned to Cicero, he made his excursions through the island to see everything in it that was worth seeing. In the course of his tour he comes to Syracuse—and there he has a particular object in view—he wants to see the tomb of Archi-



medes, for in the course of his studies he had read that his great geometrician was buried there, and that on that tomb a sphere and cylinder (emblematic of his pursuits) were engraven, and also some verses inscribed, and he was determined to verify the fact by actual inspection. He questions the great men of Syracuse, the magistrates, upon it, and to his surprise they can give him no information about it. They conduct him, however, to the gate of the city, where stood the greatest number of their old sculptures, and there he observed, in a spot overgrown with shrubs and briars, a small column—a columella he calls it—whose head just peeped above the bushes; and just fancy his delight: he sees the figures of the sphere and the cylinder upon it! And then he goes to work with a zeal and energy which could not be surpassed even by a member of the Wiltshire Archaeological Society; and at length he has the satisfaction of finding the verses inscribed on its base, and afterwards of indulging in a little of that boasting which was one of his weaknesses.

In the committee's report, which was read by the Rev. W. C. Lukis, one of the honorary secretaries, feeling reference was made to the death of Mr. Britton, a member of the society.

"Mr. Britton was personally known to you," continued the report, "and it is scarcely necessary for your committee to remind you of, for you will yourselves recollect, the very active part which, notwithstanding his great age, he has taken at each of these our annual meetings; not only attending himself, and always with a paper in his pocket, to be read if occasion required, but using all his powers to stir up others to a like activity in the cause. His energy and animation on those occasions will long remain impressed on our memories. There was a kind of youthful elasticity and playfulness about him, even at our general meeting at Warminster last year, only a few months before his decease, which gave us a hope that he would have been spared for some years longer. Moreover, it is not too much to state that, but for his indefatigable exertions in the cause of archaeology in his native county, this society would not have existed. In addition to the admirable sketch of his life, which appeared in the last number of our Magazine, and a very excellent portrait of him, which will appear in the forthcoming number, our society is collecting subscriptions from its members and others towards erecting a memorial in the church of his native parish, Kingston St. Michael, and also for providing a small annuity for his widow, to either or both of which your committee would recommend your subscriptions. We may add that the Institute of British Architects also contemplate placing a monumental memorial (we believe an incised brass) in Salisbury Cathedral."

The Rev. W. H. Jones, Vicar of Bradford, then read an interesting paper on the "History of Bradford," stating, amongst other things—first,—That the Romans began to visit this locality about seventy or eighty years after the final subjugation of Britain by Claudius, A.D. 62; that the period when they were most numerous here was from about A.D. 250 to within some thirty years of their leaving Britain altogether; and that, at that period (say about the end of the fourth century) they began to leave the immediate neighbourhood. Second.—That as most of the coins have been found in the upper part of the town, in what is now called Badbury, there was the Roman settlement. This spot, situated at the top of a hill, almost inaccessible at that time on the south or west, was just such a one as we should, from the customs of the Romans, have expected them to select, and it was the nearest point to Bath, in which place we know they clustered in great numbers. In clearing out a well, a few years ago, he understood that large numbers of short swords, a ring, and other things were discovered; but he had never seen any of them, nor heard so exact a description of them as to enable a correct judgment to be formed as to their age. In the same field there is still the appearance of earthworks, which, a few years ago, were distinctly traceable on some of the adjoining pieces of ground, before they were partitioned off as gardens and fields, and then levelled. The common name that is given to the field is the "Bed and Bolster," which, if the hypothesis be true, may be a homely, but certainly not altogether an inexpressive description of the *vallum* and its corresponding *agger* in a Roman encampment.

Aldhelm built a monastery at Bradford. Mr. Jones said,—The site was most probably near to the north-east end of the present church, a spot of ground there still bearing the name of the Abbey Yard. Perhaps a portion of what now is the Charity or Free School (of which we have spoken) formed part of the Old Monastery, for you can see at a glance, that what is now the entrance to the school is a modern addition to some more ancient building. That small arcade of semicircular arches which you may observe in the south wall (though it may have

possibly been built in comparatively modern times), does not look unlike a memorial of what the Old Anglo-Saxon Monastery may have been. An examination of the interior of the building, a short time ago, revealed the fragment of an arch, a large portion of which had been cut away, and which may have been the entrance to some large hall, or, perhaps, chapel. The two antique figures of angels which are now fixed above the present entrance to the school-house may fairly be deemed ecclesiastical decorations. They were found imbedded in the wall at the upper part of this arch that I have just alluded to, one on either side, the whole of the central part of the arch having been cut away for the purpose of introducing a large stack of chimneys. There may have been originally a central subject, which, together with the figures of angels, formed the ornament of the tympanum of the doorway leading to some building, the purpose of which can only now be a subject of conjecture.

Of the "chapel" on the bridge, Mr. Jones said,— "Leland, who visited our town in 1540, speaks of the bridge, which, he says, had nine arches of stone, but does not allude to the chapel. There have been some who have thought that it was merely a toll-house for the collection of Pontagium—a contribution for maintaining and re-edifying a bridge. Aubrey, however (who wrote 200 years ago), says expressly, 'Here is a strong and handsome bridge in the midst of which is a little chapel, as at Bath, for messe.' So that no doubt its object was to contain the image of the patron saint, and to receive at once the devotions and alms of passers-by, the latter being probably given to the support of the hospital at the bridge-foot. Murray, in his hand-book, calls it St. Lawrence's Chapel, upon what authority I know not. I have endeavoured, as yet in vain, to ascertain the truth in this matter. The Bridge Chapel at Bath was dedicated to St. Catharine. As Murray goes on, in his account of Bradford, to tell us that by the Reform Bill we acquired the right of sending two members to Parliament, and yet adds immediately that Bradford has slender claims to historic notice, I fear that we can expect but slender justice from such a chronicler, and I, for one, am not much inclined to pin my faith to him in his assertion concerning the dedication of our Bridge Chapel." The growth of the town through the wool trade—for, as Leland writes, "The town of Bradford standeth by cloth making,"—was of course traced and illustrated, but we have not space to pursue it. Suffice it that the Vicar's paper gave great pleasure to the meeting.

To this followed a paper by Mr. Matcham, on the bearing of the antiquities of Malta on the history of Stonehenge. Views of structures brought to light in Malta, were exhibited to show their likeness to Stonehenge, and other similar monuments. There could be no reasonable doubt, he thought, as to the nation which erected these structures, for, independent of the tradition of the Maltese, Diodorus Siculus writes, "Melita (Malta) is a colony of the Phœnicians, who, after they had extended their mercantile adventures even to the western ocean, had a place of safety in this island on account of the commodiousness of its ports and its harbour in a deep sea." Indeed, we might conclude that the name itself, though said by classic writers to be derived from the nymph Melita, or from the greek *μηλι* or honey (which is not a product of the island), is no other than the Phœnician word *Melita*, a place of refuge or sanctuary. The Carthaginians, their successors, "Tyrii colere coloniam," possessed Malta 402 years before our era. From the superior antiquity and earlier civilization of these nations, we might, therefore, safely conclude that the Hazler Chen and the Mamlein were temples erected in honour of the national religion of Phœnicia for the celebration of these rites which it prescribed; although (as in similar cases) heroes and overgrown sometimes received sepulture within their walls. Monuments of this description still remain on the Phœnician coast, and have been noticed by a late traveller in that country. Mr. Matcham continued.—The five to six tribles which form the ellipse of that edifice, and which he had elsewhere endeavoured to show were dedicated to the five intercalary days and their presiding deities, were doubtless to be ascribed to the same founders. In its completion and ulterior destination, he believed that a great solar temple, dedicated to the Phœnician Hercules, or the sun, might be contemplated on Stonehenge; the trioliths, whilst representing the three principal deities of Samothrace, also indicating the same Hercules—the Her-cul—universal light—the Melcartus, the discoverer of British tin; who, as we learn from Sammes, is represented by the heathen hieroglyphers as looking through chinks or crevices, with this motto, "Omnia vident,"—all seeing. Nor is it improbable that the Hazler Chen was dedicated to the same deity, and that the various configurations of the great luminary, and the apparent courses of the heavenly bodies might hereafter be discerned, in

its intricate conformation, "a mighty maze, and not without a plan."

At the dinner which followed the meeting, and whereas Mr. Sothron Estcourt, M.P. presided, and did his "spiriting" very pleasantly and ably, this paper led to a passage of arms. The chairman, in the course of the evening, said Mr. Matcham had reversed what he had always considered the current of history: "He has put so much doubt into my mind," went on the chairman, "that whereas I always thought that the farthest point of my pedigree was hidden amongst the Saxons, I am half inclined now to think I have got Phœnician blood in my veins. Of course I am not presumptuous enough to suppose there is any relationship between myself and the great Hannibal. I am content simply with being told, that whereas you, Mr. Estcourt, have always supposed that your ancestor was either a Norman or a Saxon,—he it known, if you have fancied anything of this kind, you are utterly wrong; Stonehenge is a proof that you have Phœnician blood in your veins; you come originally from Carthage, and most likely it was some relation of yours that originally started from Tyre and Sidon with Queen Dido." And so he drank Mr. Matcham's health. And then that gentleman, in a tone which made people believe that he did not exactly like the banter, admitted the possibility of Mr. Estcourt's descent from Hannibal; and, as the latter gentleman is a captain in the Wiltshire Yeomanry Cavalry, congratulated the regiment on having such noble military blood in its ranks.

At a conversation, held after the dinner, a paper on Avebury, by Mr. William Long of Bath, was read, and one on Medieval Houses in Wilts, by Mr. Parker; after which, the Rev. J. Wilkinson sketched out the next day's excursion. When the morning came, Mr. Wilkinson headed the party, and performed prodigies of horsemanship in the meritorious endeavour to keep them to their time and enable them to get through the work. Of what was seen, however, we must speak in another number. Right glorious were the woods that day, and many recollected that

"The groves were God's first temples."

#### THE WELLINGTON MONUMENT IN ST. PAUL'S.

I HAVE read with much pleasure the excellent remarks on this subject in your last week's number. The interest you take in the subject may induce you to insert the following.

All that was mortal of our two great naval and military heroes, who, at the commencement of this century, turned back the tide of war from these shores,—Nelson and Wellington,—now rest side by side in the crypt beneath the dome of St. Paul's. Memory will ever connect them together, especially in St. Paul's. Does not good judgment point to their historic parity being emphasised in marble as well as in the page of history? Monuments are the emblems of history, and sculpture unites with the chisel as literature with the pen. The monument of Nelson, from the hand of Flaxman, exists on one side of the entrance to the choir in St. Paul's. Does not taste indicate that of Wellington to occupy the opposite place? That of Cornwallis now fills the space, but he whom it records is not buried beneath it, and why might it not be removed to a corresponding site on the west side of the dome?

At any rate, and under all aspects, this would be the popular spot for the monument to Wellington; but it is the more evidently judicious now, inasmuch as the sculptural resources of this country and Europe have been called on to produce a design for the memorial suitable to the place that was proposed in the conditions of the competition, namely, the open arch between the nave and aisle to the north-west of the dome. Eighty-three models were sent in, and not one is recommended to be carried out. Is this the fault of the sculptors? Not so. There were many beautiful things there, but the choice of the site was incorrect, and no treatment of it can be satisfactory.

The truth was, the sum of the sun suggested has, from the first, embarrassed the whole affair; 20,000*l.* were felt to be too much to expend in any situation akin to that already occupied by the memorials of Cornwallis, Nelson, &c.; and so a new kind of site was indicated, which was deemed to afford scope for the expenditure, and thus a place was chosen in the cathedral, which Sir Christopher Wren would, in my belief, never have sanctioned for the purpose. That great architect left spaces on the solais of the cathedral to be duly embellished, but not the spaces of his noble arches, &c. to be tampered with and filled up, so as to intercept the vistas of his magnificent structure. There were three marked ways, as evidenced by the eighty-three models, in which this open space was liable to be treated by the different artists. *Firstly*, the treating the whole arch as the field (like a niche), not to be filled up of course, but to be treated; *secondly*, that only the square



lenceath the springings was to be treated; and, *thirdly*, making the monument *pervious*. Of these three the last is the best for the architecture, but the worse for the monument, for there is a great window at the back (in the wall of the aisle), and even if the glass of this were painted (which certainly might do some good), still everything in the way of statues would look black against it, and be seen most indistinctly. The same defect would rest with a low monument, and a high one would block up the space too much. A monument should be a solid substantial work, but any solid substantial work would be *in the way* in the space; and a *pervious* one, or a low one, would have but a mean effect, and would be wretchedly lighted. Thus, therefore, in this case, either the architecture or sculpture must be sacrificed, and that to the tune of 20,000!.

The public must take care that they are not visited again by another great botch like the Nelson column, which was also regulated by noble lords, and not by those specially fitted to arbitrate in such matters. The authorities, in putting forth the conditions for the Wellington monument, do not appear to have known whether the arch were a fitting place or no, at least if we are to take the conditions and the report of awards together. The eighty-three models pretty well illustrate that the arch is not a fitting place. Surely it is not too late to choose another? If the monument to Wellington be eventually made to pair with that of Nelson, something under 10,000, will be sufficient for the work (few of the memorials already erected in St. Paul's have exceeded 5,000, and the embarrassing 20,000 might be split into two manageable amounts, and what is not required for the St. Paul's monument might be applied to some open air one, worthy of the duke, say near the Horse Guards.

EPSILON.

#### THE AWARD ON THE WELLINGTON MONUMENT DESIGNS.

Now that the committee appointed to adjudicate upon the Wellington models have returned their verdict, it cannot fail to strike the public as a singular act of injustice, not to say *mala fides*, towards the unsuccessful exhibitors, to find, from the express avowal of the committee themselves, that their selections have been made wholly irrespective of the suitability of the models chosen to the *locus* and position which the Wellington monument is intended to occupy. Surely the committee must have been aware of the terms upon which public competition was originally invited. These terms were announced beforehand, and had especial reference to the site of the monument and the character of the edifice in which it was to be erected. Now the circumstance that these conditions were not only lost sight of, but virtually and ostensibly ignored, was calculated in the highest degree to prejudice the success of those candidates who had executed their designs with special regard to the particular locality indicated to them by the First Commissioner of Public Works. Hence the injustice. Again, if the models selected will not subserve the contemplated purpose, what are they good for? Nay, the fitness of the judges in such a case may well be questioned, if they are unable (as they say they are) to decide whether the models are suited to the locality or not.

There is then, I conceive, good cause for a protest (if indeed such a protest could avail much) on the part of the profession against the principle on which the committee made their selection, in leaving out of view some important conditions of the problem—conditions, too, which had an evident and predominating influence over many of the works of art which are now exhibited at Westminster Hall. But what should be done in such a case? It would seem that those who are at the head of the profession should speak out—if not for themselves, at least for others. Of course such men as Gibson can afford to treat such matters with indifference. But why does not Mr. Bell (Nos. 57 and 60) declare his mind? Surely *he* has some reason to be dissatisfied. Again there is Mr. Thomas (No. 68), whose model attracted marked attention: does he not feel aggrieved? And lastly, Mrs. Birnie Philp, whose model (No. 13) was so elaborate and conspicuous, no cause of complaint? But the fact is, the members of the profession generally are unwilling to take any steps in the matter from motives of delicacy, lest they should be looked upon as disappointed men and “grumblers,” and so they are forced to acquiesce in the verdict that has been pronounced. AMATEUR.

SIR CHARLES EASTLAKE has drawn up a report on certain minor galleries of pictures which exist in London, for the benefit of the parliamentary commissioners. The report, besides serving its special purpose, contains much curious information on old portraits and pictures, and on City companies.

#### THOUGHTS ON THE DESIGNS FOR THE WELLINGTON MONUMENTS.

THERE are three modes of treating monumental subjects,—the allegorical, the historical, and the religious. The allegorical is generally supposed to be the most elegant and poetic; the historical the most practically instructive; the religious the most impressive. In the allegorical, the effigy or statue of the illustrious deceased is often but a secondary object in the group. His virtues, represented in stone or marble, attract the regards of the spectator more than the figure of the hero in which they are supposed to have dwelt, and this necessary result of fine statuary conceptions of valour, fortitude, prudencies, &c. produces often a depreciatory comparison of the man himself whom the nation delighteth to honour. It has also the inherent defect of requiring explanation, or valour may be confounded with fortitude, prudence with some kindred virtue. The expression of valour or of fortitude, in peculiar and fine human faces may be known to artists, and a few great observers of the influence of these virtues on the exterior man; but the general public will require to be told “this is intended for Fortitude,” “this for Valour,” &c. All such explanations weaken the force of the combination, and introduce criticism as a poetical propriety, when the mind wants full moral impression. Hence allegory, with modern Christians, is almost always weak. Amongst the Greeks they had their unquestionable Minervas and Mercurys, the well-known deified types of Wisdom and Eloquence, and when these sacred embodiments of goddesses and gods were made parts of a public monument to the memory of an illustrious warrior or citizen, they carried with them all the expression requisite to convey his peculiar claims to remembrance to every beholder. But with us who believe in one God, the great bestower of all mental powers, as well as all physical blessings, there are no such means of communicating an instantaneous poetic impression that the distinguished dead was remarkable for eloquence or valour, except the plain, straightforward one of an epitaph. The allegorical mode, the clove, seems not applicable to our times and the general conceptions of the national mind. We find that in the Middle Ages, when warriors fought especially under the banner of the Cross, their monuments contained this fact asserted in very simple language. It was the one which constituted all their praise, or in which all other distinctions were lost—and they lie on their biers, with hands uplifted, asserting no claim whatever to be surrounded by *attributive* figures of Valour, Justice, or Mercy. This is the simply religious and impressive mode of monumental erections. I believe few persons have looked on such monuments without feeling their simplicity to be more affecting than all the poetic episodes which could be written in artistic language, in the elaborate hieroglyphics of the virtues crowded round our modern tombs! Such groups, at all events, are not calculated for churches,—then the praise of God, not the praise of man, is to be proclaimed, more especially the praise of deeds, which, however they may have consolidated the power of a particular country, may be regarded by many as totally at variance with the spirit of the Christian religion preached in that very edifice. If these actions be regarded as nationally worthy of praise, on account of the merit of valour or prudence which they display, a building should be specially erected for the reception of such statuary as would demonstrate the national respect for the bravery, the eloquence, or the patriotism which these magnates manifested,—and let it be called in plain, but elegant English, “The Temple of the Illustrious.” But leaving this suggestion for the present, I would pass to the individual subject of this discussion.

Many of the designs, if compared with the views here (but with all due deference enunciated), will appear totally unfit for erection in the temples of Most High. Figures of Fame blowing the trumpet over the heads of the spectators to the praise of the departed, with a retinue of embodied attributes surrounding the base of the monument, or otherwise distributed, will not be regarded as a satisfactory exposition of national god sense and religious reverence in relation to the subject. The Star-Monument seems peculiarly unfit for the House of God, and almost reminds us of the expression, the “Star of your God Remphan,” associated with another City of revolting character in Sacred Writ. All such conceptions of the forms in which homage should be offered to patriotism or valour should not be permitted to enter the sanctuary of the Lord Jehovah. But if it still be desirable to introduce into the cathedral where the hero is buried a monument expressive of this fact, let it be historical but also religious. Let him repose upon his bier under a canopy not too elaborate, and let some of his chief and trusted companions stand round musing of the end of all greatness: one in the attitude of prayer might with good effect be introduced. Thus moral truth, biographical

and historical fact, and religious sentiment would be seamlessly combined, and the labours of the sculptor would convey, instead of fanciful shapes of non-existent beings, the veritable features of those who shared the great warrior's deeds, and rejoiced in the long years of prosperity with which they were crowned.

I trust these few remarks may not be considered presumptuous; they are, indeed, offered with much deference, and in the hope that other and greater minds may be disposed to bring the light of their own reflections to bear on a matter which has much to do with the character of our national taste, and the hereafter of sculpture as an educational aid to the intellect of future generations.

Allegorical flatteries, as they cannot be made pleasingly comprehensible, as they are read with painful hesitation, are, therefore, neither consistent with the honour of God nor the enlightenment of man, and should, I venture to suggest, be eschewed altogether. In an age that knows nothing, happily, of mythology, as an creed that does not relish allegory, the historical and the religious are sure to be welcomed by every heart; and these two are assuredly sufficient for the employment of the highest faculties of the professor of sculpture. We have so many, too, whose powers are of the best order, that it would be quite a subject of regret to give their minds a false bias by a faulty choice on this great occasion: the sublime dignity of Lough, the exquisite delicacy and feeling of Macdowell, the beauty of Bailey, and the grace of Marshall, with the varied excellencies of many others that might be named, should render us careful to afford on these gifted spirits an opportunity of manifesting their innate love of historic truth and genuine piety. These minds *must* have such a love, and with this conviction let the educated portion of the nation labour to render their heaven-bestowed powers available truly to honour God, and clearly to instruct man.

S. E. MILES.

#### FOREIGN INTELLIGENCE.

*The Dome of Cologne.*—The report of the Central Building Commission mentions that the receipts for the half-year ending, amounted to the large sum of 32,000 thalers. It is characteristic of the times, that some of the Jewish firms of Cologne begin to contribute considerably towards the restoration of the huge cathedral.

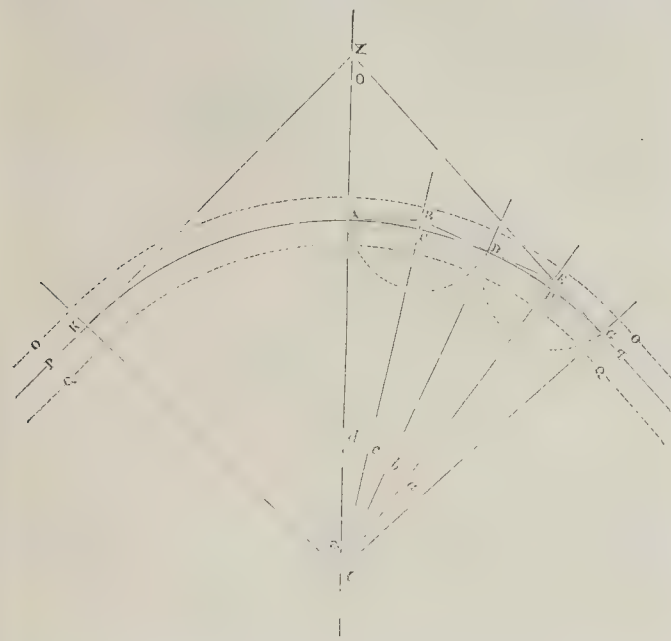
*Paris.*—*A huge Hippodrome.*—The French Government has decided on building a huge Hippodrome, to afford room to 25,000 people: 15,000 soldiers will be admitted free, as a sort of antidote against the immorality and intemperance prevalent in that class: 10,000 persons are to be admitted at a small entrance fee, just to cover the expenses of the establishment. There are to be horse races and other equestrian exercises, as well as athletic (gymnastic) games. . . .

*Paris.*—*Palais des Archives.*—This French Record-office occupies the place of the Hôtel of the Duke de Soubise, originally erected in 1697. His successor, Duke Rohan Soubise, had it ornamented by the first architect of the age, as well as by sculpture of Coustou, and paintings of Natoire, Carle Vanloo, &c., which made it one of the finest palaces of the French capital. The revolution made it public property, and being appropriated in 1808 to the collection of States' records, various improvements were effected in the course of time. In 1838, Messrs. Dubois and Dalory were named architects of the Palais des Archives, and one million of francs was expended in ameliorations and restorations. M. Greuter also was associated to these labours, and another million expended between 1841 and 1845. Few Parisian buildings present a similar character of solidity and firmness, the walls being constructed of hewn stones. The floors are of iron and pottery; the roof is also of iron, covered with zinc. Two huge reservoirs convey thither, through 500 metres of tubes, the waters of the Loire, which terminate in ten fountains, being an ample protection in cases of fire. All these works have made another grant of one and a half millions of francs necessary. The works now in progress comprise the restoration of the buildings, forming the front towards the Rue du Chaume, and the repairing the fountain called du Paradis.

*FALL OF A HOUSE IN THE CITY.*—Near the parish church of St. Nicholas, Fish-street-hill, are a number of extremely old houses, some of which were in a dilapidated condition. Amongst them was No. 4, lately in the occupation of Mr. Kingham, baker. Between the houses Nos. 3 and 4 is a narrow passage, leading to Moore's buildings, inhabited by a number of poor families. Shortly after midnight the inhabitants of the other houses were thrown into an awful state of consternation in consequence of a fearful crash taking place resembling a clap of thunder. The house No. 4, had fallen.



## ON TRACING CURVED TUNNELS.



In tracing the various trigonometrical lines for fixing with precision the different points required to be determined in the axis of a curved tunnel, it is needless to say that great care is necessary. If the lines are started wrongly in the first instance, the error will continue through the whole length of the tunnel, and the point of exit not arrive at the position required; or if the tunnel should be worked at both ends at once, and by shafts at the same time, as generally happens, serious inconvenience and expense will be incurred in attempting to rectify the original errors committed on commencing the curve.

The arithmetical operations for calculating the various lines, angles, and positions of the fixed points in the axis of the tunnel are neither long nor difficult, and do not require any complex algebraic, or other formula, either to work out or demonstrate.

It is not the object of the present paper to enter into the preliminary steps necessary for determining the position of the axis of the tunnel on the general plan; these are assumed to be complete on the detailed plans made for construction of the line of railway; neither is there any intention of treating, generally, of tunnels and tunnelling. It will be confined to pointing out a short and simple method of finding the required lines from the given data, and showing briefly the method of using them afterwards to trace the commencing points of the axis of the tunnel, of course, underground; for the same lines and points traced on the surface are of no great use to the miners underneath, although they are useful for occasionally testing the accuracy of the back lines, or fixed points, used for directing the miners in their work, and keeping them in a right direction.

It is assumed that the detailed plans are made complete, and from them and by calculation, the radius of the curve is determined, the development of the curve, the length of the tangents, and the angle or semi-angle between them, which are also required for fixing the points of an ordinary ground curve, and also forms the principal data from which the lines required for tracing the tunnel are to be deduced.

In the annexed diagram the line K, A, C, D, F, G, is the development of the curve along the centre line or axis of the tunnel. The dotted lines OQ denote the width of the proposed excavation for the tunnel, which is much exaggerated here, for the sake of distinctness. The lines YK and YG are the two tangents to the curve, their prolongation being the axis of the straight portion of line of railway, the curved tunnel, in this case, commencing at the tangent points G and K; the length of the tunnel here being assumed as equal to the whole length of the curve, which, however, is not always the case, as the tunnel may commence and finish at any other part of the curve within the tangent points, or be continued beyond these points, along the straight part of the line.

The object sought is the means of fixing accurately a series of points, G, K, D, C, A, on the axis of the curve; in the diagram these points are only marked on one side, as the same lines and points apply equally for the other, as in the subsequent operations the lines and angles are mere repetitions of one another. To effect this purpose we must find the length of the line GE, the sub-tangent; the length of the line FE; the angle GEF, and its double, GED: these lines being once determined, all the other lines and angles are precisely the same.

It is obvious from the nature of the question and the diagram, that the length of the two required lines, GE and EF, are in practice limited by the formation, width, or excavation of the tunnel; because if the sub-tangent, GE, is taken too long, the line EF will be longer than the half width of the tunnel, and, consequently, useless for all practical purposes.

As the series of sub-tangents form a polygon circumscribing the axis of the tunnel, it is evident that if these lines are taken too long, it will not be possible to set out the lines EF and BC underground as the excavation progresses, because if they are equal to the half width of the tunnel, there will not be sufficient room for the engineer to operate between the instrument and the flank walls of the excavation; they must, therefore, be so chosen, as to be less than the semi-transverse formation width of the tunnel.

It will save time and trouble if, in the first instance, this line is determined approximately, either by a few rough calculations, or by drawing the curve to a sufficiently large scale, and marking thereon the first sub-tangent GE, and the line EF, from which its approximate length is readily obtained. From this approximation it will be easy to determine into how many parts the semi-angle  $\phi$ , or the curve AG, had best be divided into, so as to give the line EF of convenient length is using within the narrow limits of the tunnel.

In the diagram the semi-development of the axis of the curve is divided into four parts only, for the sake of distinctness; in practice, however, the number will depend on the circumstances of the case, the radius, and width of the excavation.

In general, the greater the number of fixed points in the curve the better; but there is a limit to this, for if too numerous, the respective lines and angles will be so small that considerable difficulty will be experienced in operating on the ground, or rather, underground, in setting out the lines. All that is required is to get these lines of lengths suitable for easy operation in the works, so that they may be readily traced, and the angles easily set out by the theodolite.

From the detailed plans, and from the nature of the question we have given,—

$\theta$  = the semi-angle between the tangents.

GX = the length of the tangent.

YG = the radius of the curve, as well as the length of the curve, and the right angle YGX.

From these two angles the third angle,  $\phi$ , is found:  $\phi = 180^\circ - (YGX + GXY)$ , or,  $\phi = 90^\circ - \theta$ ;  $90^\circ : 0 : 0$

In the diagram the curve is subdivided into four equal parts; consequently, each of the small angles,  $a, b, c, d$ , one-fourth of the angle  $\phi$ , and generally the small angles, are equal to  $\phi$  divided by the number of divisions into which it is found practically convenient to operate with the tangents of these angles.

In the first small sector, YEG, we know the small angle,  $a$ , the right angle, YGE, and the radius, YG, to find the sub-tangent, GE, and the hypothenuse, YE, from which to find the short line, FE.

If now we take the line YG as the radius to the angle  $a$ , GF is the tangent of the angle  $a$ , and YE the secant of the same angle in terms of the radius of curvature of the tunnel.

Hence we have— $EG = YG \times \tan. a$ ,

$YE = YG \times \sec. a$ ,

$FE = YE - YG$ ,

$= YE - \text{radius};$

or, having found the line GE in terms of the radius we have  $YE^2 = YG^2 + EG^2$ , which may be used as a check to verify the other computations.

Knowing the radius of curvature and numerical length of tangent GX, the bisectrix XY is known from the same formula for  $YX^2 = YG^2 + GX^2$  and  $AX = YX - \text{radius}$ .

By the principle of geometry it is shown that

$KX^2 = YX \times AX$

$= (2 \text{ rad.} + AX) \times AX$ .

The next operation is to find the angle GEF, which is easily done, as we know the small angle  $a$ , and the right angle YGE, to find the third angle  $= 90^\circ - a$ , the double of which gives the angle DEG contained by the two sub-tangents DE and EG. We are now in possession of all we require, for we know the lengths of the lines EG and EF, and the semi-angle FEG, and its double DEG; for by the construction of the diagram, the four angles  $a, b, c, d$ , are equal to each other, the lines GE, ED, DB, BA are each equal, BC and EF are equal, and the angles GED, DBA are equal: so that all these lines and angles are repetitions of each other, which may thus be continued through the whole length of the curve, and the points G, F, D, C, A by means of them traced on the centre line of the tunnel, or axis of the curve.

By means of these simple formula the required lines are easily determined, and their arithmetical values found in terms of the radius, whatever that may be. These lines and angles once determined, it is not a difficult operation to fix the necessary points and guiding lines on the ground, to insure the accurate position of the various points on the axis of the tunnel as the work progresses; great care and frequent verification, however, being necessary to guard against any deviation, either from derangement of the standard points or negligence of the overlookers.

From the preceding observations, the following rules may be deduced:—

To find the length EG on the main tangent to the curve: multiply the radius of the curve by the tangent of the small angle  $a$ , and the result is the length of the sub-tangent in terms of the radius, which line forms one of the equal sides of the polygon circumscribing the curve.

To find the length of the line EF, which fixes the point F on the axis of the tunnel: multiply the radius of one curve by the secant of the angle  $a$ , and from the result subtract the radius, the difference is the length required of the bisectrix of the angle GED. These two operations give the arithmetical results required, but to avoid tedious multiplications logarithms are most convenient for use.

The following from the Combe Esure cutting on the Beziers Railway, France, which was commenced as a tunnel, but subsequently changed to an open cutting, to get stuff for a heavy bank 60 feet deep, containing upwards of 100,000 yards, may be taken as an example.

Radius of the curve .....	400
Angle between tangents .....	$98^\circ 48'$
Half this angle $= \theta$ .....	$46^\circ 54'$
Angle at the centre $= 90^\circ -$	
$46^\circ 54' =$ .....	$43^\circ 6'$
Log. tangent $43^\circ 6'$ .....	9.9711754
Log. radius 400 .....	2.6020600
Log. tangent GX .....	2.5732354
Tangent GX .....	374.316

The half-length, or development of the curve, is equal to the length of a circular arc of  $40^\circ 8'$ , multiplied by the radius,  $= 7523269 \times 400 = 3008947$ , and consequently the length of the whole curve  $= 601788$  in terms of the radius.

In this case the angle at the centre, AYG, and, consequently, the length of the curve, was divided into eight equal parts, thus giving eight short



sub-tangents or lines, G E, E D, D B, B A, and four equal lines, corresponding with E F, B C, in the diagram, which for reasons already explained is only divided into four equal parts: so that in this example we are enabled to fix nine points in the axis of the curve corresponding with G, F, D, C, A, in a length of curve of 300,894 metres.

As the angle at the centre, in this example, was divided into eight parts, we have,—

Angle at centre =  $43^{\circ} 6'$ ;

$\frac{1}{8}$  angle at centre,  $= a = 5^{\circ} 23' 15''$

Then  $G E = \text{radius} \times \text{tangent } a$ .

Log. tangent,  $5^{\circ} 23' 15'' = 8.9720244$

Log. radius, 400 = 2.6020600

Log. tangent G E = 1.5746793

Tangent G E = 37.556

Also  $Y E = Y E \times \secant a$ ;

or,  $Y E = \sqrt{Y G^2 + E G^2}$

$= \sqrt{161410 = 401.7587}$ ;

then  $F E = Y E - Y F = Y E - \text{radius}$ ,

$= 401.7587 - 400 = 1.7587$ .

For the bisectrix we have  $Y X = \sqrt{\text{rad.}^2 + \text{tangent}^2}$   
or,  $Y X = (2 r d + A X \times A X)$

$= 547.828$ ;

and  $A X = Y X - X A = 147.828$ .

Then, for the angle G E F, we have,

$G E F = 90^{\circ} - 5^{\circ} 23' 15''$

$= 84^{\circ} 36' 45''$

G E D, the double,  $= 169^{\circ} 13' 30''$

This angle enables us to fix the point F, and determines the direction of the second line, D E, which is a tangent, to the curve at D: we are now in possession of all the elements, which may be collected, and arranged as follows:—

Radius of the curve.....	400
Bisectrix X Y .....	547.828
Line A X .....	147.828
Tangent G X .....	374.316
Length of curve .....	601.788
Angle between tangents .....	$93^{\circ} 48'$
$\frac{1}{8}$ angle $= \theta$ .....	$46^{\circ} 54'$
Angle $\phi$ at centre .....	$43^{\circ} 6'$
Angle Y E G .....	$84^{\circ} 36' 45''$
The double D E G .....	$169^{\circ} 13' 30''$
Angles $a, b, c, \&c.$ .....	$5^{\circ} 23' 15''$
Sub-tangent E G .....	37.556
Secant or line Y E .....	401.7587
Line E F .....	1.75877

In the example in question, the extreme width of the excavation, including the thickness of the walls on both sides, was 5750 metres, the tunnel being made for a single track only, whence the half width is 2875 metres; consequently, the line E F must be less than this quantity to allow room for the engineer to operate between his instrument and the back walls of the excavation, when he has to set out the angle D E G, and its bisecting line E F, to determine the two points D and F on the axis of the curve; in this case, it is 1.578 metres, being 1.297 metre less than the semi-transverse axis of the excavation for the tunnel, which is amply sufficient to allow free scope for his operations.

The method of using these lines and angles is sufficiently simple. The line P X being the axis of the straight part of the railway, and G the commencement of the curve, in which the tunnel is placed, the point G must be accurately and permanently fixed, with two or three of the back points, in the direction P on the axis of the railway, so as to be able to refer to them when necessary to verify the line G E in the works.

To trace the curve, we proceed as follows:—Continue the line P G in the exact direction P E, and measure off the length G E, as found from previous calculations, and fix a permanent mark at E. Place the theodolite at E, and set off very exactly the angle G E D, which fixes the direction of the second line E D, when with the instrument prolonged double its length to the point B. Divide the angle D E G in two equal parts, and from the central fixed mark E, set off the length E F, and F will be the second point on the curve,—and when the work has progressed to B, repeat the operation and so on, for all the other points. Considerable care and accurate verification of the various lines and angles are required to prevent errors creeping into the work. The permanent bench marks are generally square dressed stones, of suitable size, firmly fixed in the ground, two intersecting diagonals being legibly marked on the face, the point of intersection of these lines being the centre of the fixed point required.

From the nature of the question, the line G E is always small in comparison with the radius of curvature, and the line E F still more so; hence, as an intermediate check to the work, if necessary, we may find other points between F and G on the axis. Suppose we measure off on the sub-tangent G E

points at any given equal distance apart from each other, we may easily find the off-sets from those points on the sub-tangent to the curve, measured at right angles to the sub-tangent: for if we make  $\pi =$  (equal to the first given off-set), roll the radius R, at distance measured on the sub-tangent  $\delta$ , we know that approximately  $\pi = \frac{\delta}{2R} =$  length of first off-set, and

$\pi' = \frac{\delta^2}{R}$  = to the second, third, &c. off-sets: hence

these minute quantities may be readily found, and two or three into minute points marked on the curve, to check the excavation as it progresses, and thus verify the work step by step, when the principal lines are once well determined and securely fixed.

The length of the line, or chord, uniting the points D and G (not shown in the diagram) may be readily found, for we know the angle D E G and its two including sides to find the remaining side, as the two other angles are already known lines, which may be useful in testing the work.

By way of illustration, the following tunnels, partly straight and partly curved, are given, as executed under C. Hutton Gregory, esq. Engineer-in-chief, Mr. T. J. Hay, resident, on the Grasse-Sas Railway, in the south of France.

	Radius of Curve, Metres.	Curved Part, Metres.	Straight Part, Metres.
L'Aire Raymond...	300	116	508
Four à Chaux .....	300	283.77	"
Tourbielle .....	300	102.15	"
Vebre .....	300	38.61	43.35
St. Raphael .....	300	237.20	"
Camette .....	300	85.88	537.19

Petay—straight tunnel, length 147.72 metres; the four principal shafts being respectively 72.63; 76.58; 79.40; and 109.53 metres deep; and Combe Escure, commenced as a tunnel, but subsequently changed into an open cutting of 300 metres radius, and 601.788 in length.

In conclusion, it may be observed that this system of sub-tangents applies equally well for the trace of ordinary curves on a railway, as the off-sets are never far removed from the curve, and may be chosen of convenient lengths for operation in the field; and since each process is a repetition of the first in every respect, it will be easy and expeditious in practice with a good instrument.

JOSEPH LOCKWOOD.

#### ANCIENT ARMS AND ARMOUR.

ANCIENT arms and armour afford to the inquiring and artistic mind many points of great interest, and may be studied with much advantage. There is a singularly fine collection, as we have already said, amongst the Ari-treasures at Manchester, partly from Goodrich Court, and partly from the Tower. A well-known authority on the subject is contributing some papers on this collection, with comments, to the *Manchester Guardian*, and we have made some gleanings from these, confining ourselves to anecdotes and observations of general application. On the subject of ancient arms and armour, says the writer, nothing but the most confused and erroneous ideas existed at the commencement of the present century. Francis Grose had published (1786-1801) his military antiquities, full of valuable documents and false deductions. Joseph Strutt, the most laborious and unassuming of archaeologists, had scattered here and there throughout his voluminous works, important facts without systematic arrangement or scientific investigation. It remained for Sir Samuel (then Doctor) Meyrick to collect, to examine, to sift, to classify, and chronologically marshal all these and numberless other evidences, and to produce, as the result of his enthusiastic yet cautious labour, his "Critical Inquiry into Ancient Arms and Armour," which, despite the imperfections almost unavoidable to the first publication of an extensive work upon a forgotten art and an abstruse subject, increased by the peculiarly disadvantageous circumstances under which it passed through the press, will continue to be the grammar of the English student in this branch of archaeology. The practical knowledge Sir Samuel eventually derived from the accumulation and examination of existing specimens of the weapons and personal defences of our ancestors, was communicated some twenty years afterwards to the antiquarian world in two quarto volumes, entitled "Engraved Illustrations of Ancient Arms and Armour" (London, 1833).

The plan Sir Samuel Meyrick pursued in this particular investigation is one which cannot be too strongly recommended to all critical inquirers. He appropriated certain drawers to certain centuries, and threw into each, as he made or acquired them, notes and authorities, engravings, drawings, tracings, &c. which appeared to appertain to such particular periods. Having thus in the course of many years

collected an immense mass of material, he sat patiently down to examine and compare the dated and undoubted evidences with those supposed to belong to the same eras. By this test he was enabled to correct so erroneous date, and to recognise a particular fashion, to detect fraud, and to rectify misconception. Every thing that did not tally with the general features of the age to which it had been assigned was rejected from that compartment, and, if genuine, speedily found its proper place in another. Shrewd, cautious, indefatigable, warped by no theory, misled by no assertion, he toiled on in pursuit of truth, his veneration for which, in all things, was the finest point in his character. Due to this acknowledgment is to his memory, particularly from the writer of this article, it would not have been obtruded upon the reader, did it not furnish one of the strongest guarantees for the integrity and instructiveness of the collection about to be described.

A few corroded sword-blades, bosses of shields, and a spur or two, form the sum total of the military remains as yet discovered of the S. xvi. the Danes, and the Normans. Of their personal ornaments, their manuscripts, drawings, and furniture, there exist ample and rich collections; but from the perishable nature of their body armour, which was principally composed of rings or small plates, of various forms, studded upon leather or linen, no authentic specimen has descended to us. Within the last ten years four or five helmets of the twelfth and thirteenth centuries have been discovered; but previous to the death of Sir Samuel Meyrick, in 1845, no armour was known to exist in England of a date earlier than that of the helmet and gauntlets of Edward the Black Prince, preserved in good condition rather than good guardianship, in Canterbury Cathedral.

There is a beautiful ivory saddle at Manchester, engraved all over with love scenes in old German, and the figures of the two personages whose sentiments they express, carved in high relief and in the costume of the time, recalling Chaucer's description,—

"His saddle was of whale's bone,"

such being in the middle ages the ordinary name for ivory, which had become familiar to the Normans originally by the use made of the tusk of the walrus or sea-horse, and whose descendants continued to apply to elephantine ivory the ancient term for all similar material. At the entrance is also to be seen the morning star, a formidable weapon, used from the earliest times to the reign of Henry VIII. and still carried by the watchmen in Norway; and specimens of the two-handed sword, which seems to have been first used in England about the commencement of the fifteenth century, and remained in fashion to the middle of the sixteenth.

Although the era of complete plate is assigned with good reason to the reign of Henry V. and the armour of that time possessed characteristics which could not in any case be mistaken, it is a singular fact, that in no public or private collection in England, France, or Germany, that is known to the writer, nor in the works that have been published illustrating the imperial and royal armories of Russia, Spain, and Sardinia, is there to be found a suit which could be confidently ascribed to an earlier date than 1425. The tilting helmet, saddle, and shield of Henry V. the tilting helmet, saddle, and shield of Henry V. of mould in rust and dust on Oakenford Abbey, and of sight, over his tomb in Westminster Abbey, and helmets and spurs of that period are to be met with occasionally. Two bycincts remain at Goodrich Court, and one of similar form to them will be seen in the armoury on the north side of the nave, but not a fragment of the long steel coats that bore the brunt at Hæfleur or Agincourt have been as yet identified. In the Tower of London, in the Musée d'Artillerie at Paris, the Rust-Kammer at Dresden, and the Ambras Collection at Vienna, the earliest suits present the same features as those to be observed in the mounted knight as Goodrich Court, referred to. The headpiece is the salade (so called from the Italian *celata*), introduced to England apparently in the reign of Henry VI. though the basinet continued to be worn with and without the vizor. The peculiarity of the salade consists in its covering the upper half of the face, a horizontal aperture being made for the sight, as in the earlier tilting helmets, and projecting considerably behind, where it terminates in a peak like the knight's chapeau, which was usually worn over it. The lower portion of the visage is guarded by a piece called the hauss-col, rising above the chin, and almost meeting the rim of the salade. The breast and back-plates are of exquisite form and workmanship: the former consists of three pieces, independent of the taces (as the plates were called below the waist), and the latter of four, not including the skirt, and is fluted in the most tasteful manner, imitating the gatherings of some textile fabric. The sollerets, or steel shoes, are sharply pointed (a distinguishing characteristic of this epoch), and the outlines of all the pieces extremely elegant. It is of German manufacture. On the left



arm is a fine shield, also German: the notch on the side was called the *bouche*, and was made for the passage of the lance. It does not appear before the reign of Henry IV. in England. The left thigh is protected by what English antiquaries call a socket (a fashion peculiarly German), the ornamentation of which induces us to attribute it to the same period as the suit.

Looking at the lobster-tailed casques, backs, breasts, and tassels, worn by the cavaliers and Roundheads in the civil wars, and, while contemplating the single and triple-barred helmets of this period, a circumstance is recalled to our memory which may not be without its lesson. Sir David Wilkie did the writer of these lines the honour of consulting him respecting his elaborate picture of John Knox Preaching the Reformation. He was desirous, he said, of being very correct in the costume he had introduced, and requested a candid opinion upon it, the picture being then finished, and ready for removal to the Royal Academy for the purpose of exhibition. On its being pointed out to him that he had introduced in the gallery of the church military personages wearing the barred helmets of the time of Charles I. in the reign of Mary Stuart, he replied that his reason for so doing was, that these persons were to be supposed as having visited the church with a desire to be unknown; and yet he had actually selected—more in the spirit of an Irishman than of a Scotchman—the open head-piece of the seventeenth century, through the bars of which the face was distinctly visible, in preference to the helmet of the sixteenth, the closed vizor of which would have defied scrutiny! The glaring absurdity of this anachronism was, notwithstanding, allowed by the great painter to remain, and to be disseminated by the burin of the engraver, although it might have been remedied in half an hour, with as much advantage to the effect of the picture as to its historical accuracy.

This anecdote "reminds us," as an inveterate story-teller would say, of one more creditable to the taste and intelligence of another Royal Academician. Mr. A. Cooper's "Battle of Bosworth" graces, by permission of the Earl of Durham, the walls of the Gallery of Modern Artists in this Exhibition (No. 195). While at work upon it the painter consulted Sir Samuel Meyrick as to how King Richard III.'s horse should be caparisoned. "In silk housings embroidered with the royal arms," was the answer, "covering the steel from his ears to his hoofs." "Oh!" exclaimed the mortified artist, "that will never do for me; my principal object is to paint White Surrey, and if I cover him from head to foot, as you describe, I may as well not paint him at all." "But," rejoined the antiquary, "you tell me the moment you have chosen is that in which Richard made his last desperate charge and slew Sir John Cheney, Richmond's standard-bearer. Now, as this was at the close of the battle, the caparisons of the horse would probably by that time have been cut and torn to shreds, and the colour and anatomy of the horse in that case might be rendered sufficiently visible for your purpose." The true artist jumped at the suggestion. Look, reader, at the result: the silken housings rent to ribbons streaming in the wind add action to the horse, tell a terrible tale of the fury of the fight, and completely satisfy the archaeologist, while they display the peculiar genius of the painter, and give additional effect to the picture.

Amongst the most interesting specimens of firearms will be found the dragon, so called from the head represented at the muzzle, and from the use of which the troops now known as dragoons derived their name, a hand mortar of the time of Elizabeth, for throwing grenades, a snaphaunce, a blunderbuss, wheel-lock pistols, and dags of various dates, and a fine pair of pistols by Lazzarino Cammuzzo.

The baton of the renowned Duke of Alva, presented to him by Philip II. of Spain, is of steel, hollow, to contain the musc-eroll of an army, and covered outside with Arabic numerals in gold, with divisions of silver on a raised ground. These are the results of calculations, according to the system of warfare in the sixteenth century, by which the general is apprised what number of men would occupy any given space. Some phrases in the French language are supposed to allude to this description of numerical truncheon, such as "*Etien bien assés de son baton*," *obtenir son objet par le tour de baton*, and "*Etien reduit au baton blanc*," i.e. to his last shift by the exhaustion or obliteration of the calculations.

[The writer himself, who will venture to say, is not of this opinion, for these phrases have evidently no special reference to this description of truncheon.]

In commenting on the North Armoury, from the tower and elsewhere, the writer speaks of some length of a suit (against the staircase screen) made for Henry Prince of Wales, the eldest son of James I. whose early death was so universally lamented. It is the identical one in which he is painted in the well-known full-length portrait, by Van Somers, at Hampton Court,

which, it is much to be regretted, is not amongst the historical portraits exhibited from that palace. It is profusely decorated with the royal badges of England, France, and Scotland, the rose, the fleur-de-lys, and thistle, as well as the letters H. P. conjoined under a coronet, the chanfron for the horse's head having the prince's arms in full, gilt and enamelled. An extra gauntlet for the right hand, belonging to this suit, is in the Meyrick collection (glass case), and an extra helmet is placed at its feet, while it is surrounded by a complete set of tilting-pieces (*pièces de renfort*) and an extra vam-plate for the lance. On the left-hand of the figure is the long-bridled gauntlet. This chivalric young prince, who is said to have been "in armour frequently five and six times a day," applied, at the early age of ten, to Colonel Edmonds, to send him a suit from Holland; and in 1607 the Dauphin, son of Henry IV. of France, sent him a suit well gilt and enamelled, together with pistols and a sword of the same kind, and armour for a horse. Three years later, 1610, on being created Prince of Wales, he caused a challenge to be given to all the knights in Great Britain, under the name of Meliades, Lord of the Isles; and on the day appointed, assisted only by the Duke of Lennox, the Earls of Arundel and Southampton, Lord Hay, Sir Thomas Somerset, and Sir Richard Preston, his instructor in arms, sustained the combat against fifty-six earls, barons, knights, and esquires; Prince Henry himself receiving thirty-two pushes of the pike, and about 360 strokes of the sword; being then not quite sixteen years of age. Sir Samuel Meyrick, who was anxious to identify the relic which he had acquired, remarks, that from the above circumstances of most of Prince Henry's armour being sent from abroad, the impression would be that this suit was of foreign manufacture; but there is in the State-paper Office an original warrant, ordering the payment of the sum of 200*l.* the balance of 340*l.* for a rich suit of armour made for Henry Prince of Wales, dated July 11, 1614, he having died on the 6th of November, 1612. This document is directed by King James I. to the commissioners for the exercise of the office of High Treasurer of England, and states that "whereas there was made in the office of our armory at Greenwich, by William Pickeringe, our master workman there, one rich armour, with all pieces complete, fairly gilt and graven, by the commandment of our late deere sonne Prince Henry, which armour was worth (as we are informed) the somme of three hundred and forty poundes only, soe as there remaineth due unto him the somme of two hundred poundes;" therefore they are ordered to discharge the same forthwith. Now, as the suits sent from Holland and France, in 1604 and 1607, were made for Prince Henry at the ages of 10 and 13, the size of the one before us renders it exceedingly probable that we have here actually the "rich armour, with all pieces complete, fairly gilt and graven," made by William Pickeringe, at Greenwich, when the prince was in his eighteenth year, and which was ordered by him most likely with a view to some grand chivalric entertainment in honour of the visit of the Elector Palatine, the affianced husband of his sister Elizabeth, whose nuptials, however, he did not live to celebrate. In 1660 we have, apparently, another notice of this superb suit, which seems to have been amongst those originally kept in the gallery at Greenwich, but afterwards removed to the Tower; for in an inventory taken in that year by order of a commission issued by Charles II. we find "upon a horse statue of wood, one complete tilting armour cap-piece, richly gilt, port graven, pat damaske, made for Prince Henry, with two gauntlets and one gilt grand guard, the horse furniture being one shaffronne of the same sort." The mention of two gauntlets is interesting, because it evidently implies two extra gauntlets, as they are coupled with the grand guard, the armour being previously described as complete cap-piece, which it would not be without gauntlets. We know where the extra right-hand gauntlet is. The other, it is probable, was an extra bridle gauntlet.

At the conclusion of his papers, the writer points to the two armouries in the Exhibition of Art Treasures at Manchester, as the first attempt to make such collections instructive, by familiarising the eye to the gradual progression of form and ornament. The first-Kammer at Dresden, the Musée d'Artillerie at Paris, and other similar museums, are merely large storerooms, the valuable contents of which are more or less picturesquely displayed. In the Tower of London, Sir Samuel Meyrick, some years ago, succeeded in obtaining permission to abolish the most glaring absurdities, and to place the mounted suits in the horse armory in their true order, but on the singular condition that names of historical personages should be appended to them all, whether with or without any reasonable foundation for such appropriation; and this childish practice is persevered in, to the obvious depreciation of the value of such suits as can actually be assigned to their original owners. The chronological arrangement of the armour at Man-

chester, by showing what can be accomplished despite all the obstacles arising from restrictive pledges, conflicting interests, limited space, and disadvantageous position, may happily have some influence on public opinion, both at home and abroad, and induce those who have the power, to exert it in improving the character of those national collections which, instead of merely gratifying idle curiosity, should be made to afford most valuable information, artistic, historical, and biographical.

# ELECTRO-TELEGRAPHIC PROGRESS.

THE European end of the great Atlantic telegraph cable was laid with due ceremony by the Lord Lieutenant of Ireland, at Valentia, on the west coast of the island, as our readers all doubtless very well know, as also that between 400 and 500 miles of the cable were paid out, latterly, into a depth of two miles and upwards, beneath the surface of the ocean, when unfortunately the cable snapped in consequence of additional check being put on the paying-out machinery to prevent it from running out too fast. Whether this portion of the line will be regained may be doubtful, but the experience got is valuable, however costly the experiment, and there is little doubt now felt, we believe, of the perfect practicability of laying down the cable. The only question is whether this should be done in October, after the equinoctial gales of the present autumn have passed over, or whether it may not be better to put off further procedure till next year. Imperfections in the paying-out machinery require to be rectified, and we must record the fact that great misgivings existed previous to the departure of the expedition as to the efficiency of this machinery. A naval officer, too, Lieutenant F. Higginson, confidently predicted what has occurred; in consequence, as he maintained, of the circumstance that the apparatus and its management were arranged by landmen who had not adequate experience of the strains to which the cable might be subject on ship-board.

In describing, some time since, the remarkable state of a piece of telegraph line which had been worked out in the British Channel, it may be remembered, we suggested that it might be instructive with reference to the Atlantic cable and its working. The wire was, as it were, consolidated into little pellets, completely disintegrated, and which looked as if each had been shortened by hammering on the ends. This, we remarked at the time, was quite explicable on an idea previously broached more than once by us in the *Builder*, that the influence of the positive electric force was concentrative, or *attractive*, rather than the contrary, or more analogous to cold, for example, than to heat, the *negative*, of course, being the contrary, or more of the nature of repulsive force than of attractive. The necessity or advantage of so working telegraph lines as to obviate a tendency of the positive to consolidate and disintegrate the wires, was then suggested, with special reference to the Atlantic Telegraph. Since then, a very simple, and we do anticipate, a most effectual method of doing so has been adopted by Mr. Whitehouse, whether inadvertently or with this special purpose in view we know not. The working apparatus, it appears, is so constructed that, simply by raising and depressing the handle of a key, the operator transmits alternately negative and positive electricity through the wire, and never sends two currents of the same kind successively from the same pole of the battery. One consequence of this arrangement, whether designed or not (and, indeed, one can hardly see any other design to it), will assuredly be that the perpetual tendency of the positive to consolidate and disintegrate the wire will be as perpetually counteracted by the negative, and the wire be sustained *in statu quo*, or at least in a workable condition, so far as the special influence of either the positive or the negative on it is concerned. We think we may safely prognosticate that a great economy in the sustenance of telegraph wires would follow from the general adoption of some such method as this of counteracting the influence of the positive by means of the negative.

The form of instrument at present used for developing signals by the Atlantic Telegraph Company is it seems a modification of the well-known marking instrument invented by Professor Morse.

The British and Irish Magnetic Telegraph Company are progressing very rapidly with the erection of an overground line of telegraph along the highway between Killarney and Valentia, for the purpose of connecting the existing telegraphic system with the Atlantic cable at the latter place, by means of which, under an arrangement entered into between the magnetic and electric companies, the whole of the lines in the three kingdoms, 10,000 miles in extent, will be available for the rapid transmission of intelligence between Europe and the American continent. The line is already completed beyond Killarney, where the Magnetic Company have established a temporary



station. The entire through communication to Valencia is at this moment in all probability completed.

Mr. Edward Highton, C.E. has just completed his patent for, firstly, sending telegraphic messages both ways through one and the same wire, at the same instant, without the messages interfering in any way with each other; secondly, for preventing the destruction of a wire in the sea or underground; and, thirdly, for mending a decayed telegraphic wire in the ocean without leaving the land. It is obvious that this last invention, if really practicable, would be of enormous value to the Atlantic cable; but we scarcely comprehend its true purport.

A new system of constructing and laying down submarine telegraph cables (in sections), has been submitted to the notice of the Paris Academy of Sciences by M. A. Balestrini. The memoir was merely a preliminary one, to be followed up with details.

Before quitting the subject of the great submarine Atlantic cable, we would suggest that had one or two ropes, of sufficient length, with floats appended, been temporarily affixed to the cable as it was paid out, so as to indicate its whereabouts, and enable those engaged in laying it down to haul it up again when broken, the present interruption, and probable loss of cable, as well as of time, might have been obviated. Each successive line of rope so attached to the cable, as it proceeded, might have been separated from its float when succeeded by another, and sunk by means of weights, or by its own gravity if it were a wire rope. It might thus, too, have been made to act as a sort of anchor to the main cable, repeated at every score or half-hundred miles.

A new telegraph has been erected to connect the establishments of Messrs. Waterlow and Sons, in Birch-lane and London-wall, London. This is the first instance, it is believed, of a telegraph being carried over houses in any large town in England. The distance between the two establishments is about one-third of a mile, and the whole space is traversed by a single wire, suspended from pole to pole, at a great elevation above the immediate houses; indeed, so much so as to be scarcely perceptible to the eye. Mr. S. H. Waterlow submitted such a scheme some time since to the police authorities, for uniting the police courts, police stations, and fire-brigade stations throughout the metropolis. This arrangement is already acted on in the United States.

#### INAUGURATION OF THE LOUVRE, PARIS.

On Friday, the 14th instant, as we announced last week would be the case, the emperor inaugurated the completed Louvre. Of the works here we have before now often spoken, and views and plans will be found in previous numbers of our journal. The *Times* of the 17th instant gives a full and excellent account of the ceremony, and mentions as a curious coincidence, that the inscriptions intended to commemorate the date of the foundation of the Palace of the Louvre were only discovered the day previously. To them is added the date of its completion. Both are now affixed to the front of the Pavillon Sully, which is right opposite the central pavilion—the Pavillon de l'Horloge—of the Palace of the Tuilleries. They are engraved in golden letters on slabs of black marble, and are to this effect:—"1541, Francis I. commences the Louvre; 1564, Catherine de Medicis commences the Tuilleries; 1852-1857, Napoleon III. connects the Tuilleries with the Louvre."

On the arrival of the emperor, M. Fould, Minister of State, read an address, in which a sketch was given of the proceedings. Referring to the workmen, he said:—

"Your Majesty no longer sees at their head the eminent artist whom you had selected to complete the Louvre. A premature death, striking him four years ago, at the commencement of this great undertaking, deprived him of the honour of completing it. M. Lefuel, who was designated by your Majesty as his successor, has the glory of having finished it, and his name will remain attached with that of Visconti to the monument which we now inaugurate. The death of Visconti is not the only circumstance of which this ceremony reminds us. This year even we have lost Lemart, an artist at once bold and correct, and whose last compositions are the carvings of the Pavillon de l'Horloge and the handsome pediment of the Pavillon Denon."

During the course of these works I have more than once pointed out to your Majesty the intelligence and the zeal of all those who have taken part in them. I have been permitted again to mention the names of those who have more particularly distinguished themselves, and to whom your Majesty has deigned to accord recompenses."

The list was then read of the persons engaged in these works, whom the Minister recommended as worthy of marks of the Emperor's approval. The names were numerous, and comprised every class, from the principal architect, sculptor, and painter, to the working mechanic—all, in fact, who excelled in their respective branches. These persons advanced as their names were called, and each received from the hands of the Emperor the Cross of Commander, Officer, or Knight of the Legion of Honour.

The Emperor, in his reply, showed that the history of monuments has its philosophy as well as the history of events.

A dinner by the Minister of State was given in the evening. The majority of the guests were of the working classes, those who have been engaged in completing the Louvre: the rest consisted of men of letters, representatives of the press, and artists. M. Fould, Minister of State, presided. On his right was M. Maret, one of the contractors for the works; and on his left a young workman named Riffaut, a stonemason by trade.

After the health of the Emperor had been drunk, M. Lefuel, the architect, proposed the health of M. Fould. After this, M. Maret, the contractor, drank "To M. Lefuel; to his agency." And then M. Riffaut, an operative, said:—

"Gentlemen, in the name of the assistants and operatives of whom I am the interpreter, I come to express the gratitude with which we are penetrated for the rewards which have been decreed to us, and to propose 'The health of the Emperor,' whose generous heart has given so many marks of sympathy for the working classes: 'His Excellency the Minister of State, a worthy interpreter of his ideas;' 'M. Lefuel, the architect of the works, a worthy completer of the undertaking commenced by M. Visconti;' and, finally, 'The Contractors, our patrons,' whose intelligent activity never ceased to guide us, and of whose kindness we shall ever preserve an agreeable recollection. *Vive l'Empereur!*"

#### PREMIATED DESIGNS FOR THE GOVERNMENT OFFICES.

WE this week publish an illustration of the design for the War Office (on the left of the view) and the Foreign Office, by Messrs. Pritchard and Seddon, of Llandaff, for the first of which was adjudged a premium of 200*l.* in the recent competition.\* The view is taken from the north-west. The drawings explanatory of the complete design, as they appeared in the former exhibition at Westminster Hall, included a block plan, showing the general arrangement of Offices as proposed by the authors, besides the detailed representations of the portion of the design appropriated to the Foreign Office and Foreign Minister's residence. The drawings were numbered 140 in the exhibition, and were marked "Cymru," with the Prince of Wales's feathers. The two chief Offices and residence were designed as three distinct buildings, though grouping together and according with one another in style and character. The premium, however, was awarded, as in other cases, for only one of the Offices, apparently without regard to a question whether the merit which might be perceived in one, could be separated from what might exist in the other. The peculiarity of the award is even more remarkable in the case of Mr. Dwyer's design, where the two Offices are designed as one building, with a central feature which would have to be cut in two, to effect the separation. Considering that all competition designs should be viewed as made for actual execution, it cannot be considered that the judges in their desire to distribute the premiums with fairness to all, have attained their object. They have rather adopted a course which involved essentially some degree of injustice. They were, however, placed in a position of great difficulty by the instructions, and by the form in which the premiums were offered. That there should have been successive competitions instead of three undertaken at the same time; or else, that the premiums should have been announced for one comprehensive class of designs, such as those which the principal competitors felt compelled to undertake, is, we suppose, now admitted on all sides. We pointed out the mistake in the first instance, and after the drawings were sent in, and feel compelled to recur to it often. We hope architects will at length be brought to hesitate if they attempt to work upon "instructions," worded without regard to the first elements of logic and those laws of thought which are to be departed from least of all in architects' designs; or such instructions as do not leave them and their judges free to the realization of the best work for the object. Architects should also hesitate if they compete without security that there will be some return to them, if not employed to superintend the building—such return as they might get from a well-managed public exhibition. We are not disposed, however, to pursue this disagreeable subject. It is enough to say, that the enormous waste of labour which there has been in this recent case, is a source of constant lamentation to us.

The opposition, however, which the Government have met with in parliament, is in every respect ill-advised and discreditable. The primary object surely need not be debated about; and the pursuit of the object, with the sole exception of the management of

\* Our drawing was prepared from a photograph made in the Hall by Mr. Herbert Watkins.

the competition, need not be found fault with. We do not even think that a first step was to impose a limit of expenditure. Clearly, in national works, the preliminary measure is to see what is wanted for convenience and use. The means can be found—with economy and return of interest—both for that, and for any amount of decoration which an architect would deem accordant with the purpose of the structure. We are more than ever puzzled to understand the language of honourable members in treating of questions of architecture and public works. Mr. Henley is quite right in saying, that competitors would think themselves hardly treated in being put to the expense of plans which the Government had no intention of carrying out. He might well think that such course would not be an honest one towards those gentlemen. But why need he refer to the state of the Foreign and Colonial Offices, as having existed for twenty years, since there can be no inference therefrom, whilst the necessity for the speedy erection of a new building is so apparent? Or why should another honourable gentleman, uncontradicted, treat the designs for the Foreign Office and War Office by different authors, as one; and mix up the design for the conversion of the bed of the river into a flower-garden, with the others—to reason from these premises that "architects who indulged in such poetical designs, could not complain of their plans being rejected?" Verily, the qualifications for the parliamentary sphere, which we are told are peculiar and special, must be of a singular kind, since they involve no knowledge of what a man speaks about. Has Mr. Briscoe ever been into Westminster Hall, and seen the drawings?

We confess to being a little led away from the immediate matter before us, namely, the notice of the one particular design by Messrs. Pritchard and Seddon. Its authors have this advantage over some who have received high premiums, that nearly the whole of their project is displayed on the walls of the Hall in the collection of drawings now exhibited—the several portions of their design—the War Office, the Foreign Office, and the Residence being on the same sheets. Their design was not without reason regarded as in many respects superior as compared with others in the same style. Its distinctive characteristic may be said to be the regularity of distribution of its window openings; and a general attention to grouping and uniformity which is admirably adapted to the character and purpose of the offices.

The buildings, in plan, are arranged about an oblong court, opening from Charles-street,—entering which by a gateway, the residence is seen opposite, at the north end. The gateway occupies the centre of a screen, or covered way between the two buildings. Each building has a lofty tower with a lantern or pyramidal roof, and a spire capping. In both the War Office and the Foreign Office, the principal feature of the plan is a large central hall on each floor, with a staircase in the middle of its area. The hall is lighted partly by windows from the ends of courts, and partly from the lantern of the staircase. The other chief feature of the plan which deserves notice, consists in the provision of numerous loggias of arches to the entrances, and square projections in other parts, so as to conform to the superficial area required by the instructions—which was different in the chief floors—and yet economically to secure an addition to the external effect, and to convenience as regards the entrances.

Another feature of Messrs. Pritchard and Seddon's plan, is the introduction of a stable as a low detached building, at the north-west angle, or most prominent position. They seem to have sacrificed a considerable portion of ground, and to have injured their plan by this addition to the objects required in the instructions; and in the effect, this is the least satisfactory part of the design. The character of the design, as we have remarked, results from the general regard for symmetry. The grouped window-openings are separated by broad piers with niches. The loggias—sometimes in two stories—and the towers form central features in a front; and the projecting masses are placed symmetrically. Pointed and cusped arches, over a square lintel and sculptured tympanum, are used generally; and the details both of sculpture and ornament, display much taste. Good art is also exhibited in the staircases and the internal decoration. The design is well shown by drawings, including well-executed perspective views.

**BRONZE POWDER.**—Experiments have been instituted by Herr König in order to ascertain the method of preparing bronze powder, hitherto a secret. From the results it appears that the several varieties of bronze powdered leaf are each composed of nearly the same proportions of copper, zinc, and tin, and that the variation of colour is owing to different degrees of oxidation, which have been produced by heating the alloy at different temperatures.





DESIGN FOR THE WAR-OFFICE, TO WHICH A PREMIUM WAS AWARDED; ALSO FOR THE FOREIGN-OFFICE.—MESSRS. PITCHARD AND SEDDON, ARCHITECTS.







CHURCH-BUILDING NEWS.

**Wantage.**—We omitted to mention last week that the restoration of the parish church here has been carried out from the designs of Mr. G. E. Street, including the glass, the pavements, and the sculpture.

**Leicester.**—The foundation-stone of a new Independent Chapel was laid upon a vacant piece of ground nearly opposite De Montfort-street, London-road, by Mr. J. D. Harris, M.P. on the 11th instant. The design of the building is described by the local *Advertiser* as "Modern Italian, being an adaptation of the Italian style to the requirements of the present day, both as regards material, construction, and internal arrangements." The facade to the London-road will present a projecting centre, crowned by a pediment, and supported on each side by wings, forming the termination of the side aisles and galleries. In the centre part are three entrances, decorated with an enriched order of columns, cornices, &c. and quoins. The interior consists of a ground-floor and galleries, affording accommodation for upwards of 800 persons, and also a large school-room, eventually to be added to the chapel, which will then seat more than 1,200 adults. The arrangements for warming are in the hands of Messrs. Haden and Sons, of Trowbridge. The contractors for the building are as follows:—Messrs. Lindley and Fim, masons; Messrs. Cox and Son, bricklayers, &c.; Mr. Fozzard, plumber and glazier; Mr. Barsby, ironfounder; Mr. Haynes, painter; Mr. Morrell, plasterer; Mr. Webb, slater.

**Abingdon.**—Since the last vestry meeting as to the restoration of St. Helen's Church, Mr. W. Wilkinson, of Oxford, and Mr. Scott, of London, the architects selected for the purpose, have examined the tower and spire of the church, and each having furnished a report to the committee, a vestry meeting was called for the 13th instant, to consider these reports, to direct measures for the re-building or repair of the tower and steeple, and to provide the necessary funds for the same. Mr. Wilkinson, in his report, expressed his belief that it is possible to repair the tower and spire, and in doing so, proposes to shore up the east wall, the inner archway and weak portions of the south wall, and other parts where necessary; to build two new buttresses on the east side of the tower; to shore up the south wall above the inner archway, and to construct a new entrance of smaller size than the present one; to build on the south aisle of the church two other buttresses; to construct of oak timber a trussed framework, and to fix it at the weakest part of the tower; to insert iron tie-rods on the east and west sides; put iron pins through the wall and bolt them; and do certain works (not of any great magnitude) to the spire. Mr. Wilkinson advises the committee to obtain tenders for the supply of various articles, such as timber for shoring and scaffolding, oak timber for the framing, stone, Portland cement, iron rods and nuts, and for the supply of masons, carpenters, and labourers at per diem, and that an efficient practical clerk of works, who has carried out works of a similar kind, should be appointed. Mr. Scott, in his report, alludes to the principal defects to be remedied, as "the overhanging towards the east and south, the crushing, cracking, and disintegration of many parts of the walling, and the crushing of the arch opening into the church." He explains the following courses which would be adopted to save the tower:—The erection of a thorough system of shoring on east and west sides, a considerable addition to the existing buttresses on the east side, the reparation of the shattered walling, the replanning of the cracked portions in a great measure of the staircase, and the substitution of better iron ties for the existing ones. With certain requisites named, Mr. Scott is of opinion that the restoration of the tower is practicable, and recommends it. After the reports had been read, the chairman stated that the committee had ascertained the probable amount of the cost of repairing and restoring, and also the probable cost of rebuilding, and the following was the result:—To repair and restore the tower and spire—Mr. Scott's estimate, nearly 1,000*l.*; Mr. Wilkinson's, 680*l.*; To rebuild—Mr. Scott's estimate, 2,000*l.*; to 2,500*l.*; Mr. Wilkinson's, 1,811*l.* 5*s.* He further stated that the committee had had an interview with Mr. Wilkinson, and afterwards unanimously agreed to advise the vestry to adopt Mr. Wilkinson's plan for the repair and restoration, and to engage him as the architect; and further, to recommend a rate of 1*s.* in the pound (which would realize about 450*l.*), and that a voluntary subscription should be opened towards the cost of the works, &c. Mr. Wilkinson's report and plan were unanimously adopted. The question as to the ways and means was not quite so quickly disposed of, but was also at length agreed to.

**Worcester.**—The cemetery report of the general health committee, read recently at the council meet-

ing, stated that the plans for the cemetery had been approved by the bishop and the secretary of state, and that after twice advertising for tenders, four had been received, the lowest of which was so much above the estimate of Mr. Clarke, the architect, that the committee had consulted with that gentleman as to a modification of his plans, so as to reduce the expenditure.

Mr. Clarke, however, thought that no change could be made which would occasion any considerable saving, while at the same time it would damage the general effect of the buildings. He therefore strongly recommended that the plan should be carried out in its entirety, and expressed his belief that the total cost of all the works of the cemetery would not exceed 7,000*l.* The committee consequently supported Mr. Clarke's view, and urged the council to have the entire plan carried out according to the lowest tender—namely, that of Messrs. Chambers and Hylton for 4,830*l.* 14*s.* 6*d.* After some discussion, the adoption of the report and of Messrs. Chambers and Hylton's tender was agreed to unanimously.—The extensive works for the partial restoration of Worcester Cathedral, are in rapid progress. The southern portion of the eastern transept was fearfully cracked and warped by the lapse of ages, and the windows defaced by the introduction of bad tracery belonging to a later period. The southern wall and buttresses of this transept have recently been taken down and rebuilt, and the ancient windows restored free from the anomalous tracery. The main feature of the renovations in progress lies at the east end of the cathedral. The buttresses properly belonging to the edifice have now been rendered perpendicular and nearly rebuilt, and an Early English window will fill up the end of the cathedral in place of the Decorated one which had supplanted the ancient work. The flying buttresses at the angles were removed as soon as the angle buttresses properly forming part of the edifice were strengthened sufficiently to ensure proper resistance to the thrust of the groining of the roof and the other arches. In removing one of these flying buttresses, according to the *Chronicle*, from which we quote, a piece of chisel was found imbedded in the masonry. This is regarded as itself a proof that their erection took place at a comparatively modern date. The new east window will contain ten lights disposed in two tiers of five, each divided by a gallery. The lights in both tiers decrease in width, and those of the upper tier in height also, from the centre outwards, and by this arrangement a variety is obtained in the various members of the window. The lights are divided by piers, ornamented by slender shafts, which, rising from the bottom of the window, cross the gallery and terminate in moulded capitals, surmounted by the mouldings of the arches. The hollows of some of the mouldings are filled in with the tooth ornament. There are said to be proofs that the ancient window was of five lights, and Mr. Perkins has constructed the window in accordance, as to details, with the remains of Early English east of the tower. In the interior the window exhibits clustered columns of marble, and these support combinations of deeply cut mouldings forming the heads of the lights. The lights, it is hoped, will ultimately be filled with stained glass. The long lancet windows on each side the chancel of the Lady Chapel are also to be taken out and restored. The Dean and Chapter, in restoring the interior walls of the choir and Lady Chapel, have caused the whitewash to be removed, and the polished face of the marble columns to be exposed. The workmen have also restored the decayed portions of the walls, columns, and masonry generally, of the choir and Lady Chapel. Extensive renovations at the west front were completed some months ago. These consisted chiefly of the erection of new buttresses to restrain the tendency of the nave to fall westwards, the rebuilding of the gable, in which an arch has been introduced for the purpose of allowing the removal of the window when the funds of the Dean and Chapter permit, the mullions and portions of the tracery being in a very dilapidated condition, though this is not readily perceptible. Among the recent improvements may be noticed the masonry of the Adelaide and the Wheeler memorial windows, in the clerestory on the south side of the choir. Amongst the contemplated restorations, it is intended to ornament the angles of the north central transept with pinnacles. The contractors are Messrs. Bennett, of Birmingham. Divine service is at present performed in the nave.

**Cardiff.**—Tenders have been received for the proposed new Jewish Synagogue, at East-terrace, Cardiff; Mr. H. J. Paul, architect; ranging from Bourne, 456*l.* to Edwards, 416*l.* Quantities supplied.

**Harborne.**—The foundation stone of the intended Church of St. John the Baptist, in Harborne, was laid on the 14th inst. by the Rev. Chancellor Law.

The style is Geometrical. The edifice will consist of nave, north and south aisles, chancel, and sacristy, and a bell turret at the south-west angle of the nave. The principal entrance will be in the centre of the west front: there will also be another entrance on the south side. The length of the nave will be 80 feet by 25 feet width, and the height 45 feet to the ridge of the roof: the aisles will be nearly the same length as the nave by 13 feet wide. The roof will be of open timber framing, ceiled between the rafters, which, together with the seats and other wood-work, will be stained and varnished. The nave will be separated from the aisles on each side by arcades of five arches. The pillars and arches both to nave and chancel will be worked in Bath stone. The passages and chancel will be paved with tiles. The west window and the chancel east window will both be of five lights, filled with tracery: the aisle windows will be of two lights each, with simple trefoiling in the heads. Externally the walls will be of white brick, with Bath stone dressings. The church will accommodate 650 adults and 150 children, and one-half of the kneelings will be free.

MALVERN.

It may perhaps enable some of the younger readers of the *Builder*, who chance to visit Malvern, to view with greater interest and profit the abbey or priory church of that place, if I attempt shortly to indicate the points which struck me as most worthy of attention in a recent examination of that structure.

In the interior are brought together, without any of the intermediate links which connect them, the extremes of that Mediæval architecture whose rise, development, and decline spread over some centuries. The supports of the pier-arches which divide the area from the west to the crossing in three aisles, are those huge cylindrical masses of masonry, supposed by some to date from the pre-Norman era. The abacus, a square stone, with the lower edge plain chamfered, follows the plan of the pier: the moulding below it is a quarter round, with small circular torse beneath. The bases, if they exist, are concealed by the elevation of the floor; the arches round, of three orders of square-edged members. The space of wall between the pier-arches and the bottom of the clerestory windows—enough for a triforium stage, had this feature entered into the builder's design—is left blank, with somewhat unpleasing effect.

Of the windows, of rigidly late Perpendicular character, I will say a word hereafter.

The covering of the central aisle is a flat ceiling, divided into small squares by wooden moulded ribs, altogether poor and ineffective. The alternate transverse ribs are returned downwards upon the wall, until stopped by sculptured brackets placed upon the point of each window, and between the piers. The spandril spaces, obtained by the addition of a curved brace, are pierced into Perpendicular lined panelling. The four arches of the crossing, pointed, lofty, and rising until they intersect the vaulting, are composed of circular fillets and hollows, not retiring within and behind each other in the usual way, but upon the same plane,—an arrangement quite destructive of the richness and depth of the compound arch. The hollows are filled in with panelling, and all the members of the arch are brought down the sides in that unbroken continuity as characteristic, perhaps, of Perpendicular as of French Flamboyant. Below these main arches are constructed, to the north and south, subsidiary ones, the space of wall between them, which is considerable, being relieved by panelling. The last-named arches, by a barbarous contrivance of modern date, are closed by a gallery of piers, completely shutting out of view the arms of the transept. The pier-arches of the choir, three in number, have, like those described, their characteristic continuous mouldings, for I do not consider the propriety of this expression violated by the *quasi* octagonal abacus-mould and plain cap, which encircle the mouldings on the line of impost. As in the part of the church west of the crossing, so in the choir, the space of wall between the pier arches and the clerestory windows is considerable, but here it is relieved by its decorative panelling. The absence of a string course of any sort throughout the building struck me as a very obvious defect. The erection of a massive semi-circular wall, 10 or 12 feet high, for an inconceivable purpose, serves at once to curtail the choir of its proportions, and utterly to destroy the effect of the large window, which, if exposed fully to view, would form a very noble termination to the eastward. The north side, too, is closed up by a wooden screen, of the Perpendicular period, which, though beautiful in design, and delicate in execution (the crowning string, or cornice, a band of admirably cut vine leaves and fruit), I, for one, should not object to see removed. The west end has not been much better treated, for there a wooden organ-loft blocks up in part the window; so that it must be allowed much perverse ingenuity has



been too successfully employed in marring the beauties of this really fine edifice.

The stone vaulting of the crossing is groined and ribbed, in rather a complex manner; that of the central aisle of the choir, a flat ceiling like the one before described, though the presence of vaulting shafts, formed by the prolongation of the external mouldings of the clerestory window arch to the ground, would seem to indicate that a regular groined roof once existed, or was contemplated: the roof of the choir-aisles consists of eight-celled compartments, produced by the transverse, diagonals, and longitudinal ridge ribs, and a rib from point of pier-arch to point of aisle window.

There is some good Perpendicular panelling in various parts of the church. Besides that already mentioned, this mural decoration is employed on each side of the clerestory windows of the choir; in the space between the summit of these windows and the intersection of the vaulting with the wall; and at the foot of the windows of the choir aisle, and of the great eastern window. The last named appears to me the most perfect example;—the head of each compartment formed into an ogee arch trefoiled, then the upper foil trefoiled again, and the lateral foils bifoliated, an instance of which has been termed *double foliation*, or *double feathering*: two small ogee arches, also trefoiled, under a transom, correspond to each of the upper ones.

A large part of the floor of the north transept, and of the upper end of the choir is formed of encaustic tiles, and there are others scattered in smaller quantities about the church. On the south side of the choir is an elaborate marble tomb, raised to one Lane, a Knight, servant of Henry VIII., and his lady. These personages are represented in effigy, in a recumbent posture, and at the head of the tomb is a kneeling figure with uplifted hands, in the attitude of prayer. I suppose this monument not to be earlier than the reign of Elizabeth. The execution is very good, and the preservation complete. In the north transept are two ancient stone tombs, one of them quite defaced; the other surmounted by the effigy of a warrior in chain armour, I presume, of the close of the twelfth, or commencement of the succeeding century.

The windows of the nave are of three lights, those of the choir aisles of four, of the transepts of six; the west window of seven, and the east of eight, all formed on the same principle, which, I think, may easily be rendered intelligible by a description of the last named. The central mullion splits near the top, and divides the window archway into two secondary arches; each of these, in turn, subdivided into four lights, with ogee-headed heads, on a level with the springing of the window arch; from the points of the ogees vertical lines are carried upwards to the circumsccribing arch, and the mullions separating the four lights are in like manner prolonged. All the perpendicular lines above the ogees are curved at top and bottom into little arches, and the interstitial spaces thus obtained are trefoiled. A transom divides the secondary arches at about half their height, and below this is another line of miniature trefoiled ogee arches. Below the main transom bar, which divides the window into two stories, the series of ogee-headed lights is repeated. I wish to direct attention to the abundant use which is made in this church, both in windows and panelling, of *cing-foliation*, in contradistinction to trefoiliation: the former is almost exclusively used in the later periods of Pointed architecture in our own country, whilst in France its employment is quite exceptional. There is some good contemporaneous stained glass in the eastern window, and in those of the choir aisles. The modern glass in the western portion of the church offers a deplorable contrast both in colour and in design, the latter consisting, strangely enough, of armorial bearings and heraldic devices, surely somewhat misplaced in an ecclesiastical edifice.

The windows, outside, have plain dripstones, continued as a string over the sides and faces of the buttresses. The broad, shallow, straggling hollow of the declining period of Pointed architecture forms the main feature of their mouldings. There appears no attempt to ornament the buttresses: their set-offs are united by plain slopes, and they run up into square shafts set diagonally with finialled and crocketed pinnacles. The parapets are various, but all of the battlemented form; some solid, some pierced into vertical lined panels, and another portion formed of two stages of similar panelling, the upper being placed at equal intervals, to form the merlins of the battlement. The central tower is well proportioned, of two stories above the roof; the belfry stage, consisting of a two-light window in each face, crowned with conoidal-shaped canopies, with concave sides, finialled and crocketed. The parapet is pierced, and there are open angular turrets.

There is no entrance now into the church but by the projecting square porch at the north-west end, a

good example of the Perpendicular period, of as pronounced a character as the rest of the building. The stone vaulting of the interior is elaborately groined and ribbed, the front overlaid with panelling, and from the middle of the upper story projects a canopy, and corbel pedestal for a statue.

The old Priory Gate-house, adjacent to the church, is worthy to be noticed. One side of it is in very excellent preservation, the whole surface covered with panelling, with quaterfoliated circles enclosing shields, and lighted by a very graceful little oriel window in the upper story.

These, I believe, are the only antiquities of which Malvern can boast.

VIATOR.

#### HALIFAX.

The inauguration of the people's park, the costly gift of Mr. F. Crossley, M.P. took place on the 14th inst. On that day, the formal presentation of the new park to the corporation was made. It is situated on the western side of the borough. It has four entrances, two in Park-road, one in Hopwood-lane, and one in King's Cross-street, and the whole is surrounded by palisades. The promenade is reached by means of flights of stone steps. In the centre of the terrace is a semicircle of steps, nine in number, and 27 feet in width. At the top of these steps a stone building is erected, 30 feet high, with arches in front, borne on pillars of stone. On each side of the building will be small fountains, and Grecian vases on pedestals. In different parts of the terrace are productions of marble statuary, of life size, eight in number, the work of Italian artists, representing Hercules, Venus at the Bath, Aristides, &c. Below the terrace is a stone basin, 4 feet in depth, and 216 feet in circumference, with a fountain in the centre. Lower down is a little lake, with a serpentine walk about it, and bridges over it,—one formed out of rocks. These sheets of water will hereafter be tenanted by aquatic birds of various kinds.

At the south or south-east side of the grounds, baths are to be erected by the corporation. The external part of the building is to be elaborately decorated, at an estimated cost of 1,500*l.* by public subscription, the rest to be built by corporation rates. The park grounds, which are laid out with trees, shrubs, plants, and flowers, comprise in all 7 acres and 25 perches of grass; 1 acre, 3 rods, and 20 perches of walks; 2 rods and 9 perches of water; and 2 acres 2 rods laid, and 1 perch of plantations,—in all about 12½ acres, suitably studded with numerous seats for the use of visitors.

The following particulars as to the Congregational Church lately erected at Halifax have been in type for several weeks:—

The opening of the new Congregational Church, at Square, Halifax, took place on the 15th ult. It is regarded as "a miniature cathedral," and has been upwards of two years in process of erection. It adjoins and is in lieu of Square Chapel. Hitherto the most notable dissenting chapel of this kind in the West Riding of Yorkshire has been a Unitarian chapel, at Leeds. The new edifice at Halifax comprises a nave, transepts, tower, spire, and cloisters. The architect, Mr. Joseph James, of London, has adopted a treatment of the interior to suit the object for which the building is designed. The period of architecture selected is that of the fourteenth century. The form of the edifice is that of a nave, with cloisters on each side, north and south transepts, with a tower and spire in the junction of the latter with the nave, and a small spirelet on the opposite side: there is a projection for the organ in place of the usual choir. The nave or body of the edifice does not occupy the western end, and the small substitute for a chancel the eastern end, the site being such as to compel the usual position to be reversed. The eastern end of the nave abuts upon Square-road, the gable rising to the height of 73 feet, surmounted by a metal cross with ears of wheat. Near the apex of the gable is a four-light window, with louvre-boards for ventilation. Below it is the great east window, 36 feet in height, of seven lights, the mullions terminating at the top in a cele, with flamboyant tracery. Underneath this window is the entrance to the seats on the ground-floor of the nave, by a recessed doorway, having a double niche on each side of the entrance, and surmounted by a small gable. The gable is flanked on each side with a broad buttress (in which are inserted the entrance doors and steps to an eastern gallery), surmounted by perforated turrets rising to the height of 80 feet, finished by crocketed pinnacles. The sides of the nave are divided into bays by broad buttresses, within which run the "cloisters,"—rather low covered passages into the transepts, entered by doors in the first bay, and lighted by broad, flat-arched windows in the other bays. The windows in the nave between each buttress are each of three lights, of almost cathedral size, the head of each being filled in with varied geometric and flam-

boyant tracery. The ends of the transepts have on the ground stage three single-light windows, and in the gables wheel-windows about 16 feet in diameter, filled in with tracery, the latter lighting the galleries and the former the seats below the galleries, in the transepts. The western projection, containing the organ, has also windows in the ground-stage, intended to light the vestry, the organ being first designed to stand in a gallery above. But as the organ has now been placed on the ground, the windows are filled with slate; but an upper window in the western gable is seen over the organ. There is an entrance both to the floor of the nave and south transept, and by a staircase to the gallery of the latter, in the first stage of the tower, with which also the south cloister communicates. The tower and spire which were built by private subscription (understood to be from the Messrs. Crossley), mount up to about 235 feet, including the vane. A pierced battlement surmounts the tower; and the springing of the octagonal spire from this base has been hidden by six-o-keted pinnacles at each angle. The spire itself is a bowed one, though at a distance this peculiarity cannot be observed. It is crocketed at the angles, and in the cardinal faces is broken into stages by lucerne-lights. Within, the architect has been obliged to make the pulpit the main object. The nave is 95 feet long by 45 feet broad, and 45 feet high, with transept on each side of the eastern end of the nave 28 feet wide. Two aisles, each 6 feet 6 inches wide, and flagged with stone, run up the nave, and afford ingress and egress to low-backed oak pews on either hand. The seats in the transepts stand at right angles to those in the nave; and the space between the transepts is occupied by the pulpit upon a raised dais, surrounded by a light oaken railing. The pulpit is of Caen stone. Immediately behind it stands the organ, the recess in which it stands being separated from the nave by a large arch, equivalent to the chancel arch of an ordinary church. In order to secure the required acoustical properties of the building the architect has adopted a five-sided panelled ceiling; the whole of which has been coloured and emblazoned, under the architect's designs, by Mr. Haley, decorator, &c. Bradford. All the windows are filled with quarried glass, with a sparing use of deep colours in the traceried heads (the glass being supplied by Mr. N. W. Livers, of London). In the evenings the building will be lighted by three sun-lights in the roof, the pulpit, organ, and seats under the transept-galleries having separate gaslights. Accommodation is provided for 1,040 adults and 200 children. The building has been erected by Messrs. J. and W. Bradford, of Bradford, under Mr. J. Dilworth, clerk of the works, and its cost will be about 15,000*l.*

#### PROVINCIAL NEWS.

**Chelmsford.**—The opening of the new school at Southend, according to the *Chelmsford Chronicle*, took place on the 4th inst. The new buildings are situated on the south side of the high road to Southend, a little eastward of the parish church of Southend. They are from the designs, and have been executed under the superintendence, of Mr. William Slater, of Lond n. There is a teacher's residence of six rooms, and a school-room, 88 feet by 17 feet, with an open cradled roof, called to the ridge. The style of the whole is "Middle Pointed." The walls are built of grey stone, and are roofed with dark-coloured tiles. The appearance of the buildings, both as to form and colour, is plain, but relieved by gabled windows of a lighter-colored stone on the north side of the school-room, and by a triplet at the east end. Together with the restoration in the parish church of a large south porch of carved woodwork, designed by the same architect, the works were contracted for by Messrs. Carter, of Rochford; Mr. Garrard, also of Rochford, and taking the carpenters' work.

**Bury.**—The works of the contractors for the waterworks are now taken up for the reservoir and engine house, by Messrs. Davis and Sons, Bury; steam-engine and pumps, Mr. C. L. Mowbray, Northrop; filter-beds and pipe-laying, Mr. J. Auld, London; sluice-gates and hydrants, Messrs. Guest and Crimmes, Rotherham; supply of mains, the Buttery Company, Alfreton, Derbyshire. Some of the tenders are necessarily upon schedules of prices, on unascertained quantities.

**Maldstone.**—The following tenders were received for the new buildings to be erected at the Red Lion-corner, High-street and Week-street, Maldstone:—

Lawrence and Son, London .....	£3,940	0	0
Parick, London .....	3,895	0	0
Fisher, Reigate .....	3,867	0	0
Sutton and Walter, Maidstone .....	3,892	0	0
Sutton and Vaughan, Maldstone .....	3,887	0	0
Tompson, Maldstone (accepted) .....	3,353	10	0

**Preston.**—The boys' schools of St. Ignatius (R.C.) have been completed by Mr. John Walker and Mr. Henry Butcher, the contractors. The buildings are



plain. They consist of a boys' school-room, 61 feet by 36 feet, and 21 feet high; a class-room, 25 feet by 21 feet, and 15 feet high; and an infants' school, 42 feet by 21 feet, and 15 feet high; lighted by about 300 feet of skylight.

#### STAINED GLASS.

*Dover.*—On the recommendation of the committee of the local council, formed for the restoration of the Mason Dieu-hall, it has been resolved that the council subscribe 100*l.* towards the alterations consequent upon the restoration of the western window. This window is to be restored by Mr. J. Bell, in memory of the late William Kingsford, of the Mason Dieu House: it is to be composed of coloured glass, from a design already prepared.

*Wellington (Somerset).*—Mr. John Toms, who put up a stained-glass window in the parish church here about six months since, has just completed and fixed two others in the same church. No. 1.—window, contains four principal lights, with tracery in the head. Two lights are filled with the figures of SS. James and Andrew, under canopies, with backgrounds of diapered ruby; underneath each figure is placed the saint's emblem. The other two side-lights are of a grisaille ground, enriched with coloured foliage and flowers: it is a memorial window erected by Mrs. Ireland, of this place, to her deceased parents.

No. 2, is a window of three principal compartments, with tracery lights. The general ground-work is a grisaille of lily pattern,—the centre light bearing the figure of the Virgin and Infant Saviour, on a rich diapered background of gold colour; the lily is also introduced as the emblem. This window has been presented to the church by the parishioners. Both are placed in the north aisle.

#### NEW ZEALAND.

The following extract, from a journal kept during my voyage recently made from New Zealand to England, may probably interest some of your readers.

(1857.) I was struck, whilst in New Zealand, with the extraordinary width and height of some trees, willows especially, which had been planted only a very few years; and this rapid growth, with strength of vegetation peculiar to its soil, must be attributed to its temperate and agreeable climate. The Maories, as a further illustration of the climate, will raise two crops of potatoes in a year, without manure; a crop sometimes coming to maturity in fourteen weeks. Almost all our English fruits and vegetables are suited to the antipodes, and grow to perfection. Fern land, which is plentiful, when sown with English grasses produces excellent pasture. There are forests of lofty trees, which are in flower and in leaf nearly the whole of the year. The light and pensile foliage of the blue and red gum-trees is particularly admired. Flax grows wild, and in large quantities: it has a beautiful silky appearance, and is of superior quality. It would require cultivation, and in this light it has recently been considered by the Government, which has offered prizes to the producers of the best specimens. Mats and baskets are made of this flax, closely woven: it is a good substitute for cord, and is used in a variety of ways. Some of the native trees, though, perhaps, not so gigantic as those of Van Diemen's Land, are very beautiful and valuable for building, and for spars: the pine (*kauri*), for instance, is unequalled for that purpose, and the Admiralty has imported large cargoes of it. It is an interesting sight the ceremony of rolling down from their native heights to the beach, whence they are shipped, these valuable timbers. The striking of axes, the song and dance, the chief's signal for a number of labourers to roll the huge spar down the steep, amid the shoutings of many voices, form a scene never to be forgotten.

Nature has indeed favoured this country. The flowers of an island where so many Englishmen have fixed their homes are abundant, charming the eye with all their varieties: many which here would require the protection of glass, grow there in the open air. The noble aloe flourishes, and might be planted, as it is in Italy, for a fence; still it is to be much admired as a central ornament in a circular flower-bed. The golden gorze cheers the eye wherever we travel: the sweet-briar, roses of several sorts, honeysuckle, hawthorn, and acacias of many colours, intermingled in the hedges, and decorate and diffuse their delicious perfumes over the fields, the gardens, and road-sides. Perhaps there is no country in the world that will equal New Zealand for its scenery, climate, and productiveness. How lovely and sweet a fine day is there, when it is so cheerily sunny and not too hot, cannot well be imagined by those who have never resided at the antipodes. I find the opinions of every traveller, deduced after long observation, confirming the remark. Mr. Swainson, the naturalist, Mr. Hursthouse, and others, all speak the same of its advantages in these respects.

Botanists, I believe, have pretty well explored the flora of New Zealand: they have introduced plants into this country, and acquainted us with many which, unknown in Europe, are found only in New Zealand. Quantities of iron-sand, carried down by the torrents, make it probable that there is iron-ore in the interior part of the country: manganese I myself picked up in digging, and gold has been discovered. We coursed along some of the finest harbours of the world.

Water is scarce in some places: one sees at the present day the poor fetching it from a stream in some gully, often a long distance from their homes. In other places where there are wells, the water is abundant. As a proof of the mildness of the winter, in June, which corresponds to our December, the mercury has not fallen below 48 degrees.

The roads in this colony—where anything approaching to roads exists—are constructed with soil and small stones, with bundles of a small shrub as an under-stratum: the surface is covered with *scorie*, or the lava of the volcanic mountains. This is a road that would not be approved of by a McAdam or a Patten. But everything bears strongly the characteristics of a new country. There are some pleasing villas in the outskirts of Auckland, well built, and situated in romantic positions, commanding a view of the country around and the harbour of the city. The city itself has at present nothing that can gratify the eye of the architect. Even the new Government House is so poor, and so out of the pale of fine architecture, notwithstanding its glaring white compo front, that it is little calculated to elevate the public taste. Certainly, something more ought and could have been done by the provisional government to have secured better artists and a better building. However, we must remember that this is a new country, and not expect to find in its architecture and public works evidence of any very high degree of civilization.

F. L.

#### THE NEW-ROAD.

In Mr. Pink's article bearing the above heading, which appeared in your paper, he says, p. 453, there is "a clause in the original Act for making the road prohibiting the erection of any building within 50 feet of it. \* \* \* The lapse of a century, however, seems to have materially modified this penal enactment, for numerous are the instances in which the 50-feet plot is built upon."

If, then, the houses must be brought nearer to the footpaths, why not throw back the paths to the houses? This would leave the roadway sufficiently wide for a double line of rails to be placed in its centre. The same course might be adopted with respect to the City-road, which would give us a continuous railway from Old-street, or perhaps Finsbury-square, to the Edgeware-road.

Of course we should find as many persons ready for an outcry against this proposal as there were in the Duke of Bedford's day to oppose the formation of the road itself; but this does not affect the question of the advisability or the practicability of my suggestion. A railroad, or even a tramroad, would be a greater boon to us in 1856 than the New-road was to our grandfathers in 1756.

E. P.

#### PRACTICAL REMARKS ON DOMES.

The articles in your journal of late treating of domes, and lastly of the necessity of large rooms, with what has been said of the new reading-room at the British Museum and the dome of St. Paul's at various times, seem to imply a difficulty of construction, whereas it is not, but practicable to erect a building covered with a dome *larger* than any hitherto built in the known world. This may be done with brick and cement, stone, or terra-cotta, to have a lantern-light or a cupola on it—not as at St. Paul's, where there is a conical stone erection to support the cupola built within a *timber* dome. Theatres, concert or town halls, museums, lecture-rooms, churches, chapels, &c. may be so built fireproof that timber need only be used to a limited extent for fittings and doors, and upon such a plan that there may be numerous staircases, refreshment-rooms, with cloak-rooms for ladies and gentlemen (distinct), offices, &c. as may be required.

The ground plan may be a square, octagon, circular, or formed by eight right angles, the latter making the most uniform abutment, if the dome is so large as to require it.

In my humble opinion as a practical man, there is scope for the development of this noble feature, and its adaptation to fireproof building of stores, factories, &c. need not be more expensive than ordinary construction, as a vast space may be covered with a dome springing a few feet from the ground, for utility and economy, with strength and great durability.

A building of octagon plan, about 220 feet diameter outside the walls, including usually necessary offices,

rooms, &c. will sent 10,000 persons so as to see on the stage, platform, or pulpit, and not be liable to real or false alarms of danger incident to all the present places of amusement or worship, as of late at Covent Garden Theatre and Surrey Gardens.

The strength of a dome would be tried in its building, as no fixed centre should be used, but a revolving one, to give the form only.

JAS. PULHAM.

#### EXHIBITION OF THE ART-UNION OF LONDON PRIZES.

THE pictures selected by the prizeholders of the past year are exhibited in the Suffolk-street Galleries to the subscribers and their friends, by tickets, which, moreover, may readily be obtained by any who will apply at the office, 444, Strand. After the 31st, the Exhibition will be open to the public without tickets for a week, as usual. The Exhibition consists of 152 pictures and water-colour drawings, together with a roomful of the bronzes, medals, statuettes, drawings, and other works of art which have been produced by the Society, and which, admittedly, have given great impulse to the production of similar works out of doors, to supersede the puerilities which filled the shop-windows a dozen years ago. We have already mentioned the principal pictures purchased by the prizeholders, so that it is unnecessary now to go into detail; but we may point out as amongst the best in the collection, No. 2, "Leith-hill," by G. Cole; 12, "Harvest Repast," by F. Underhill; 16, "Shades of Evening," by H. J. Boddington; 59, "A Family Group," by H. B. Willis; 85, "The Druids' Circle," by H. V. B. Davis; "Felfast proposing to marry Dame Quickly," by D. W. Deane; 107, "Crossing the Brook," by I. Heuzell, &c. Some of the water-colour drawings are admirable specimens. The prizeholders next year should bear in mind that the operations of the Art-Union of London have had the effect, in conjunction with other more recent agencies, in creating so many picture-buyers, that it is desirable to make their selections the moment they obtain the right to do so.

#### SANITARY GOVERNMENT.

ON an application being made by the Government authorities to the vestry of Lambeth, to put a stop to the pestilential effluvia which not only trouble our members of Parliament, but also some thousands of other persons, the Board, in answer, declined to undertake the expense and trouble of prosecution; and, in consequence, the unfortunate dwellers in the neighbourhood are under the necessity of bearing their unpleasant condition until Sir Benjamin Hall can get a fresh Act of Parliament passed for the purpose of compelling the parish authorities to do their duty.

These unpleasant circumstances give rise to several important considerations: the first is surprise and vexation that it should be found necessary at the present day to use force to compel a body of gentlemen, in whose care the health and well-being of a large district is intrusted, to do an evident duty. It has often been to us a matter of pain to note the "penny-wise-and-pound-foolish" policy of several of the metropolitan parish boards in sanitary matters. This course of practice is not only injurious to large masses of the people, but must if persisted in lead to a change in the parochial management of this great population.

In the City, and some other districts where sanitary inspection has been made a matter of police, it is surprising to notice the progress which has been made, and how well with their at present limited authority the officers who have come under our notice have fulfilled their somewhat difficult duties.

It would be unjust to make these remarks without at the same time mentioning that in the poorer districts the parish authorities are awkwardly circumstanced. A large number of those who are called upon to pay the heavy poor and other rates are themselves struggling for an existence. Considerable tracts of property which in the present state of things it is necessary to occupy as dwellings are so dilapidated and saddled with ground-rent, that the present holders can ill afford out of the small profits of the fourth-rate cottage kind of household property to carry out the proper drainage and other improvements which may be required.

We have heard the authorities of London parishes say—"If we enforce all those sanitary measures, we shall not only be driving many who contribute towards the rates to another place, but also will so much raise them, that we shall make paupers of several who are barely able to pay the present amount." Such an argument as this is well worthy of careful thought, and when we look round the wide extent of the metropolis, and find that in some parishes, where there are few needy housekeepers and tradesmen, the parish rates are not more than 4*d.* or 5*d.* in the pound, we see others in which the greatest amount of



poverty exist, and where the most vigorous sanitary exertions are required, pay 2s. in the pound and upwards.

Experience shows that this uneven local taxation of our great city is pregnant with numerous evils, which are at present so palpable and increasing, that a remedy must be speedily applied.

Granting all this, it will be found that proper care for the health of parishes will, in the long run, be found a saving in money, without taking into account matters of a higher consequence; and it should be carefully borne in mind now, when London and its suburbs are so much above the average as to health, that in those places which at the last cholera attack were found so ill provided, but which since then have been greatly improved, we find the greatest comparative decrease in the usual number of deaths, and this should encourage all to increased exertions.

It is unfortunately the case that in times of comparative safety some are apt to lapse in their exertions, and view with but little consideration the exertions of those who, mindful of what is likely to come, will not put off using proper exertions until the evil is upon us and all is terror and confusion.

#### THE GENIUS OF TURNER.

COMPARATIVELY the art of landscape painting is of very recent introduction. The Egyptians, Greeks, and Romans, notwithstanding their skill in architecture, sculpture, and painted representations of the human figure, and of inferior animals, seem to have overlooked the other fair forms of nature, and not considered them worthy of imitation.

In the foreign schools Claude Lorraine, Poussin, Salvator Rosa, Rembrandt, Rubens, and a few others, may be said to have been the first who, with skill and a proper amount of truth, represented landscape scenery. At home, amongst the most eminent dead painters, are Richard Wilson, Gainsborough, Constable, and Turner; all of whom, possessed of high artistic ability, are very varied in style. In considering the merits of the artists above named, it may be worth while to glance slightly at the characteristics of some of them.

In Salvator Rosa's pictures we find a wild combination of human and other figures with landscape, but we seldom in this artist's works are much variety of feeling: wild, grand, and gloomy are the landscapes which have come from his pencil. Rubens's landscapes are very much like coloured photography; see, for instance, the view of his chateau, preserved in the National Gallery. How different is the treatment of that view from the bold and magical arrangement of his historical pieces. If an unknown artist of the present day were to send such a landscape as that by Rembrandt of "Tobit and the Fish" to the Royal Academy exhibition, it is doubtful if it would find a place even in the highest row. There are, however, some other landscapes by this artist; for instance, the light and dark views of the "Windmill," which are wonders in their way.

Claude Lorraine is all sweetness and calm; in looking at his pictures you fancy that you can hear the soft sound of minstrelsy, the feet-fall of the dancers, the gurgling of the water, and even the touch of the falling leaves. The famous Claude has not, however, essayed to paint the blasts before the thunder-storm—the storm itself—the flitting glimpses of sunshine and rain—or the fierce contentions of the seas and rocks.

In the landscape pictures by Poussin, fine in broad and transparent depths of shadow, and most beautifully and boldly manipulated in all parts,—descending angels and other allegorical representations mar and destroy the illusion of the scenes according to our present ideas.

In our school, in looking at the works of Richard Wilson, it is impossible not to recognise the poetical conception and the grandeur of many of them. They are, however, not transcripts of nature.

Some of Gainsborough's are sweet and faithful; but he has not attempted very lofty flights. Constable's pictures are boldly-chosen points of English scenery—cornfields, locks, distant views of towns and hills,—over which are often rainbows and showers.

In Turner's pictures we have a combination of the best qualities of many painters. In some he conveys to us the soft and still feeling of Claude; in others, the wild and poetic fancies of Salvator Rosa. Moreover, in many of the works of Turner there is a sentiment shown in the introduction of the figures which conveys the mind to circumstances connected with the spot, but which do not, like the allegorical introductions of Poussin, destroy the harmony of the scenes. For instance, in his drawing of the spot on which Harold the Saxon is supposed to have died at the battle of Hastings, he has introduced a couple of greyhounds in pursuit of a hare, and so faded is poor puss, that we feel certain the dogs will

worry her upon the spot where the king is said to have died. Then, how wonderful, yet fit, is his treatment of Stonehenge,—that mysterious circle! We have seen nothing in painting which conveys so fine a notion of a war of the elements as do the thunder clouds and lightning which hover over and fly about the huge stones. In the foreground the shepherd and part of his flock have been stricken; not the least touching part of this incident is a little lamb attempting to suckle its dead dam. Equally fine is Turner's treatment of the Land's-End, in Cornwall;—how the waves dash about, and the birds whirl in the mist, and how mysteriously the distant sea mixes with the clouds! Compare this with the quiet, luxurious view at Ivybridge. In looking at the first, we fancy that the painter must have been reared amidst wilds and storms; and at the last it is difficult to think that the mind which conceived, and the hand which executed this sweet picture, could have skill in anything unconnected with green leaves and singing birds.

How different, however, are these from the magnificent pictures of "The Rise and Fall of Carthage," "The Vale of Tempe," and other subjects of the highest class. In thinking of this great painter, picture after picture crowds upon the mind: the battered war-ship towed to its last berth by the little steamer, the whole lighted by the setting sun; the view of Plymouth with many groups in the foreground; the fine pictures of Oxford; the still and truly English scene at Bolton Abbey; the view from near Bristol: in this a schoolboy has fastened his kite in the branches of a tree,—might the painter have thought of Chatterton's flight and tangled end when he introduced this? It would, however, take many pages to enumerate Turner's varied works. The purpose of the writer is, however, merely to direct attention to the numerous works of this great painter, in order that they may contrast his productions with the landscape-painters who have gone before, and note how great he is.

#### AN ARTIST.

#### THE SURREY SIDE OF THE METROPOLIS.

PROMPTED by reading your remarks on "The Insanitary State of the Houses of Parliament," in respect of the nauseous and pernicious trades carried on in Lambeth, I am induced to offer a few remarks and suggestions in furtherance, and for the general improvement of the metropolis. As there are two sides to a question, so are there to our river Thames, but this fact seems hitherto not to have been known, or duly considered. London, in its metropolitan sense and locality, lies, in fact, on both sides of the river, but improvement has been confined to one. West, north, and east, the metropolis has been of late years vastly improved, but the south has been wholly neglected: why should this be? The increased and increasing value of land and houses on the north side of the river is in strange contrast with that of the south: and again I say, why should that be?

The deteriorated properties in the Waterloo-road, Stamford-street, and surrounding localities, prove the strange contrast, yet might be made far more valuable and creditable to the metropolis by the Government turning some slight share of its attention in that direction. For instance, there stands the magnificent structure Waterloo-bridge: at the north foot is the elaborate and ornamental Somerset House, recently so much improved, and rendering the approach to the bridge so perfect; but on the Surrey side what is there to balance the eligibility? Absolutely nothing; or worse than nothing! Yet there is an ample space to let of ground belonging in freehold to the Duchy of Cornwall. Public offices are wanted—Somerset House is gorged with them,—why not build some auxiliary offices on the Surrey side, of a style of architecture corresponding with Somerset House, and completing the magnificence of the bridge? "Lancaster-place," is sufficiently met on the Surrey side by "Tillotson-place," and it is on the eastern foot of the bridge that defect exists. If the more once took place as suggested, and the improved opening from Stamford-street to the Borough was perfectly, the north side of London would be soon greatly relieved of overcrowding by some of the business houses and professionals availing themselves of the cheaper and more central locality thus offered to them in improved availability; for the South-Western and South-Eastern lines of railway would equally be convenient. We are stretching across the Atlantic: France and Ireland are as nothing to us in the way of distance; and yet Lambeth, and the Surrey side,—"Transpottine," as it is sarcastically called,—is taboed as an outlandish place!

I seriously suggest, Sir, through the effective medium of your pages, that London should not be further extended either west, north, or east, but that Government should direct all extension and improvement southwards, even to the foot of the Surrey Hills, as now on the north to Highgate and Hampstead,—

for the metropolis would then be concentrated more into a radius, and rendered more convenient for inter-communication.

The Prince of Wales has a great personal interest in this suggestion, which would render his "Duchy of Cornwall" more integrally, respectfully, and profitably a portion of the great metropolis of the world, known throughout the earth by the high name of "London." W—D WYKES.

#### THE MEDIEVAL SOCIETY.

THE object of the society which is being organized under this title is the collection of copies of works of art of all kinds executed during the Middle Ages, but especially of those executed before the end of the thirteenth century; "and this not as counteracting the independent influence of our own time upon its own art, but with the view of promoting the study of the Medieval period as the highest and purest of former times." The collection would consist of—

Casts of sculpture, especially of the French and Italian schools.

Copies of tracings of frescoes and other wall paintings.

Copies and casts of works in metal.

Rubbings of bronzes and copies or tracings of stained glass.

Notes of schemes of decoration in sculpture, painting, and glass, carried out in the Middle Ages, with a view to leading to the more careful treatment of its story in modern sculpture, &c.

Books bearing upon the various branches of art and upon costume, &c.

Photographs, and especially of any sculpture threatened with restoration.

A wardrobe of costumes, or authenticated reproductions of said costumes, for the use of painters, and

Specimens of Eastern textile fabrics, and of ceramic art.

Amongst the regulations it is set forth that the committee are "to exercise great care in the selection of objects to be admitted into their Museum; taking pains to exclude all works of inferior art, and to obtain, purchase, or receive such only as in their opinion are of really good character." Further, the committee are "to be prohibited from receiving any ancient objects of art taken from their proper and original position, with a view to forming a collection of antiquities. The collection of illuminated MSS. pictures, ivories, coins, or seals, vestments, furniture, or movables, would not be open to this objection, but portions of ancient sculpture, painting on walls, or the like, to be scrupulously rejected, as the object of the society is in no sense antiquarian, and one of its leading principles will always be the preservation of ancient art with the most jealous care in its original locality."

Without the slightest desire to impede or discourage the gentlemen who have associated themselves to form this society, the accomplishment of their views would seem to lie so completely within the province of the established "Architectural Museum," that we would much rather see them using their energies and influence to enlarge the scope and increase the usefulness of the existing society than forming a new one. We hold the same opinion with respect to the Archaeological Societies. The dissipation of forces and the multiplication of expenses are to be regretted.

#### SCHMIDT'S ORGANS: ST. PAUL'S CATHEDRAL.

I was glad to see lately in the *Builder*, the mild castigation of one who had termed St. Paul's organ an "outrageous" instrument; with the very suspicious addition, that some other large organ would be soon purchasable. The assertion, that "Father Schmidt" was not a known or eminent organ-builder, was somewhat overmuch. I believe he was invited over to England after the "Great Fire"; and common sense will dictate that a maker of "no mark" or prestige could hardly have jumped into such extensive employment. Perhaps it was hardly known to the first of your correspondents, that besides his metropolitan labours he was engaged in distant places. There was, about thirty years ago, a small, but very sweet-toned organ, by him, in the remote cathedral of *St. David's*. The only cathedral in Wales where there is daily choral service.

The organs of St. Mary's, Oxford, and St. Paul's, Bedford, were by Schmidt; the latter, in lieu of repairs, was substituted about fifteen years ago by a modern mediocre one. But one of his best works out of London may have been at *Trinity College, Cambridge*—the swell being afterwards added by *Green*, and the pedal-pipes by *Henry*.

Is it correct, as reported to me by a tourist, that the organ in *St. Patrick's*, Dublin, was taken from the Spanish Armada? The same thing is reported, positively, of a clock, with outside "jacks"—like



Old "St. Dunstan's," and Carfax, Oxford; also, of an unfinished communion-table at Rye, Sussex. The organ at Trinity College, Cambridge, has its bellows worked by a wheel—situated from the organ: the two at St. Paul's are in a low apartment under the organ-loft, leaving the lower part of the case free—mainly, I think, for "pedal" pipes.

I never saw an allusion to a notice, either in the *Spectator* or *Guardian*, that "Mr. Renatus Harris," Schmidt's rival, who built St. Andrew's, Holborn, organ, "had an ambition to erect an organ over the west door of St. Paul's Cathedral, to exceed anything of the kind yet known."

Having begun with "St. Paul's," allow me to express a "national" regret, knowing that foreigners, as well as natives, visit it, that "more is not made" of it in the way of handsomeness and decoration. The half-consecrated inscription to Sir Christopher Wren—"Si monumentum requiris," &c.—has been engraved, somewhere, in pieces; and a thing which, if endurable, should be temporary—covered with rusty red cloth—occupies its place. Will no one advocate the restoration of Sir C. Wren's "monument" in his principal work? The east end has been a little improved; and the communion-cloth has some old gold fringe. The "well-worn" one of the pulpit never had: curtains and other things have been "dipped" till they are "no colour," handsome replacement not having been preferred.

The musical services have, for a considerable time past, done much credit to all concerned; rendering any other deficiencies regrettable. CARRO.

#### RUINOUS BUILDINGS, METROPOLIS.

At Marlborough-street, on the 15th, a great deal of time was devoted by Mr. Beadon to the hearing of summonses served on the owners or occupiers of dilapidated or highly ruinous buildings in the district of this court.

It was contended by a professional gentleman (understood to be surveyor to the Marquis of Salisbury) who appeared for the owner of the property, No. 5, Cranbourne-passage, that the authorities had exercised a very arbitrary power in coming on the premises and giving peremptory directions respecting them, which had put his client to considerable expense, and that unnecessarily. It was stated that the intention had been to take down the dangerous part, but they had now been called upon to shore up a portion, and thus increase the expense, and that there was no occasion for this. He was of opinion that the magistrate's time was very unnecessarily occupied by summonses for such cases as the one in question.

Mr. Beadon said he was quite of another opinion. A very salutary Act of Parliament had been properly put into operation, and was being carried out with judicious effect in the matter of old and dilapidated premises dangerous to the public. Time occupied in the investigation of these cases could not be unnecessarily bestowed. The owner or occupier was personally liable, and where neither could be readily found, it was required by the Act simply to affix a notice on the door of the dangerous premises complained of.

Ordered to be put in proper repair, or taken down within fourteen days.

#### NOTES UPON IRON.

(From our Correspondent at Wolverhampton.)

THE past week has witnessed an improved demand for iron. The orders have come chiefly from the United States and our South American account. With the United States there is now more activity, because of the nearness of the period at which the "fall" trade must cease. The orders have been kept back so long that there does not remain sufficient time before they must be executed for the making of all the iron needed in the American market.

The home demand is tolerably good, but inquires for comparatively small quantities; and no very large demand is expected from America after the "fall" trade has been supplied. But very few calculations to be relied on can be made in relation to the future of the American market.

The Indian disturbances are not checking very much the trade with India in respect of the railways in progress there, as tenders have been asked for within the past day or two for best South Staffordshire iron for such uses.

The prices that were determined should rule the "trade" throughout the quarter do not appear to be by any means adhered to by all the members of that combination. We have heard that prices ranging from 5s. to 30s. below that scale have been accepted by such houses. There is now too much competition in the manufacture of iron to permit of the reverse of this being the rule. If the "fall" trade of America should not be followed by an equally good general demand from the States, it is more than likely that this variation in prices will be so marked at the time

of the next preliminary meeting, that a determination to lower prices in council will be come to. At the same time there are some few houses in the trade who have acquired so fair a name as to secure a constant demand at the "trade" rates.

At Wolverhampton, on Wednesday, and at Birmingham yesterday (Thursday), pigs were offered largely, without, however, any very marked anxiety to press sales.

#### EXPENDITURE BY MIDDLESEX MAGISTRATES.

MR. EDITOR.—At a recent special meeting of the Middlesex magistrates, the following resolution,—"That the plans which were laid before the court on the 16th July instant, for altering and enlarging the County Lunatic Asylum at Colney Hatch, be approved, and that the same be carried into execution, at an expense not exceeding 70,000l." was carried by a large majority. These gentlemen deal with thousands with the greatest coolness; but is it always with equal wisdom? May we not inquire what is now going to be done, and under whose direction the 70,000l. are to be spent? If I remember rightly, this was about the sum specified for the total expenditure when designs for the building were first sought by public competition. A STRUGGLING RATE-PAYER.

#### TASTE.

THE man whose mind has been prepared by study and cultivation for receiving the impressions of works of genius, ought to possess taste in proportion to his knowledge and of habit of contemplating beautiful objects. The mind naturally takes its tone and complexion from objects which it habitually contemplates. We should never forget the ancient advice: *Diligently contemplate excellent things*. The mind becomes like them. On this principle the Greeks, whom we mention from their precedence to other nations in these matters, made a practice of educating the eye of the public by presenting it with the most refined productions of their favourite artists: where they collected in large numbers, there the choicest specimens of art stood ranged before them.

A public monument is as useful in promoting the taste when it is beautiful, as it is certain to corrupt it, when it is not so.—*Emerie David*.

A public monument of bad taste, erected in a time when there existed skillful artists, is an injury done to the nation and to the age which witnessed its erection; a permanent object of shame.—*Vasari*.

It is wrong to say, as some have, that taste is a faculty of mind distinct from the imagination and the judgment; but it is plainly the result of the joint exertion of these two powers. Elegant taste is nothing else than sensibility, directed by good sense. If taste, then, be the effect of the imagination (upon which sensibility depends), and of the judgment (on which good sense depends) taken together, it will be asked how far the judgment ought to interpose in regulating the power of imagination, or of correcting its exuberances, in order to produce good taste.—*Dalzel*—"Lectures."

It is taste which, according to the different degrees of perfection in which it is possessed, distinguishes nations that are improved from those that are barbarous, and which in the same country renders one man superior to another.

We may form a sufficient notion of the taste of any nation, in any country, and at any period, by the state of its architecture.

Prescott, in his "History of the Conquest of Peru," writes:—"The monuments of China, of Hindostan, and of Central America, are all indicative of an immature period, in which the imagination has not been disciplined by study, and which therefore, in its best results, betrays only the ill-regulated aspirations after the beautiful that belong to a semi-civilised people."

The Peruvian architecture, bearing also the general characteristics of an imperfect state of refinement, had still its peculiar character, and so uniform was that character, that the edifices throughout the country seem to have been all cast in the same mould.

The architecture of the Incas is characterized by simplicity, symmetry, and solidity. It may seem unphilosophical to condemn the peculiar fashion of a nation as indicating want of taste, because its standard of taste differs from our own; yet there is an incongruity in the composition of the Peruvian buildings, which argues a very imperfect acquaintance with the first principles of architecture. While they put together their bulky masses of porphyry and granite with the nicest art, they were incapable of mortising their timbers, and in their ignorance of iron, knew no better way of holding the timbers together than tying them with thongs. In the same incongruous spirit, the building that was thatched with straw and illuminated by a window, was glowing with tapestries of gold and stone! These are the incongruities of a rude people, among whom the

arts are but partially developed. It might not be difficult to find examples of like inconsistency in the architecture and domestic arrangements of our Anglo-Saxon, and, at a still later period, of our Norman ancestors.

Yet the buildings of the Incas were accommodated to the character of the climate, and were well fitted to resist those terrible convulsions which belong to the land of the volcanoes.

But of course the displeasure that arises from such incongruities is attributable to circumstances, to want of resources, and may not be the fault of those engaged in them.

I have witnessed in Australia and New Zealand similar absurdities and deficiencies to those mentioned by Prescott, in Peru. In the colonies it is a very common thing for every man to be his own architect: his materials consisting only of shingles. Nothing great can be expected of him; but had he genius, he would dignify even them. One of the class I speak of—for he might be a returned convict,—scarcely ever beheld beauty, has no perception of it, and is altogether destitute of taste: he is wealthy now, and the owner of a house, and he has bedaubed gaudy colours upon it—red bulls of stone on blue pier-gates; and the passer-by smiles at the vain attempt of the uncultivated man to excite admiration. F. L.

#### THE AIR-SYPHON VENTILATOR.

THE author of a paper read before the Statistical Society of Manchester (March 15th, 1856) says:—"I have little faith in scientific ventilation, so called, whether the downward mode, the upward mode, or the circular mode,"—a view of the subject which I cannot adopt. The writer feels, on the contrary, that the non-success and disappointments hitherto incidental to apparently well-designed structural arrangements have arisen rather from want than from redundancy of scientific basis and coadaptation. Instances, indeed, are constantly coming before us, which plainly show, with regard to pneumatic phenomena, in connection with ventilation, that although much is well known, there is still something that is either not generally understood, or, if understood, not recognised and acted upon.

A mistaken supposition appears to have been heretofore hastily taken up, that the effects obtained by the use of a bent tube or air-syphon, in the processes of ventilation, were attributed to the bend itself; but according to the specification, as well, indeed, as to other descriptions given by the patentee, the invention is stated to consist "of applying a principle which he has found to prevail in the atmosphere; or, in other words, of the practical appropriation or employment of 'operations constantly taking place in the atmosphere.'"

It appears to be only in accordance with a rational view of the subject that as certain changes and movements do take place in the extremely sensitive and mobile atmosphere, even under the slightest thermometrical or hygrometrical changes of its condition, different from those that take place under similar variations in less sensitive and less mobile fluids, as water, it would be neither philosophical nor logical to deny that in two such tubes, one being immersed in water, the other in atmospheric air, and all other things being equal, the contents of the latter might be liable to movements dependent upon its elastic and mobile qualities; while the less active contents of the former may remain, practically speaking, still.

The different methods of artificial ventilation known as the plenum and the vacuum system, whether produced by the agency of heat, or of mechanical power, are devised and applied as if atmospheric air existed under exactly the same relations to these forces as water; in other words, as if the former were as insensitive and inactive a body as the latter,—notwithstanding that the one is an inelastic body, retaining practically the same volume at all temperatures, between the freezing and the boiling points, and the other an extremely elastic body, changing its volume and its place with every variation of heat or of humidity; and although, moreover, the one body is homogeneous, the other heterogeneous, consisting of air and vapour, the latter of which being lighter than air, is constantly rising through the atmosphere to its higher regions.

It is certain that atmospheric air besides obeying, like water, certain forces, whether impulsive or attractive, possesses and exercises inherent qualities which have not hitherto been sufficiently taken into account in practical ventilation.

Those points which appear to deserve more of the attention of architects, embrace, indeed, considerations relating to the susceptibilities and the actions of atmospheric air, under influences to which they must be more or less liable, from natural causes, in chambers, or houses, or other buildings.

This raises the question whether our domestic and other buildings can, under the operations of natural



laws only, be brought to a state which renders them capable of re-acting on the atmosphere in such a way as to bring its inherent elasticity and activity into operation.

Is the atmosphere of a house, for example (and I will assume that it is a house with the doors and windows closed, to exclude the impulse of winds, and what is called the plenum agency, and without any source of artificial heat, in order to exclude also the vacuum agency), in exactly the same quiescent condition as the water in a ship, or (if it were possible), in such a house at the bottom of a lake, or of a calm sea?

Supposing a ship or a house, thus filled and surrounded by water, to be liable to the same natural accessions of terrestrial heat as a similar ship or house filled and surrounded by atmospheric air on the surface of the earth would be, can we undertake to deny, considering the different relations existing between heat and water, and heat and atmospheric air, that there are at least *prima facie* reasons for suspending our opinion before we pronounce that the air would not under such accessions of heat be brought into the exercise of certain movements consequent upon expansion and diminished specific gravity, which water at similar temperatures does not exercise. We scarcely need ask whether the atmosphere within a house, being subject to influences which that out of doors is not subject to, is liable to acquire a higher temperature from natural causes than the external air.

If we take, as an example, a piece of ground not built upon—an open common—and a similar piece, say adjoining, but with a house or other building upon it, the terrestrial heat given out by the uncovered space of ground would be at once radiated into space and lost, while that given out by the ground covered by a building would be communicated by radiation, conduction, &c. to all parts of the house itself, and would be accumulated, in fact, to be again given out to the contained air; thus becoming, quite independently of artificial causes, an agent capable of disturbing the equilibrium between the internal and the external atmosphere, and causing inevitable movements to take place.

If we still further suppose the building to be divided into apartments, then some would be so situated as to receive more, others less, of the heat: the warmer chambers or rooms would act upon the atmospheres of the less warm, and the larger would act upon the atmospheres of the smaller.

From these spontaneous influences, and we may say actions, the fluids cannot be free; indeed a house, even when totally free from artificial heat, is still a pneumatic instrument, in which a regular series of movements take place in this or that direction, accordingly as the atmosphere in the different parts may vary in temperature and in humidity, and by consequence in specific gravity.

Without further pursuing this interesting subject at this moment, allow me to add that we should rather foster than repress the association of science with our architectural designs, in regard to ventilation, as well as in regard to the other great and useful objects which are dependent for their fulfilment upon the architect's skill; and especially encourage the study of phenomena which help to a better understanding of the true susceptibilities and tendencies of our atmosphere, and of the seeming capricious powers by which, in our dwellings, it eludes authority, and appears to obey irregular and almost mysterious impulses, to go when we say come, to come when we say go, to be subtle in will, and intractable in practice. E. R.

#### ARCHITECTURAL "FOLLIES."

It would be easy to discover various efforts of human labour, not only in literature, but in various departments of art, that merit the title of 'Follies.' Are there not piles upon piles of books on the shelves of the British Museum, and elsewhere, so eccentric in the choice of subject, so totally useless to mankind, past or present,—so extensive and elaborate, that at times we have looked with wonder and dismay upon specimens of these large and unmeaning tomes, and classed them among the follies of humanity? The Follies which have been perpetrated on canvass, and in the more cunning marble, are also numerous: examples will suggest themselves to many; we need not therefore enter into particulars.

In architecture many singular devices have been reared to a substantial form, and well deserve the name of a Folly. The Chinese bridges and temples of George III.'s days were follies, and the plucking the colossal equestrian statue of the Duke of Wellington on the top of its present pedestal, was an undoubted architectural Folly. So was the Pavilion at Brighton; and also the never-to-be-forgotten monument once at King's-cross.

In our modern cemeteries innumerable Follies meet the eye, and which, instead of creating awe and reverence for the grave, and hallowed feelings for the de-

parted, raise up notions of pity and contempt for the taste which there gaudily and inappropriately decks the tomb.

In wandering in London streets, it is scarcely possible to perform a half-hour's journey without having the sight offended by objects which should be written down with those matters above recorded. Many of them are, however, devoted to such useful purposes that they must be looked at with some consideration.

Richly as they deserve it, the things we have alluded to have not received the title of Follies from the general voice of the public, as have those erections which it is our present object more particularly to mention.

In many parts of England may be noticed what seem the ruins of some ancient castle boldly surmounting a picturesque eminence, and on inquiring—hoping to gather the particulars of "old world" events—all feelings of romance or poetry are destroyed by the information—"Oh, that's Jones's Folly," or it may be, "that's Brown's Folly," or "Cook's Folly." Many have sketched some of these Follies in the belief of their antiquity, and have been as much disgusted as was Jonathan Oldbuck at old Bluegown's revelations. Some Follies are called after the name of the place on which they are erected—such as Byker Folly.

Not long since a well-intentioned friend mentioned the discovery which he had made, in the eastern part of London, of an ancient house with Tudor windows and other quaint and peculiar features. Without much loss of time, we proceeded in search of a vestige of the old metropolis which seemingly had escaped our careful search; but lo! on reaching the spot, we found that it was a Folly, and known as such by every man, woman, and child in the neighbourhood.

It must be acknowledged that many of the Follies are picturesque, but at the same time it must not be forgotten that the greater part of them are "shams," and known to be such by those who assisted in building them. It would have been better to have spent the money in building schools and cottages: in such a case the labourer would have felt that he was bestowing his handiwork on matters of utility. We have but glanced at this subject, but it is one worthy of thought.

#### J. B. A. LASSUS, ARCHITECT.

M. ALFRED DANCEL, a friend of the deceased, has given a memoir of the life of M. Lassus, the restorer of some of the finest structures of France. He is represented as one of easy access, of a naturally kind disposition of heart, and of an amiable temper even when he had to command. With him and his assistants, in the execution of the different monuments he erected, he lived on the footing of mutual respect and perfect goodwill.

Jean Baptiste Adolphe Lassus was born in Paris, and entered the Academy of Arts in 1828, when the so-called Romantic route—tasted first in art and literature. The paintings of E. Delacroix, and the sculptures of David d'Angers, electrified also the young architect. One of the *élèves de Rome*, a quality of great weight with French artists, H. Labrousse, had greatly enriched the Academy by sending in a drawing of the Greek Doric temple of Neptune at Paestum; and thus, by scornful Roman architecture so near to his hands, appealed directly to the great Hellenic prototypes. For this the Academy never pardoned Labrousse, not even up to this day, but he had a satisfaction that the artists of young France saw therein the light of brighter days. Thus three of them, Greuter, Toudouze, and Lassus (all now dead), offered to the bold innovator to open an atelier of their own. Lassus began then the study of French architectural monuments. In 1833 he first exhibited the plans of the Tuilleries, such as they have risen out of the brains of Philibert Delorme. From this time he turned his entire attention to the edifices of the Pointed style, and sought to apply it as much as possible to religious edifices.

In 1835 he made a design for the restoration of the Ste. Chapelle. Up to 1837 he was engaged with the refectory of the priory of St. Martin des Champs, now the library of the Conservatoire des Arts et Métiers; when he was nominated, conjointly with his friend M. Greuter, architect of the church of St. Severin. He added to the western façade of this church the gate of St. Pierre-aux-Bœufs. In 1838 he presided over the restoration of St. Germain l'Auxerrois, first under M. Gode, who has left behind him the triste fame of mutilator of almost all the churches of Paris; then he acted independently. "It was then," says M. Docel, "that we saw the restoration of the altars, the lattice-work, and the stalls really inspired by models of the Middle Ages; it was then we began to paint on the walls of churches and chapels either legendary tales connected with the history and tradition of the structure, or ornaments and decorations—

an expedient resorted to now over the whole of Europe. It was also for St. Germain l'Auxerrois that was made the first '*vitrail légendaire*,' after patterns of the thirteenth century. In 1843 M. Lassus attained the goal at which every great mind aims,—to get rid of every extraneous letter, and to work out his own conceptions. He became the architect of the church of St. Nicolas, at Nantes. M. Lassus died on the 11th July, 1857, at Vichy, where he had gone for the benefit of his health.

#### RECENT BUILDING PATENTS.\*

NICOLAUS CHARLES SZERELMEY, Bermuda-place, Bath-road, Queen's-road, Peckham.—*Preparing Combinations of Materials for rendering Walls and other Structures waterproof.* Dated 2nd January, 1857.—The improved "Greek cements" are produced in the following manner:—The patentee takes about twelve gallons water, two gallons blood, twenty-five pounds ground bricks, twelve and a half pounds of powdered copper slag, twelve and a half pounds of powdered iron slag, sixteen pounds and a half of argillaceous earth, and six and a quarter pounds of gaseous matter produced from milk. These matters are boiled together for about two hours, and this is called compound or preparation No. 1. In order to prepare another or second preparation or compound, the following matters are employed:—About ten pounds of gas or coal tar, or sometimes in place thereof linseed oil, at other times, resin or asphalt, about six and a half pounds of hydraulic lime, six and a half pounds of grit, six and a half pounds of calcined flint. These matters are boiled together in a suitable iron pot for about three hours: they are then, by means of an iron ladle, transferred to a second iron pot in such manner that the air may come freely in contact, and after the mixture has been allowed to cool, it is again boiled until it spontaneously bursts into combustion, and after it has burned for a very short time the fire is extinguished by means of a close-fitting cover. This combination or preparation is called No. 2. These cements, though they may be capable of separate use, are preferred to be employed in succession on the wall or other structure.

THOMAS HOLMES, Pendleton, Lancashire.—*Consumption of Smoke in furnaces or fireplaces.* Dated 6th January, 1857.—The patentee mixes with the fuel a certain quantity of a neutral or acid salt of an alkali, such as common salt. Every hundred weight of coals is mixed with three pounds and a half of salt. He also sometimes uses in the same manner mixtures of one or more of the above neutral or acid salts of the alkalies with lime, or substances containing lime, or barytes, or magnesia.

CHARLES COOK, Mount-street, Grosvenor-square.—*Apparatus for generating Draughts in Chimneys, and for other purposes.* Dated 6th January, 1857.—This apparatus is to be affixed to a chimney, or it may be applied in a skylight, or at the exit of any flue or channel in communication with the chamber to be ventilated. In all cases it must be exposed to the action of the wind. It consists of a kind of fan or series of blades placed in a cam or cylinder forming the top of the chimney. To produce the rotation of the fan, the inventor places a fan wheel on the top of the spindle, which wheel is exposed to the action of the wind. He curves or inclines these blades so that the one side presented to the action of the wind is hollow, and readily catches the wind, while the back part of another blade presented in the same direction on the opposite side of the spindle is so disposed as to throw off the wind.—*Not proceeded with.*

JAMES HARRIS, Hanwell, Middlesex.—*An Improved Lock, and Method of acting upon Lock-Bolts, Latches, Taps, and Valves, Railway and other Signals, Bells, and other like Apparatus.* Dated 8th January, 1857.—This invention consists in the method of employing compressed air in apparatus constructed as follows, and for the purposes explained.—The apparatus consists of two cylinders with air-tight pistons and valves, or of corrugated elastic air-tight cylinders secured at the ends to wood and other material, and made to expand or close after the manner of a concertina or bellows; or of elastic air-tight spheres or spherical-ended cylinders worked by semi-spherical pistons. The connections from one part of the apparatus to the other are made by means of metal or other pipes. He also employs proof or test signals which indicate to the operator that the object is effected. The invention also consists in an improved lock adapted to be worked by his apparatus, and in carrying out this part of his invention a cylinder is placed in the lock furnished with an air-tight piston attached to the bolt. At the back of the piston is a powerful spring for forcing the bolt forward, and thereby effecting the locking, and when the bolt is forced forward by the spring, a tumbler working in a cylinder with a piston, with or without a diaphragm

\* Selected from lists in the Engineer journal.



at bottom, falls into a notch in the bolt, keeping it in position as in an ordinary lock. A second tumbler is also provided with a catch to hold the bolt back against the spring when unlocked. The other part of the apparatus connected with the lock consists of a small air-pump, placed, say, in a bed-room above, or in any other convenient place, the distance being of no consequence. There is also at the air-pump end of the lock an alarm acted on either by the elastic cylinder or the piston of the pump. The same apparatus may be used much simplified, that is, with a cylinder and spring only for latches of gates and doors. The opening and shutting of valves and cocks, and the working of signals and other apparatus, may be effected by similar means. This invention is adapted to house, factory, and other signals. The same apparatus, with the addition of self-acting equilibrium valves, and of catches, levers, and springs, may be applied for effecting the ringing of ordinary bells, or striking once upon a bell.

ALEXANDER McDONALD, Aberdeen.—*Manufacture of Columns, Pilasters, and other similar Structures of Granite, Marble, Porphyry, Jasper, Serpentine, Slate, and other Stones, capable of receiving a high Polish.* Dated 8th January, 1857.—The improvements relate to means by which, when such structures have to be formed of several pieces of such material, each part may be more correctly worked in relation to the others during formation, so that when the parts are ultimately fixed in position, they may appear as one solid mass, or as nearly so as possible. The several pieces or blocks to compose the finished structure, as, for instance, a column, are temporarily secured together by a rod or rods passed through a hole or holes in the series, aided by nuts and screws or other suitable means, after they are dressed or partially so. After they are finished in the dressing they are then polished on a turning-lathe or otherwise on the surface as the case may require. The joinings of the different pieces in contact are made accurate one to the other, by having a saw or other suitable instrument inserted between them for some little distance towards the centre. When the polishing or other finishing of the outer surface is completed, and the parts are separated for transit, the ends of the separate blocks are to be dressed down at least to the level of the saw or other cut just referred to, when the parts will be ready for being put up.

LOUIS JULIEN BRETHON, Tours, France.—*Machinery for Manufacturing Draining Pipes, Bricks, Tiles, and other similar Plastic Articles.* Dated 10th January, 1857.—This improved machine is applied to the manufacture of solid or of perforated bricks, of tiles and draining pipes, and other articles made of clay having a regular cross section. A strong vertical cast-iron screw revolving freely in the middle of an upright cast-iron cylinder, a rotative motion is given to the helix, either by horse or steam power, and the clay is thrown with a shovel into the upper box of the cylinder as it is dug out from the ground without any other preparation than that of being mixed with water: it is ground, mingled, malaxated, and freed from hard or filamentous substances, and finally the clay is forced down through the side moulding apertures for producing either pipes, bricks, tiles, or other articles of that description.

JOHN FRANCIS PORTER, Park-street, Westminster.—*Manufacture of Bricks and other Articles of Clay and Brick-earth, or of the like Materials.* Dated 10th January, 1857.—The first part of this invention consists in improvements in the preparation of clay for making bricks and other articles. These improvements have reference to a pug-mill described in a specification of letters patent, dated the 31st day of January, 1855. The second part of the invention consists of apparatus for moulding bricks and other articles, by which apparatus the material used in the formation of such articles is moulded at less cost from all descriptions of clay, and better effected in respect to the inferior kinds of clay, that is, the less plastic sorts of clay. The patentee performs the moulding of the bricks as follows:—The clay is delivered in any suitable manner to the machine, or from a pug-mill, in the ordinary way, through an opening of any convenient size or form, and is received on and by a series of rollers covered with a porous fabric, some of which are caused to revolve, in order to compress or roll out the clay, or to mould the same into the required form. The bricks or other articles are then divided by cutting wires disposed in the usual way.

EDWARD LOOS, Leicester-square, London.—*Manufacture of Cement, Mortar, Concrete, and artificial Stone.* Dated 20th December, 1856.—The patentee manufactures Roman mortar of different qualities, with a certain proportion of lime and a chemically calculated quantity of moderately fine sand, and powdered substances of a silicious, argillaceous, aluminous, alkaline, coagulative, and colouring nature, as well as natural and artificial sulphates and carbonates, as may be required. For certain more massive constructions

he unites his process with the ancient system of Roman building. He forms a double pavement, or casing of bricks or other suitable stones, or of any artificial Roman stone, and adds any rubbish mortar in this casing, regularly building each layer. The artificial stone is manufactured from the above described cement.

JAMES ROBERTSON DICK, Alowick, Northumberland.—*Window Sashes.* Dated 23rd December, 1856.—This invention, which has for its object to improve the form and construction of window-sashes, with the view to obviate the present dangerous inconveniences attendant upon the painting, glazing, cleaning, or otherwise of windows from the outside, consists in the sides or outer portions of the sash frames being formed in two parts, and bolted or locked together so as to slide within the window-frame attached to the cords and weights in the ordinary manner, and admit of the sash being easily separated when required, and lowered into the room without its removal from the frame or heading, each side of the sash being provided with a catch and pivot for uniting the same to the sliding portions thereof, and maintaining it in a vertical position with the window-frame. The invention cannot be fully described without reference to the drawings.

WILLIAM FLAYLER MILES, Patent Lock Factory, near the Forest-hill Station, Surrey.—*Locks and Fastenings.* (A communication.) Dated 11th December, 1856.—In order to ensure greater security in respect to locks and fastenings, the parts in this invention are so arranged that a piece of paper, or of card, or of other material, may be introduced over the keyhole, and under a cover or plate of one face or side of the lock or fastening. The piece of card, or of paper, or of other material so introduced, has formed in it an opening or passage for a bolt or instrument to pass through it, and such bolt also passes through corresponding openings in the case of the lock or fastening, so that when the bolt or instrument has been introduced, and is locked or fastened by a spring catch or holding instrument, the keyhole cannot be got at without destroying or defacing the piece of card, or of other material covering the keyhole, as the covering material cannot be removed without unlocking or unfastening the bolt or instrument which is passed through the covering material, and such bolt or holding instrument cannot be withdrawn without being unlocked or released by the introduction of the key. The covering material may also be rendered still more secure by having its under surface marked or written on it, and it may be further rendered secure by having a seal form on its outer surface. By these means a lock or fastening cannot be opened without detection, whether by the use of a false key or by the proper key.

HENRY WIMBALL, Aldermaston, Berks.—*Apparatus for the Manufacture of Bricks, Tiles, Pipes, and other articles of a similar nature.* Dated 12th December, 1856.—This invention relates to a peculiar construction, arrangement, and combination of mechanism employed in the manufacture or production of bricks, tiles, and other similar articles, and consists in the application and use of a moveable carriage or platform, or a series of such carriages linked together, and caused to pass under or in connection with a pug mill, or other brick-making machine of that class, so that the extruding stream of clay or other plastic material is carried away from the machine by a continuous self-acting operation, the motion of the clay itself imparting the requisite traverse to the carriages, in place of such clay being removed by hand, or by an endless chain or set of rollers, as is at present the case in machines of this class now used.

## Books Received.

### VARIORUM.

MR. CHARLES R. WELD, the author of several pleasant and instructive vacation tours, has just produced a new one titled "Vacations in Ireland" (Longman and Co., publishers), in which the wild and still very little travelled districts in the west of our sister isle are sketched with a light and flowing pen, but interspersed with fewer archaeological memoranda than might have adorned and added interest to the author's sketches. We can add the testimony of our own pleasant personal reminiscences to those of Mr. Weld in respect to the districts visited, which the tourist will find to be full of interesting objects. The curious superstitions of the peasantry are not overlooked; nor are their hospitality, their humour, and their primitive simplicity. Fishing is a favourite and oft-recurring subject of notification with the author, as it doubtless will be with many tourists who follow in his footsteps; but still, after all, as we have said, we should have been additionally pleased with the book under notice, had a little more space been given to the many curious and interesting architectural remains with which Ireland is studded.—

In a couple of tracts titled "Dishonestly exposed: Report on Experiments made on board H.M.S. Imperieuse, in June 1856, with Prideaux's self-closing furnace valve-door, and the common door," and "Treatment of an Inventor by the Admiralty, an instructive narrative for Englishmen, particularly for those who are shareholders in steam ships," Mr. T. S. Prideaux shows, in a graphic and descriptive way, how the engineering officials of the Admiralty manage "not to do it." Without reference to the particular merits of Mr. Prideaux's invention, one can have little hesitation in coming to the conclusion, that unless his narrative be positively and wilfully false—which we have not the slightest reason to suspect it to be—there are officials in the Admiralty who do anything rather than their duty, either to their paymasters, the public, or their superiors at the Admiralty, and who ought not to be allowed either to "do it" or "not to do it" except for the shortest possible time. The trickery, falsehood, and injustice here positively charged against them ought to be investigated, and an example made either of those who were guilty of such malpractices, or of those who acquiesce in them of such conduct.—In "Metropolitan Workhouses and their inmates," a little tract just issued by Messrs. Longman and Co. various letters and other documents are reprinted for the purpose of supporting an endeavour to improve the administration of our poor houses, a much needed reform indeed. The precise object mainly aimed at may be gathered from the motto on the title-page, extracted from an article in the Quarterly Review for September, 1855.—"The poor-house, which is justly made distasteful to the able-bodied vagrant, should present a different aspect to those who are driven thither by no fault of their own: and the grievance we have to complain of is one which, for the sake of all concerned, should be remedied without delay."—Stenography, or a brief and simple System of Short-hand, by Morris Coleman" (Warr, 63, High Holborn), is a small pamphlet containing one of those many forms which experience and fancy teach the art of Stenography to assume. The basis of the present modification, like that of various others, is Taylor's, but practice alone can decide as to its special merits. There is a danger of making short-hand too short, but we do not say that is the case in the present instance. As to the best forms of alphabetical characters for current stenographic writing, we have already given a few hints of our own ideas, on a previous occasion, and need not recur to them now.

## Miscellaneous.

A DANUBIAN STEAM NAVIGATION COMPANY.—A company on limited liability principles is being formed, under highly respectable auspices, for the purpose of fully opening up, to the commercial enterprise of the west, those rich countries through which the Danube and its tributaries flow. Regular lines of screw barges or other vessels are proposed to be established by the company between Raab on the Danube, communicating by railway with Vienna, and New Besce, on the Theiss, the principal depot of that extensive corn-growing country from which Vienna and its environs are supplied; between Raab and Semlie, where there is an immense carrying trade in pigs; between Basinsch and Pesth, the line of a great coal trade; and between Kalfat and Galatz, and the Sulina bar, the line of transport for the large grain shipments to this country from Wallachia and Bulgaria, reloading at the latter places goods for transit inland. The promotion of personal intercourse by passenger traffic is also contemplated. Captain Charles G. Robinson, R.N. and F.G.S., is the marine superintendent of the new company, whose capital will be 300,000l., in 30,000 shares of 10l. each (deposit 1l. per share). Messrs. Barnett, Hoare and Co. are the London bankers to the new company.

PROPOSED FOOT BRIDGE OVER THAMES AT RICHMOND.—The executive committee of the Conservative Land Society having renewed negotiations for the erection of a foot-bridge across the Thames, in connection with the railway bridge, a deputation, consisting of Viscount Ingestre, M.P., Mr. Henry Powall (members of the committee), and Mr. George Morgan (their surveyor), accompanied by Mr. H. G. Day, of Isleworth, waited by appointment, last week, on the Hon. Charles Gore, Chief Commissioner, at the office of Woods and Forests, Whitehall. Mr. Morgan prepared a plan as an outwigger to the railway bridge, access to which would be gained at the Middlesex and Surrey ends by light spiral staircases. Objection, it may be recollected, has hitherto been made on the part of the Government, that the bridge would interfere with the Crown ferry rights. The deputation having submitted the plan and urged the great public importance of the proposed work in saving the long detour, by means of Richmond Bridge, between Richmond and Isleworth, Brentford, &c., were requested to communicate further information with respect to the limits of the ferries at Richmond and Isleworth.



**THE DECISION AS TO THE WELLINGTON MONUMENT.**—Sir, I trust that you will caution artists against entering into competition for the future, until they know that the artistic mind will form the majority amongst the judges: now I know the following to be a fact, as respects the Wellington Monument: That Mr. Cockerell, with his high sense of honour and modesty, told the judges, "that although he knew something of architecture, and had the credit of knowing something of sculpture, yet he felt that he was not capable to decide on such an important affair, and hoped he might be allowed to add some four or five artists of known ability to their number;" but the judges, as they imagine themselves "judges by Divine right," had no such modesty of conscience, and declined the proposition; so Mr. Cockerell, as you saw by the report, *withdrew*. Now, is not this anything but what it ought to be? and it is seen by the report, that they own that they never took into consideration the *side* of the proposed monument or of its *locality*. Then, what was the use, as you have said, of Sir Benjamin Hall sending out lithographic plans, sections, and views of the proposed site, if that was not to be considered?—A SCULPTOR.

**A SELF-ACTING SAFETY BUFFER BREAK.**—The self-acting buffer break, patented by Mr. William Lukyn, as described by the patentee, obtains its self-acting power from the collision of the buffers, which striking each other, either on collision of the carriages or at the control of the brakemen, the breaks are brought upon every wheel throughout the line in quick succession, but not at one blow, which would render the invention useless, from the shock it would create. The breaks are connected with the buffer rod by levers and a regulating break screw which prevents the wheels becoming locked. In shunting a train, a lever is attached to the tender, which communicates with a rod and coupling links, and passing along the centre of each carriage, relieves the buffer rod from the break. In starting a train, the whole operation consists in connecting the coupling links and throwing the lever forward, so that in the event of collision, by surprise, an accident, neglect, or carelessness, by two trains coming into collision, or any obstruction on the line, the buffers are designed to act upon each other and force the break upon the wheel of each opposing carriage throughout the line, thus greatly diminishing the effect of fatal disasters.

**PUBLIC DRINKING FOUNTAINS AND PUMPS.**—We have occasionally for many years urged the necessity of providing the public in towns with drinking fountains and pumps provided with iron cups or ladies chained to the erection; and it is gratifying to observe that gradually the general want is being supplied. There are already many more of these conveniences throughout the metropolis than there were some years since, though many more are still wanted. In Liverpool, Mr. Melly, though no teetotaler, has done much towards the same end, and at some little cost to himself, and we now hear that the same benevolent gentleman is taking steps to get drinking fountains introduced into Manchester. Birkenhead and Runcorn are following the example, and it is being urged at Preston. Several public pumps have been of late added to those at Doncaster by the Local Board of Health, and at Edinburgh the Rev. Dr. Begg has provided several with galvanized iron ladies, and Dr. W. P. Alison advises the provision of many more public drinking places, especially where closes (phonetically "closses," not closes) abound. He also, by the way, recommends the paving of these closes with waste material from the freestone quarries at Craigleith and Hailes, and the prohibition of the rebuilding of decayed close-houses except under a fixed rule of proportioning the height of the houses to the width of the intruding footway.

**IGNITION OF A WHOLE GASOMETER FULL OF GAS, AT ST. LUKE'S.**—An extraordinary occurrence took place during the thunder storm on Friday, the 14th inst. when Cheapside and many other portions of the metropolis were cast into utter darkness, on the one hand, while on the other the church steeples, far and wide, were lit up by the glare of an immense flame, which issued from one of the huge gasometers of the Chartered Gas Company, at their Brick-lane station in St. Luke's. An iron column of the gasometer had been struck by the lightning, and, falling, had canted it over so far as to allow the gas to escape, and at the same moment to be ignited, unaccountably, by the flash, as seems to be imagined, but more probably by some jet of burning gas near the gasometer. The occurrence has been called an explosion, but it was simply an ignition and consumption of the gas, which, in rushing out, would not be in that precise combination with the atmospheric air which is requisite to produce a true explosion, although, doubtless, the ignition would be accompanied by an immensely exaggerated noise, such as that produced in lighting any jet of gas. Singular to say, no one was injured, and nothing burnt or damaged but the gas and gasometer themselves.

**RAILWAY TRAFFIC.**—The Traffic Returns of the Railways in the United Kingdom for the week ending August 8, amounted to 527,515, and for the corresponding week of 1856 to 502,338, showing an increase of 25,177. The gross receipts of the eight railways having their termini in the metropolis amounted to 324,659, and last year to 318,694, showing an increase of 5,965. The increase on the Eastern Counties amounted to 2,123; Great Northern, 1,210; Great Western, 2,736; London and North-Western, 3,812; total 9,881. But from this must be deducted 1067, decrease on London and Barking, 537, on Brighton, and South Coast; 1,437, on South-Western; and 1,836, on South-Eastern; leaving the increase as above 5,965. The receipts on the other lines in the United Kingdom amounted to 302,856, and for the corresponding period of 1856 to 283,644; showing an increase of 19,212 in the receipts of these lines.

**FRESH AIR IN ROOMS.**—A correspondent, "Probe," while writing us on the hundred-times-told tale of the evils of foul air and the advantage and necessity of fresh, suggests that in the upper sash of every window there should be inserted a framed pane, that will open on hinges; and that by the Building Act this should be compulsory, because in numerous instances the upper sashes of windows are fixed, compelling people to expose themselves to the evil influence of draughts from opening the lower sashes of their windows. It would save the same end, however, if it were compulsory on builders to hang every upper sash, so as to admit of its being opened at pleasure. The additional cost of doing so is very trifling, and every such sash ought unquestionably to be made to open.

**BREAKWATERS AND HARBOURS FOR SCOTLAND.**—In a statement of places surveyed and reported on by order of the Admiralty, with a view to the formation of breakwaters, piers, or harbours of refuge, but where the recommendations have not as yet been adopted, are the following:—Wick: Report and design by Captain Vetch, R.E. on the 10th February, 1857. Two breakwaters recommended, one from the north shore of Wick bay, and the other from the south shore, sheltering an area of sixty acres, having a depth of 12 feet and upwards, and of forty-two acres with a depth of 18 feet and upwards, at time of low water of spring tides. Period required for completion, seven years. Estimates of total cost, by Mr. John Coode, C.E. 175,175. A harbour is also recommended at Peterhead, at a cost of 297,905; two breakwaters at Elie, in the Firth of Forth, at a cost of 200,000; and a breakwater at Dunbar, at a cost of 150,000.

**A NOVELTY IN BRICK-MAKING.**—Among the new machines lately exhibited at the Highland Agricultural Society's show was one for the novel purpose of making bricks and tiles from common earth by pressure. The patentee, Mr. G. T. P. Arthur, has spent many years and much capital in bringing it to perfection, and he undertakes, with the greatest facility, to make bricks or tiles from any description of earth, without any previous preparation, and in any weather.

**ILL-CONSTRUCTED LAW COURTS.**—The *Law Magazine* says,—"The legal profession has to suffer continually from the injurious consequences of ill-constructed courts; and lawyers, at least, should interest themselves in seeing that the buildings in which they have to spend so much of their lives should be adequately adapted to the required purposes. Amongst other annoyances of the class we are alluding to, and which have to be encountered by the practitioner, we may note the absurd relative positions allotted respectively to the judge, jury, counsel, and witnesses. Many a circuit town presents in its court-house an instance of most ingenious folly in the arrangement of the above necessary parties. We have often seen learned counsel sitting in a well in the middle of the court, precluded from all means of communicating with their clients, or with each other, the witness-box being so disposed that if he who is being examined looks towards his questioner, when answering the counsel, as is inevitably the case, he then turns his back on the jury, who lose his reply." Architects, too, "should interest themselves," so that new courts may not present the same inconveniences.

**HALF-HOLIDAY IN THE BUILDING TRADES AT MANCHESTER.**—The master builders of Manchester have acceded to the demand of the workpeople, and it has now become the rule, we are informed, to leave off work at one o'clock on Saturday all the year round. The weekly wages remain as before, and there is no alteration in the number of hours on other days of the week. This reduction of two hours a week in time is equivalent to an increase of wages of about one shilling per week. There will doubtless be some inconvenience to the public on the adoption of this system in the building trades in respect to calculating and charging time, but as the concession is made by the masters in deference to a public expression in favour of the holiday, it is hoped that the public will make allowances for such inconveniences as may arise.

**CHAMBERS'S INSTITUTION, SCOTLAND.**—Mr. William Chambers, one of the founders and editors of *Chambers's Journal*, has purchased a large building in Peebles, his native place, to devote it to a public library, museum, and picture gallery for the benefit of the inhabitants of that town. In addition to the buildings already subsisting on the site he intends to erect a great hall, the foundation stone of which he has just laid. It has been arranged at the request of the town council of Peebles, that the ancient cross of the burgh, removed from the grounds of Sir Adam Hay, Bart., shall be placed in the centre of the quadrangle. The founder of the new institution has promised to give 10,000 volumes of general literature.

**A SAFETY-GUARD TACKLE-BLOCK.**—A tackle-block, which holds fast all its gains, without manual holding on, or belaying, as with the common block, is advertised, we observe, in the American papers, and appears to merit some notice. It is a patented invention, and was originally called Whipple's upper-block, but has since been improved, and is now called Ballou's safety-guard tackle-block. A lever inserted at one side works with a ratchet so as to act as a break upon the pulley wheels, and to clasp the rope. By pulling a cord or rope attached to the lever it is set free, and the weight or burden descends with ease and safety as convenience may require, or can be suspended at any height for any length of time. As the block of itself holds fast all that is gained from pull to pull, it allows the freest outlet of strength, often, it is said, enabling one man to do the work of two, and with greater ease. With such a block, too, acting under horse-power, the stopping short or giving back of the animal will cease to occasion the slightest danger. In setting masonry, and for the use of masons and stone-layers generally, as well as carpenters, and others in the building trades, such a block, if well made, must be exceedingly useful. Whether it is patented in this country we do not know. The patentee is Mr. Adin Ballou, of Hopkinton, Milford, Mass. U.S.

**VALUE OF HIGHLAND PROPERTY.**—The Duke of Portland has just purchased the beautiful and romantic estate of Langwell, in Calthness-shire, at a price of 99,000. His grace purposes making it a summer retreat and converting part of the 40,000 acres, to which it extends, into a deer forest. The fisheries and shootings, which at present yield 7500 a year, are of the best description, and the property is therefore particularly desirable in a sporting point of view. As showing the value of an attractive Highland estate, it may be stated that the price amounts to about thirty years' purchase of the gross rental.

**FEES, RE METROPOLITAN RUINOUS BUILDINGS.**—I am quite of the opinion of "Architect" in this matter, and feel myself and my profession to be degraded by the miserable scale of fees put forth by the Board of Works. It is a new burden upon us, inasmuch as we cannot refuse to undertake this peculiarly onerous duty; and yet if we take any of these paltry sums it must be with loss of self-respect, and with a certainty that what we take is too little to be any remuneration at all. Surely this is not the way to promote an effective execution of duty.—D. S.

**WALSALL NATIONAL SCHOOLS COMPETITION.**—The designs submitted by Mr. H. E. Cooper, have been accepted.

**BLACKBURN INFIRMARY.**—We have received a complaint that the proposed extension of time for sending in plans was not advertised in the *Builder*, although it was in the local papers, so that London architects would be led to send their designs before the required date. It is only fair to the committee to say that the advertisement appeared in our last issue, but, by accident, under the head of "Contracts," instead of competitions.

**DAMPNESS OF FIRE-PROOF ROOMS.**—A fire-proof room was formed twelve months since in the basement story. Two walls only were required: they were built in cement, and all the walls as well as floor were cemented. A jet of gas has been constantly burning. No sign of damp appears, yet parchment deeds, after being in the room about a week, feel damp. Query the cause and remedy.—X. Y. Z.

[The difficulty of making underground fire-proof floors dry has been discussed in our paper before. Change of air is the desideratum.]

**ALL SAINTS', POPLAR.**—Various repairs are to be commenced forthwith at the Parish Church of All Saints', Poplar, under Messrs. Morris and Son, Architects. The following Tenders have been delivered:—

G. North	£ 419
E. J. Munn	415
Jeffrey	295
Salt	295
Derby	290
Watts	280
Hall (accepted)	240



# The Builder.

VOL. XV.—No. 760.

It was not our intention to revert to the Wellington Monument Competition, on the conclusion of our observations on the modern treatment of sculpture in monuments, and series of notices of the models at Westminster Hall.\* The question, however, now arises, "What is to be the actual result of the competition?" Moreover, as referred to in our last notice, we are gravely at issue with some of our contemporaries as to the merits of the collection generally, and the position of British sculptors.

It may be quite true, that of the eighty-three models, a large number

in proportion to the whole, would deserve the ridicule which they have excited, or the exception which has been taken to them for want of originality, or their use of allegory without the requisite perspicuity. But a certain class of writers are too ready, when they come to speak of that with which they have no real sympathy, to adopt a tone of disparagement. The prevalence of this in the case of architecture, is one of the really unfortunate circumstances in the position of that art. The fact of such prevalence rather than any inherent defect amongst the public, is what lends colour to assertions about absence of perception and appreciation of art in England. We believe, that to foster or create an art-loving people rests with the teachers,—first, by the avoidance of opinions which are not formed on the basis of study; and, secondly, by putting an end to those controversies amongst artists themselves—such as those about styles—which only unsettle the public mind, or prevent the perception of the true art, without compensating advantage.

The large amount of mediocrity, or of utter misconception of the first essentials of the art, which is brought to light in every competition, is one of the inevitable consequences from the offer of premiums; and injustice is done to the *artists* of a country, by ascribing to them works by men who may be far their inferiors. As we may have taken occasion to assert, our sculptors, both of this generation and the last, have achieved enough to evidence their possession of great abilities; and, if we believe they have yet something to acquire for certain branches of their art, it will be better to recognise the merit which they do possess, than to consign them all, as our contemporaries have done, to utter condemnation.

For ourselves, we may say that we have found much in the collection at Westminster Hall that would have deserved praise,—even in designs which we saw did not go to realise the objects of *monumental* sculpture; whilst we have found as large a number of designs as might reasonably be expected, possessing claims to selection for the intended work. Some of those which we refer to,—as No. 66, "Virtute prudentia Victor," (Mr. Durham), and No. 68, "Integritas," (Mr. John Thomas), could only have been excluded from their occupying a trifle more space than the 13 feet by 9 feet, referred to in the report as "distinctly laid down in the prescribed conditions;" whilst others, as No. 12, by MM. Mariano Folcini and Elisse Cambi, of Florence; No. 20, by Mr. Noble; and No. 21, by Herr Ernestus Julius Hähnel, of Dresden, which we mentioned

with general approval, are amongst the designs to which premiums are given, though not the largest amounts. And, indeed, as to the three designs which stand highest on the list, if we showed we were of opinion that those works did not make fit use of principles which happened to be those of architecture, or did not use good architectural details; or had not the impress of perspicuity in their allegory, or unity in their ideal or representative expression; we had every evidence that the deficiency resulted from forgetfulness or misconception,—not from *inability* to grapple with the requirements of the particular class of sculpture on the part of their authors.

We say that the literal acceptance of the views that are current with writers in other channels, would tend to interdict everything but simple portraiture or representative sculpture—either of which taken alone, we have expressed belief, would fail to afford the highest class of art. Those views would interdict poetry of conception, and offer little food for the intellectual perception in the observer. Between the sublime and the ridiculous, there may be but one step; but if so, are we to understand that the higher expression of art is never to be sought for—in short, that the something which we choose to call allegory, is not to be attempted, because in the majority of cases it is made ridiculous, or so that it cannot be read? We think otherwise. The power at least, to use allegory without the complicated action which we endeavoured to show, belonged to dramatic art rather than to sculpture, manifests itself in the works which we have particularized, as in Nos. 57 and 60—"Studens"—(Mr. John Bell), and some others; and despite the fact that Mr. Woodington's personification of Devotion, Energy, Order, and Decision, is such as could not dispense with the titles beneath, his work, which has received the second premium, exhibits the like power in the artist. The difficulty is to group the whole well together, so that the allegorical figures shall bear parts in a train of thought, and yet shall attempt no complicated action. One of the most successful of the designs, in this respect (though defective otherwise), and without much use of architectural framework, is No. 20, by Mr. Noble. The figures of Europe, Great Britain, Ireland, and India, by grouping and position, together express a mutuality of sentiment rather than a participation in action; the success of which limited effect is aided by their simple statuette character. Europe is represented with the sheathed sword and olive branch, and India has a large volume of the Laws of England. Herr Hähnel's work (21), which is next to Mr. Noble's, and has received an equal premium, curiously shows how much difference may be produced through the most simple elements of figures. Were it not for the addition of a seated figure of Britannia, who holds a shield inscribed with the name "Wellington," the same written description might suffice for both models; and the merit of the figures taken separately might be not unequal. But the accessories in No. 21 are merely separate statues, with no sympathetic bond in the sculpture; and no substitute for that, in the architecture. This last is comprised only in the pedestals, which are in a great measure isolated from one another. The four figures represent War and Peace, Wisdom and Strength,—each being a female figure. War has a helmet and cuirass; Peace an olive-branch and a horn of plenty; Wisdom has a torch and an open book; and Strength holds a club. Enrichments to the pedestal, such as are *sketched* on the model, would probably improve the effect of the monument.

The model which received the first premium—No. 80, by Mr. W. Calder Marshall, R.A.—has now been painted—pedestals and figures—

to try the effect of the design in marble. Thus, assuming the further alteration in the drapery as proposed—one of our objections to the design (the prominent use of bronze within the cathedral) would be removed. But, the objections which are made to the present monuments in St. Paul's, if of any value, would be applicable to the present design, in which the representative and the allegorical are so far mixed up, as to interfere, it seems to us, with the unity of the expression. As to allegory itself, we have admitted in a former article, that the disuse entirely of Classical allegory, might deprive the sculptor of vehicles of expression which have become the most intelligible. But after examining the emblematic personifications by Herr Hähnel and others, showing that the virtues can be successfully represented without pagan associations, and by all female figures; we are inclined to think that the excellent sculptor of No. 80, could have arrived at a better result by a course different to that which he has taken, as he certainly would have produced a result more satisfactory to a certain section of the public. He represents Wisdom by the classical figure of Minerva, and Valour by a figure resembling Mars. Duty is so nearly resembling the figure of Valour, that few observers would find there was any difference of intention. Peace holds a dove and the olive branch, and is the most satisfactory of the four. Of the groups at the ends,—one is allegorical, of Commerce and Agriculture rejoicing at the restoration of peace; and the other representative, of a mother, with child, bending over the body of a soldier. The whole of the figures accessory to the statue, if not all representative, should be all allegorical; in which case the representation of events might be effected by the *rilievo*. In respect of grace and elegance, the monument is scarcely equalled by any in the Hall; and notwithstanding the objection we have stated to the principle adopted in the design, we claim, in the interest of British art and fair dealing, that Mr. Calder Marshall shall erect the national monument in St. Paul's Cathedral; or at the least that he shall be one of those selected from the present competitors, who have fought the fight and run the risk, to essay to meet, more fully it may be, the national requirement.

Returning to the other designs, with the view of still further noting the injustice and ignorance shown by the ridicule and abuse which have been showered on the designs,—Mr. Woodington's model, if it does not fully meet our theory, omits to do so mainly from encountering the difficulty of producing in forms that are capable of recognition, qualities of which the expression has seldom been attempted by the sculptor. There is consequently no analogy that can help the spectator to identify the qualities; for, the most important accessories, such as the seal being stamped on the document, which marks the allegory of Decision, are not immediately detected. The military character of the Duke is alluded to only in the sword, placed in a subordinate position at one end of the monument; and we have referred to the design of the pedestal. In other respects, the design is one of remarkable merit; and the figure of the Duke is excellent.—Mr. E. G. Papworth's design (36), which has the third premium, we have sufficiently mentioned.

On no ground can we discover why the fourth premium was given to the design (10) by Cav. Giovanni Dupré, of Florence. The apotheosis of Wellington is represented at the top of the monument,—the Duke habited in a toga or drapery, being led by the hand by Victory; whilst Peace, kneeling, is placed on the left. At the angles of the pedestal are seated figures, intended to represent the principal virtues of the deceased, each with an attendant genius in the form of a youth. The pedestal is decorated

\* See pp. 415, 425, 445, and 457.



with *rilieos*. The mouldings and general architectural features are of very inferior character.

Of the five models which have received premiums of 100*l*. each, we have mentioned some that would have deserved better places than those given to them, and we may especially refer to No. 12. Mr. Alfred Stevens's model (No. 18) would be far too lofty for the cathedral. The equestrian statue would, we think, reach nearly to the crown of the arch. Mr. Thomas Thornycroft's design (63) we passed over with a very short notice. It is so entirely wanting in all the architectonic elements, that we marvel that it should have been thought deserving of preference. But, with the greatest defects in some of the requisites of monumental sculpture, it combines considerable beauty in the merely sculptural features. The Duke is seated on a camp-stool, with a lower group of figures of Victory, Peace, Science, and Industry. These are raised on a misshapen pedestal, decorated with *rilieos* in bronze, an upper range of them being gilded. The pedestal is surrounded by bronze figures of the Duke's companions in arms. At the base of the pedestal, the contrast between the colossal lions' heads at the angles and the small scale of the *rilieos* is very objectionable.

We have often pointed to the disadvantage which results from stringent instructions; and we believe that in this case an unimportant departure from the prescribed dimensions of the monument has interfered with the selection of some of the best designs.

The short-comings of the works exhibited are, we think, in the architectonic requisites of monumental sculpture; but whilst the art of late years has made no advance in these, it has, as we have said, in our opinion, progressed greatly in elements which are of equal importance.

#### SOME DESCRIPTION OF THE MECHANICAL SCAFFOLDING USED AT THE NEW PALACE AT WESTMINSTER.\*

It will probably have often been the case with architects engaged on extensive and difficult works or buildings of peculiar construction and purpose, to have to consider and devise particular arrangements in the shape of scaffolding, either with the hope of effecting some economy by diminishing labour, or to meet some emergencies attendant on the work themselves. When this has happened, it must have been a matter of very great interest to inquire how like difficulties had been met by others, and to examine the records of their trials for similar objects, and the results. But here much difficulty usually presents itself from the paucity of such records, which, unless under some unusual circumstances, are very seldom to be found. The reason is obvious. The main object proposed to himself by an architect is, the perfect realization of his conception in the building, and though as each successive stage or process necessarily comes under his attention, it is considered very carefully with reference to its bearing on the whole work, yet when that is completed, the processes by which it has been effected—the tools used upon it, as I may say, are forgotten in the results. The scaffolding is cleared away with jealous care, as though to prevent any record of it remaining, while the structure stands to attest its claims to admiration for truth or beauty in future times. It will readily occur to all how these remarks apply to many of the great works of past ages—the pyramids—the temples and obelisks of Egypt—the massive walls of Jerusalem—the wonderful constructions at Baalbec—and in our own country, Stonehenge and other Druidical remains; all of which have excited universal interest and wonder, the huge masses of which they are composed having evidently required the exercise of no ordinary mechanical skill, and consequently many have been and are the ingenious theories explaining how they could have been carried out. Again, we should all be gratified by being informed how the Medieval architects erected the marvellously lofty and delicate spires of Antwerp and Strasburg, in which it must evidently have been one part of the problem, that the scaffolding should be self-supporting and independent of the delicate work itself. It has therefore occurred to me that some interest might be attached to a short description of the various mechanical contrivances in the way of scaffolding, which have been employed in the execution of the works at the New Palace at Westminster. I have been also induced to draw up

such a description by the hope that other members of this Institute may contribute several memoranda from their own experience to our general stock of interesting and useful information on *constructional* subjects. In this instance, moreover, I am prompted by feelings of affection and respect for my father, the architect of one of the mightiest edifices in Europe, who never can be induced to describe his own works, and by the desire that some record of them may nevertheless remain. To make good any omissions or deficiencies in my account, or in my own recollections of what has been effected, I am favoured by the attendance here this evening of my friends Mr. Meeson and Mr. Quarm; the former having been long my father's chief assistant in his office, and the latter having occupied a similar office of trust for many years as chief superintendent at the building they have both been materially concerned in devising, and carrying into effect the several bold and daring constructional contrivances which have been adopted, and which it will be my endeavour to explain.

The extent of the New Palace at Westminster—the necessity for its being carried out in portions—and the exigencies arising from constructing the new works, in many cases, where the old buildings they were to replace remained in daily use, led to curious contrivances of all sorts. But in attempting to recall them, I have met with the difficulties already alluded to, for few and but scanty records exist even at the present time. Although much anxious thought and contrivance have been required, the result has perhaps been a mere pencil drawing, or a verbal direction, illustrated at the moment with a piece of chalk on the nearest wall. And therefore, although from having been myself engaged for some years daily at the building I have a perfect recollection that several curious contrivances were devised, I have found it quite impossible to describe them intelligibly by diagrams. I must therefore rest contented with briefly alluding to some of them, and invite the attention of the meeting to a more detailed account of the scaffolding and hoisting machinery employed at the three main towers, of which more records do exist, and which I believe are quite peculiar in principle to this building.

In the year 1840, when the commencement of the superstructure was made with the river front (the coffee-dam and terrace wall having been completed), I may observe that, although the old-fashioned kind of scaffolding of poles and ropes had in some instances been superseded by the so-called whole timber or framed scaffold, with its tram-way and crab engines aloft, yet the latter was uncommon, and had never been applied on an extensive scale, and its peculiar advantages and economy had consequently never been much tested. I believe I am correct in saying that the first, or one of the very first, instances of the use of whole timber and tram-way scaffold was by my father at the New Grammar-school at Birmingham, in 1833. The elaborately decorative character of the face masonry at the New Palace made it necessary either to execute the finishing *in situ*, which is still nearly always the method abroad, or to employ a system of scaffolding, by means of which heavy worked blocks might be raised without any chance of injury, and adjusted in their places with the same precision and facility as a brick could be laid by hand. I will illustrate my meaning by remarking that in very many cases the stone to be raised weighed four or five tons, and had on its face carving or other work—the result of three months' labour in the workshop. It had therefore become a valuable work, worth careful handling, though of course had the face-work been done after the stone was fixed in the rough, much longer labour by far would have been necessary.

The principle of framed scaffolding in connection with tramways, either on it, under it, or both combined (on which the trucks with stone and the hoisting engines travelled), adopted in the river front, was found so advantageous, that in one form or another the same means have been used to meet all the subsequent requirements of more special portions of the work. For instance, when it was required to execute the internal decorative masonry of the lobby of the House of Commons, a scheme was devised by which one small traveller was made to act on all the four sides, by an ingenious arrangement for turning round the square corner at each angle, either with or without its load; so that a stone might be at once lifted from the banister on which it had been worked, and carried round suspended to be set in its proper place.

Again, when the internal masonry of the central octagonal hall was in hand, a circular single line of rails was laid down, just inside but clear of the walls, on which a pair of lofty framed legs, like trestle shears, travelled, connected with a centre pole, as a pivot, by means of a strongly braced and trussed timber frame at the top, on which again rails were fixed to receive the wheels of the travelling engine. This framing and railway projected so far over, that

the tracery heads of the large windows, the courses forming niches, and the springers of the vault could all be worked below with the utmost exactness, and dropped into their places with such certainty of the mouldings fitting, that the subsequent labour of cleaning off was always trifling, and often unnecessary.

I could wish that it were possible to exhibit the centering of the large octagonal stone vaulting over the central hall. I will remember that it contained several novel and peculiar arrangements; one of which, I think, was, that all the stones for the vault were raised through an orifice in the exact centre of the centering itself, but I have been unable to find any drawing or details relating to it.

I will now invite attention to the means employed to raise and set the masonry and brickwork of the three great towers of the building, which differ very materially in their form and character, and therefore in their construction, commencing with the central tower, which was the first completed. I have already described generally the means used to build it up to the vaulting over the central hall. It will be seen that the central lantern is supported upon a cone starting from the springing of the vaulting; a powerful chain bond is here introduced, by means of which the resolution of the entire weight of the stone lantern on to the base of this cone is effected, which of course adds to the security of the groining itself. The cone, which was constructed of brickwork and afterwards cased with the stone tabling, was itself a work of some difficulty. The arrangements of the elaborate system of ventilation introduced into the building by Dr. Reid, which had reference to the central tower as the point of ultimate extraction of all the smoke and vitiated air, required that very large orifices of communication with the surrounding roofs should be maintained through the base of the lantern, as well as into the lantern itself. It was, therefore, necessary to perforate the brick cone by large arched openings; the consequence was that the portions between them had to be built isolated from each other up to the spring of these openings, and were, therefore, obviously overhanging walls. As a second system of centering would have been very expensive, it was determined to attempt to build the cone by means of a trammel, only working round a centre pivot in such a manner that the inner surface or interior should be kept true all round. Ties or chain bond of iron were introduced, to prevent all chance of the work afterwards spreading outwards at the foot when subjected to pressure; and the whole was successfully and rapidly accomplished. The leaning portions, which looked very insecure to the unpractised eye, were duly connected by arches turned through the whole thickness of the wall, and connected with iron struts: the system of the trammel answered perfectly, and the brick cone or base for the stone lantern was completed (without the accidents confidently predicted by many), and, perfectly true in form and plan, was ready to receive the further works about the latter end of 1841.

The cone was really rendered continuous on plan during its whole progress, by means of temporary timber struts, introduced in the openings, which, in point of fact, acted as keys or horizontal voussoirs: without these, there would have been, of course, risk of the disconnected portions falling. These struts were left in till some time after the arches were turned over the openings, and the work had had time to set thoroughly: when they were removed, a minute examination could not detect a trace of movement or flaw in any part of the work, nor is there any now under the load of the tower above it. The brickwork was executed in mortar, with occasional tiers of four or five courses in cement, within seven weeks from the commencement.

Up to this time all the materials had been raised internally through the central orifice in the stone groining; but it now became necessary to alter this mode of proceeding, inasmuch as the finishings of the central hall, with other portions of the works adjacent, were required to be given up to render this part of the building available for public use. On the block plan of the building, the small court, called the Peer's Inner Court, will be seen. From this henceforth all materials were hoisted outside up to the level of the platform coinciding with the upper rim of the cone, and deposited on trucks running on a tramway extending over the roofs of the building to the centre of the platform over the cone: from this point upwards the lantern of the central tower was built by a system of framed scaffolding. This scaffold was put up and added to from time to time as the work proceeded. Platforms were constructed at various levels to receive the materials hoisted, as well as for the use of the masons; and the stone, being always raised in the centre through a shaft or ring left in the framing and platforms, was easily set by the workmen, without depending in the least degree on any part of the work already built: this was obviously a point of the utmost importance, arising from the delicate mullion work of the lantern windows. The raising of the materials

\* Read by Mr. Charles Barry, Fellow, at the ordinary general meeting of the Royal Institute of British Architects, June 15th, as previously mentioned.



from the ground to the lower platform or tramway was effected by connecting a small engine with a drum and tackling immediately over the court below: the materials, having arrived at this height, were taken by trucks to the centre of the tower, when the same engine was connected with another set of tackling running over a pulley in a frame fixed about 6 feet higher than the next intended platform. Large stones were thus raised by two lifts from the ground to their final position, 150 to 200 feet or more, without handling in any way, and consequently without risk of injury. This arrangement was continued by simply shifting the pulley higher and higher, and lengthening the connecting gear between it and the engine drum, until the internal diameter of the spire became too small to receive it, when the platform was so framed as to extend outwards through the small lucerne lights in the base of the spire sufficiently to allow a scaffold of ordinary poles to be erected on it. All the remainder of the materials, including the metal terminal, was raised, as described, to this platform in the interior, and then run out through a temporary opening left for the purpose in the base of the spire itself. The same principle of keeping the scaffold clear of the work was continued: no putlogs whatever were used, but by disposing horizontal poles diagonally on plan, the whole was firmly braced from time to time. The engine used was a portable one, known as "Gough's patent," and its cost was under 100/: the scaffold cost about 500/. more. I will hereafter give some interesting data respecting the economy which can be effected by the use of steam-engines for raising materials for towers and like structures; but before quitting the Central Tower, I may mention that its dimensions are as follow:—

External diameter.....	70 feet.
Internal diameter of the octagon hall .....	55 "
Diameter at the base of the lantern .....	33 "
Diameter at the base of the spire ...	11 "
Entire height from the basement level to the top of the spire .....	266 "
Height of the octagon hall from its pavement to the vaulting .....	50 "
The approximate number of cubic feet of worked masonry above the cone, exclusive of brickwork* ...	25,000 "

#### MEDIEVAL EARTHENWARE DECORATION.

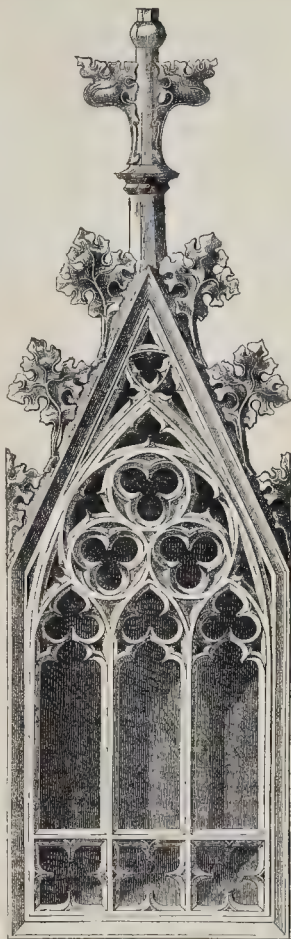
This beautiful and interesting specimen of pure Gothic tracery was found at the time of restoring an old building in *Nuremberg*, and is supposed to be a portion of an earthenware stove. It is a well-known fact that at one time in that town a very flourishing trade was carried on in the manufacture of these stoves (which sometimes were coloured and gilded) by men who, from the beauty of the works they designed, may be fairly supposed to have been artists, and not common tradesmen, as Glockenthon, Pranner, and others, whose names are known to fame, specimens of whose art, from their beauty and scarcity, are much prized.

There is at present in *Nuremberg* a manufactory which makes copies of these works.

The drawing is about one-third of the original size, and the relic is supposed to have formed the crowning ornament of an earthenware stove. Traces of the use of other earthenware ornamentation in the houses of Germany have been discovered.

#### THE WILTSHIRE ARCHÆOLOGICAL SOCIETY AT BRADFORD.

We left the archaeologists starting on their first day's excursion, with the Rev. Mr. Wilkinson's pony and a mounted trumpeter in a red coat at their head,† on their way to Monkton Manor House and the church at Broughton Gifford. The excursionists had mustered strongly, filling, when they reached their first destination, thirty carriages or more. At starting, some of the visitors saw, for the first time, the outside of Kingston House (sometimes called the Duke's House), at Bradford; for, strange to say, this, the best known thing in Bradford, beyond its boundaries, was omitted in the list of objects of interest in the town set forth in the programme, the result, probably, of some local jealousy. We must punish the managers of the meeting for this by detaining the excursionists while we give a few notes about the house. It is one of the most interesting specimens remaining of the domestic architecture of the end of the sixteenth and beginning of the seventeenth century, and Mr. Moulton, the present possessor, has made it one of the most perfect. It was built, probably, or, if commenced earlier, made to take its present form, by John Hall, the head of that family, in the reign of James I. "Through the marriage of



MEDIEVAL EARTHENWARE ORNAMENT.

Elizabeth Hall," said the Rev. Mr. Jones, in his paper already referred to, "the heiress of another John Hall, grandson of the one who probably built the house (and who was sheriff of Wiltshire in 1670), with Thomas Baynton, of Chelfield, and the subsequent marriage of their daughter, Rachel Baynton, with the son of Evelyn, the Duke of Kingston, the property came into the possession of that ducal family, and from that time the mansion has been called Kingston House. The issue of this marriage was the second and last Duke of Kingston, the father having died before he came to the title. The second duke married Elizabeth Chudleigh, *alias* Mrs. Henry, *alias* the Countess of Bristol, a lady whose career, to say the least, was not irreproachable. As they had no children, the property passed to the duke's sister, Frances Pierrepont, who married Philip, eldest son of Sir Philip Meadows. Their son became the first Lord Manservants. He sold Kingston House, in 1802, to Mr. Thomas Dwyer, who, with a keener eye to profit than architectural beauty, turned it into a manufactory. In 1848 the premises were sold to Mr. Moulton, and to him we owe the complete restoration in such excellent taste of all that remained of the North Wilts Hall of John Hall." The garden front, where there is a terrace with flight of steps and balustrades, and ladies' garden, and wide-stretching lawn, is the principal. It is all of stone, full of opus-tus,—

"With bay windows, goodly as may be thought,"

as old Chaucer sings of the houses which just preceded it. The chimney-stacks are very well treated. Within there are handsome ceilings of the period,

and two very fine stone chimney-pieces, one in the dining-room, in two stories, Doric and Ionic, with a very large guilloche as a mantel (the details a little mystified in restoration); and the other in the drawing-room, of the "strap and jewel" character, the upper story of which has clusters of small columns at the angles particularly elegant. The first is given in a volume of illustrations by Mr. C. J. Richardson, privately published by Mr. Vivian. A carved stone doorcase, with semi-circular head, in the dining-room, is also very elegant. The name of the architect is unknown, but from the resemblance of the architecture to that of Longleat, and the tradition which ascribes the latter to the little known John of Padua, he has been called the architect of Kingston House also. He is spoken of as "deviser of buildings" to Henry VIII. The Rev. J. E. Jackson, in a paper on Longleat, printed in our last volume (XIV. p. 622), has made some observations on this subject, which may be usefully turned to. It may have been John Thorpe who built Kingston House. Now, however, we must get back to the excursionists, simply adding that it seemed to speak well of Mr. Moulton, as an employer, when we found a very good band playing on the lawn in the evening, organised out of his manufactory.

Having visited Monkton Manor-house and Broughton Gifford Church, the party fled away to Great Chalfield Church and Manor-house. The latter is a very interesting specimen of domestic architecture, built as early as the middle of the fifteenth century. The Percys owned it early, and then it came into the possession of the Tropenells. The way in which this family ended in heiresses was remarkable. The only son, on coming to man's estate, met with an unlucky accident. He had put a pair of dog couples over his head, and, leaping over a hedge, a loop in the strap hanging at his back caught a bough, and kept him from the ground till he was strangled. This death was the more singular if the motto of the family be, as we have heard, "*Le joug tyra bellement!*" The house has a very good oriel window, but throughout has been much injured by alterations to meet wants of the moment. The hall had its ceiling divided into squares by the main timbers, and those squares subdivided into others of plaster,—an early example of such an arrangement. The church is distinguishable by its stone pent-house porch, and a bell cot, illustrated, together with the Manor-house, by Mr. T. L. Walker, in "*Examples of Gothic Architecture*." One small lancet-headed window on the south side seems to show that the church was here in the thirteenth century, though it took its present shape two centuries later.

Wroxhall Manor House, the next stopping place, has also been made known in detail by Mr. Walker. It has been attributed to the early part of the fifteenth century, when Robert Longe, who was M.P. for Wilt in 1433, was its first recorded possessor. The buildings enclose two sides of a "plaisance," and include a gatehouse, hall, and drawing-room. The latter was formed by enlarging and altering part of the old house, late in the reign of Elizabeth, or, more likely, in the beginning of the reign of James I. A vaulted ceiling was formed, with plaster ribs and ornaments, and an elaborately-carved stone chimney-piece of the period set up, with caryatides, Corinthian columns, and figures of Prudence, Arithmetic, Geometry, and Justice. Some of the details of the chimney-piece are pure and elegant; but as a whole it is not equal to those at Kingston House. There are several points of interest in Wroxhall Church; but the red-coated fagman is blowing his trumpet, and the cavalcade is preparing to start for Monkton Farley and "Mrs. Wade Brown's Tower." The last mile or more of the road taken to Monkton Farley House was through a fine avenue of noble beech trees ("*sub tegmine fagi*," all our schoolboy readers will whisper), and to the party assembled on the terrace of the house, and the effect of so large a number of vehicles marshalled into something like order, must have been very striking. It is not necessary to say anything about the hospitable entertainment here. This having been discussed, a paper by the Rev. Canon Jackson, was read by one of the honorary secretaries, "*On the History of Monkton Farley*." As this began with reference to events that occurred "long before quills and fingers were invented,"—events that regulated the earth's surface,—and came down to the year 1840, when the estate was purchased by the late Mr. Wade Brown, it was necessarily somewhat long, but it contained much interesting matter, as all Mr. Jackson's papers do, and will be better appreciated when printed in the Society's "*Journal*." Monkton Farley Priory was a house of Cistercian monks, established by Maud of Salisbury, the wife of Humphrey, Baron the Second, about the year 1125. At the dissolution, it went to the Earl of Hertford, afterwards the Protector Somerset, and then into various hands. Of the buildings of the Priory very little is left, and of the Priory Church

\* With the continuation of the paper we shall give some diagrams.

† See p. 472, ante.



nothing but the site. In its original condition, the architectural style would probably be partly Norman, partly Early English; and with this transitional character or the few fragments that have been found perfectly correspond. "The church fell, or was taken down. The ground on which it stood (now forming the bank on the north side of the lawn), being covered with heaps of rubbish, and overgrown with grass, became a rabbit warren; and some curiosity was excited by the partial disinterment of its foundations and floor in the year 1744. A description of this discovery, but containing some errors, was printed in the *Gentleman's Magazine* of that year, on which Dr. Ducarel (of the London Society of Antiquaries), requested a friend, Dr. Wm. Eveltis (a physician then living at Chippenham), to visit Monkton Farley, and send him a correct account. Dr. Eveltis's letters are printed in 'Nichols's Literary History.' From these it appears that some of Mr. Webb Seymour's labourers being employed in leveling the rabbit warren, came first upon the pillar of a church, and, about 4 feet under the rubbish, to the floor of the chancel, of chequered tiles, chiefly red, some with 'flying griffins,' and other emblems. Four gravestones were found, one having the figure of a monk kneeling, the name 'Lawrence,' and a legend, in old French, 'Ici gist,' &c. 'Whoever shall pray for him shall have so many days of pardon.' This was a common one about 1360; and as a Prior Lawrence Achenbach was here about that period, it was probably his monument. On the other three stones, which were grooved round the edges, the inscription was obliterated. The grooves being an inch or more in breadth, had probably been the sockets of strips of brass, on which the inscription had been written.

The chancel-floor was about 24 feet square, lying east and west. At about two-thirds of it eastward were steps. Here a sepulchre was opened, containing the skeleton of a stout man, upwards of 6 feet high. On a gravestone was his bust, in *bas relief*, and at his feet a lion. This, of course, was pronounced to be the founder; but the principal founder, Humphrey Bohun III. was, with all after him, buried (as has been stated) at Lanthony Priory. North-west of the altar, and some yards off, was found another floor, as of a small side chapel, rather deeper in the ground. It contained a basin for holy water, and its walls were perfect about a yard high all round it; in one part as high as the sill of a window. South of the altar, about 4 feet under the rubbish, was found another floor of tiles, about 10 feet square, but no remains. On this side, also, apparently beyond the church, were signs of a burial-ground, with a large yew-tree; several stone pillars were discovered, having figures carved upon them perfect and fresh. Some of these are known to be still buried."

The most curious monument, found in 1744 (which was given away by Lord Webb Seymour, and is now preserved at Lacock), is that of Ilbert de Chat, one of the chief benefactors to Farley Priory. Ilbert de Chat (so called from a place of that name on the coast of Normandy, near Carentan, half way between Cherbourg and Caen) was a landholder, under the Bohuns, in Normandy as well as in England.

In 1841, during some further alteration of the ground by the late owner, a large slab, once the covering of a stone coffin, was found. On it is the effigy of a cross-legged knight, in chain armour sculptured in low relief. On the shield, which lies, not by his side, but over the whole body, occupying the full width of the stone, are the arms of Dunstanville: *Pretty, on a canton a lion passant, surmounted by a label*—the mark of an elder son. There are also fragments of a second figure in chain armour, beautifully sculptured, and once coloured, but there are no arms, or other token by which it may be identified.

These effigies, probably of the time of Henry III. are singularly well cut, and in admirable preservation. It would be well to ascertain if they are of the stone of the neighbourhood. The stone obtained now from Farley Down is not thought to stand so well.

In the evening, on the return of the party, papers were read in the Town-hall where we may mention as a matter for regret, a dealer in pictures had been permitted to hang amongst the articles forming the museum, a number of paintings, ticketed, with noticeable impudence, after this fashion—"Teniers, 2l. 10s.;" "Correggio, 4l.!"

On Thursday the excursionists went to Tory Chapel, Belcomb; Stoke Church, Farley; Hungerford Church and Castle, and Westwood Church and Manor House. At Belcomb, Mr. Edmonds, of Bradford, read a paper in favour of the belief that a certain number of large stones there, in a semi-circle, are the remains of a Druidical temple. "The name of 'Belcomb' is supposed to have been of Druidical origin, derived from 'Bel,' the god of the sun, and the place has been mentioned by antiquaries as the probable site of ancient worship. Wood in his History of Bath, says—"King's Down seems to have been so denominated from Bel, as king of the heavenly

bodies, and Dunum, a hill; since a great dent in the south end of it still goes by the name of Belcomb, and since other names applicable to the sun are yet preserved in the names of the places on the top of the mountain. The situation, considered under all circumstances, seems worthy of the consecration it appears to have had in pagan times, when the ancient Britons dedicated it to their god Belenus, and in all probability erected a Pyraen in the combe like the octostyle pavilion accident has now produced in it to maintain some of their sacred fire in honour of their imaginary King of Heaven."

"If any weight," said Mr. Edwards, "can be attached to such evidence, the most extraordinary testimony of a traditional character can be adduced in support of the claim of this site to be ranked among the Druidical remains of this country. The name of one of the fields, of which the copse in which the stones were found is the boundary, is to this day 'Temple Ground,' whilst that of the other is 'The Grove'; a field adjoining, around the boundaries of which large stones are found, is called 'Chilhorn,' evidently an old Celtic word or compound, and which probably should be written Chilhior, the 'n' having been an additional vulgar corruption, common to the lower orders; now 'Cylch' means circle, and for the Deity, or more properly 'That Deity' worshipped as 'The circle of the sun moving within its orbit.'"

At Westwood, Mr. Bush Saunders, the barrister, read a paper "On the History of the Church," written by the Rev. W. H. Jones, pointing attention, amongst other things, to the stained glass in the chancel. "The central figure of our blessed Lord upon the cross, with a vessel at the foot, out of which grows a lily, the flowers of which twine themselves round his body, is unique. And I would add, as the lily is the well-known emblem of the blessed Virgin, to whom the church is dedicated, it represents strikingly Him who was emphatically 'the seed of the woman,' and who 'sprang from the root of Jesse.' The glass in the tracery is also most expressive. There is (1) St. John Baptist with the Lamb in his arms, typifying the first coming of our Lord; (2) St. Peter, his first preacher to the Jews; (3) St. Paul, his first preacher to the Gentiles; (4) an angel weighing a saint and an evil spirit in scales (the former outweighing the latter), a type of our Lord's second coming. The other pieces of glass collected from the tracery, in the aisle are all emblems of our Lord's Passion. Amongst them are representations of the nails, the scourge, the hyssop, the buffeting, the embalming, the betrayal, the mocking, &c. The one that represents the mocking, the scornful face, and protruded tongue, is (I am told by an artist in glass) uncommon."

This paper and a thunderstorm closed the proceedings of the congress, and sent the members to their several homes perfectly well contented and thoroughly wet.

#### ANCIENT REMAINS OF PICTS' WALLS.

PERVADING the thoroughfares of wondrous London there are many remnants of antiquity which receive little attention from archaeologists, and the dead walls are of them.

Surrounding all original cemeteries there are lofty walls, bowing, tottering, and mouldering: the grounds within, swollen and elevated above the adjacent roads by accumulated mortality, bristling with head-stones, are rarely planted: the fence around, battering outward, has been raised periodically to preserve seclusion; and the vicinal streets and houses seem, therefore, to have sunken below the level.

Sepulture has been for some time discontinued in most intra-urban graveyards, therefore there exists no longer any occasion for these circumventing bastions. The memory of the dead will be more consecrated by plantation of sacred groves, the health and gratification of the living more assured by the demolition of such fences, and the metropolis adorned in many parts by the substitution of iron railings, planted at a suitable height upon coping, laid on footways of brick-work.

In the obsolete churchyards, of which every parish contains at least one, how beautiful would be the aspect, and how refreshing the effect of a few limes or sycamores, overshadowing the dormant remains of generations long consigned to tombs, whereupon the time-worn inscription scarce records the name or title of the occupant! It needs but to take a glance at two cemeteries in the West-end, that of St. George's, Bayswater, and the other off Mount-street, Grosvenor-square, to be convinced how vegetation flourishes on the food of sarcophagi; and of the beautiful halo shed by luxuriant arborage over the crowded lairs of departed mortality.

There are mural remains in the busiest haunts of town, not, perhaps, so old as churchyard walls; but venerable, rather, on account of the high estate they served,—to protect from the vulgar gaze, the circumvallations of noble mansions. In Piccadilly alone there are some 700 feet of Picts' wall, as useless

to the occupants of the palaces and church they were built to protect, as they are unsightly in the street range. Long habitude renders the Londoner unconsciously of the spoliation these relics of (comparatively) barbarous times inflict upon the architectural effect, as well as upon the free ventilation, of that noble route. Burlington House presents a blushing mask wall of 260 feet long by 20 feet high,—again repeated at the rear to Vigo-street; Devonshire House, 240 feet by 12 feet; St. James's Church, 110 feet by 9 feet; and Cambridge House, near 100 feet, the last being somewhat redeemed by two *porte-cochères*, which stand hospitably open.

It is within the memory of man and woman that some thirty years back the Green-park was bounded, along Piccadilly, by a sullen red brick wall; that Hyde-park, along Park-lane, as well as on the north and south sides, was screened by a bowing fence of the same description, some three miles long: all these were removed, and in place thereof light iron railings have bestowed a value and a delight that can only be appreciated by those who remember their sombre cast in the year 1820.

The value of arborage in juxtaposition with buildings, and of refreshing verdure along the street lines, was never understood by Londoners before. The fortified flank walls might have had their uses formerly, in times when no feudal lord dared to embattle his mansion without a royal letter or patent; nor most his castle, with access by a drawbridge, without the same licence. At present, lofty screen walls are used but for prisons; for, in fact, they render the courtyard dark and melancholy, and the mansion cheerless as unhealthy.

Were these walls removed—for instance, Burlington House, and some lines planted within the range—what light and grace would the change not effect! The central portal might remain, but the whole semi-circular colonnade should be either swept away, or else reversed as wings opening to the street. Then that building, by the addition of a noble story, in accord with the splendid foundation of Lord Burlington, might realise one of the grandest features of the whole metropolis,—the elegant colonnade forming two quadrants, would, if transposed, exactly fit the side spaces, forming covered approaches at each extreme, and at same time masking the mean termini of the wings, and the blank walls of the adjacent houses.

It is scarcely necessary to allude to another bastion some 30 feet high, belonging to some ancient Saxon or Celtic noble in Cavendish-square: there are, however, other Picts' walls, more unsightly, and still more prejudicial, because they are greater in extent, and because they conceal and separate grounds of some extent and importance. Lincoln's Inn-fields, along the entire eastern range, is disfigured by an envious mass of deformity. The Benchers' Dining-hall, and the open grounds to the north thereof, are divorced by the decrees of law lords, as executed by Freemasons "*cœlitibus natis*." This is a lamentable imposition which divides the lofty elms within from the younger plantation without the pale of the square, and which at the same time deprives the fine Tudor Hall, by Mr. Hardwick, of the natural finish derivable from immediate contact with natural trees and vegetation.

Another, a more extensive and still more gratuitous outrage against public taste, utility, and health, is the inclosure of the *Chatterhouse grounds*, of some eight acres, by a varicoloured wall of stone, brick, chalk, and other materials, carried to a height of 9 feet throughout the whole circuit. This "*enceinte*" has at least the excuse of great antiquity, some of it being as old as the foundations by the Grey Friars; but it is not the less *Pictish* for that it is more *monastic*. The situation of this district is certainly less aristocratic, but it is more populous. There is not the same inducement to improve the surrounding region as if the neighbouring residents could afford money to pay for the s-lace, or time to think of the improvement and benefit derivable from the change. They are poor and spiritless, and are therefore unthought of in their mourning.

We do however think, or affect to think, more of the multitude—the *salus populi* is more regarded—now than was the case 100 years ago; and when it is considered how comparatively trifling is the expense of pulling down, as contrasted with building up; how very moderate the cost should be of a plain iron railing; and above all, when the enhancement of the value of all the surrounding property is taken into account; then, the most scrupulous parish vestry would hardly hesitate to act the beneficent, and sink the expensive.

*Wilderness-row* and its host of labouring occupants with their clustering families; Goswell-street, with its wealthy commercialists and thrifty tradesmen, would soon feel the benefit of the change: the spirit of improvement encouraged would extend onward still; and as in all instances of local embellishment, the spirit of emulation and rivalry would animate the old leaven of population to follow after, if not to



keep pace with, improved taste as exemplified about them.

A wealthy merchant in No. 5 of a crazy row will not demolish and reconstruct his fabric whilst all the others of the range are in a state of decadence; but when, as in the old dwellings about the Royal Exchange, one magnificent front neither stops at splendour nor expense in erecting a mart for the sale of cakes, or watches, or wares, then the example is taken up, and places which had neither the advantage of a direct ray of a wide thoroughfare, are transformed into palace ranges, rivaling those gems of art which the Italian forerunners of architecture have founded in the constricted alleys of beautiful Venice.

QUONDAM.

# ON STAINED GLASS.

At the joint meeting of the Worcester Diocesan and the Birmingham Architectural Society, held in Birmingham on the 12th inst. Mr. John Powell (of the firm of Hardman and Co.) read a paper "On Stained Glass." Ancient stained glass, he said, presents a wide field for the study and admiration of all antiquarians and artists, whether regarded historically, artistically, or religiously; but he would only attempt to point out some of its many beauties, and give a general notion of the principles upon which the "old masters in glass" worked. In saying ancient glass, he confined the term to the mosaic works of the thirteenth and fourteenth centuries, for soon after this period the true principles of the earlier men were more or less violated in the luxurious compositions of the fifteenth and sixteenth centuries, though these innovations were in some degree compensated for by the most astonishing display of artistic skill and harmonious colouring. The ancient windows were composed of what are technically called "pot-metal"; that is, pieces of glass coloured in the melting-pot, and entirely translucent, upon which the subject was drawn in opaque lines, and strengthened with transparent flat shadows. These pieces were then set into grooved lead bands, which formed the outline; the figure, group, or ornament thus completed, having been arranged to fit geometrical or straight frames of T-shaped ironwork, to which it was fixed by cotters; and, after so many centuries, even in our own days of mechanical ingenuity, no better plan can be devised for its firm construction; indeed, many of the old windows remain from the thirteenth century in their original frames of lead and iron, still in good condition. He would take in succession the three qualifications necessary for a good window, namely, colour, design, drawing, and would show how in each the old artists excelled. Firstly, *colour*: The first thing which strikes the eye on approaching a stained-glass window is its colour; and no one with a cultivated or natural taste for the beautiful can help feeling the translucent influence of a fair old window, how it softens the light without destroying it, preserving and assisting the architectural lines and features of the building without breaking the wall surface, and how, by its solemn light and religious stories, and by excluding external objects it keeps the eye within the building, and directs the mind by its design. Without true harmony and balance of colour the most careful and beautiful drawing is entirely ruined or lost; this, therefore, is the most important feature. Now one of the peculiar characteristics of the old glass is the simple, distinct tone of colouring, which, being constantly repeated with certain variations, runs like some old melody through all their windows. This is seldom or never attained in modern ones, where generally the colour is either too patchy, from being in too large masses, or too much cut up by an attempt to introduce every positive or neutral tint in existence, thus producing the effect of a kaleidoscope, in which the colours are thrown together by chance, without reference to the harmonious effect of the whole. The excellence of the old work in this respect is strikingly illustrated in the east window of Gloucester, where only four colours are used with wonderful effect; and again, at Merton College, where only one coloured band runs through the series of side windows, upon grisaille glass, with flowered bordering, tying them together, and becoming an architectural feature in itself. In these, and a hundred others, the eye rests naturally upon the intention of the window as a whole, instead of being dragged from one corner to another, astonished and bewildered at the violence and variety of colour, and which frequently looks as if a committee had chosen the best (or worst) parts of a dozen competitive drawings, and had them all arranged in one window,—perhaps a not unlikely way of accounting for many failures, for no number of clever men can design a window half so well as only

one, who, though he may be of inferior ability, follows out his single idea. Another great charm of the old glass lies in the quantity of pure grayish blue used, which generally circulates to the remotest corners, toning down and giving weight to the more vivid colours; backgrounds are usually of this blue, for no other colour relieves the figures so well, or admits of such a variety of tints harmonising upon it. Thus he might mention each colour, showing how knowingly it was used, and its peculiar beauty of tint—the rubies streaky and brilliant, with the colour generally mixed throughout the metal, not merely flashed on the surface, as is usually the case in our modern glass; the greens always quiet and used in large masses, not strong and vulgar; the whites always pearly or silvery (not thin and clear), and dispersed over the whole to give proper value to every tone; the brown purples used as a soft transition between the ruby and blue; and over all the golden yellow as a tint of sunshine, not the vulgar orange of the hall windows of our modern villas. And, as the seven notes of music are capable of infinite change of melody, by juxtaposition, so these few colours, varied from the palest to the richest shade, were sufficient for endless varieties of harmony in the hands of the old painters, the peculiar tint of each helping very much the effect of the whole. In the deep knowledge of choosing these arrangements of colour, the old men excelled, whether by science or by mere cultivation of the eye; and so carefully did they select the tints, that the broken fragments, the mere ruins, of an ancient window, thrown carelessly together by some thoughtless glazier (as at Lincoln in the Rose), is much more harmonious in its decay than most modern pretentious displays. It is often said, "Oh! time has done most of it. Dirt and atmosphere will harmonise anything!" Nothing is more false: it may be true that the more a modern failure is covered and hidden, the less its poverty and bad colouring will be observable; but regarding an old work, the brilliancy and jewel-like effect of the glass when new must have been startling, for the secret of their success lies in the material and its arrangement; the fine, thick, uneven pot-metal caught the rays of light, and held them fast, struggling and flashing in its gemmy substance, until the whole became a translucent picture, but without hurting the eye of the spectator, as no ray of light could pass directly through it. The four windows in Ely transept, by the Gerentes, of Paris, give very much of this effect, and though placed injudiciously high for their small grouping, still give a fair idea of what old glass was, fresh from the hands of the artist.

Secondly, *Design*.—In this important respect ancient glass is unrivalled; the finest designs, however full of meaning, are simple and forcible, so that the mind is led directly to the intention of what is set forth, and may be read at once by any one well versed in the history of the Old and New Scriptures, and the intimate relation they have to each other by type and anti-type. The old windows are full of the most profound Biblical knowledge, not only of the mere facts of the history, but of their meaning and spirit. It is a very common notion that the medieval men were ignorant of, or opposed to, the circulation of Scriptural knowledge; but these windows which they placed before the people were certainly replete with its great truths and lessons, from the first day of creation to the last vision of St. John. It would take days to speak with justice of the fine arrangement and symbolic treatment of the Canterbury glass alone, where each important event in the wonderful history of our Redemption was set as a jewel in the centre of four prophetic incidents in the old law relating to it, all of which was told by simple expressive Mosaic outlines, like some rare passages of an old author, condensed in meaning, but with very few words. So at King's College, Cambridge, though the glass is too late to be very correct on true principles (however artistically skilful), still it preserves the old arrangement of type and anti-type. The whole story of the Christian Church is told, from the announcement of the Angel to Joakim attending his sheep, that the reproach should be taken away from his sorrowing wife, Anna, and that she should bear a daughter, who was to be the mother of the "Messiah," through every incident of this marvellous history, the nativity, life, passion, and death of the "Son of God," and proceeding through the Acts of the Apostles, ends in the Assumption of the Blessed Virgin, who was considered as a type of the Church. To say nothing of Lincoln, Wells, and a thousand other examples of this method of illustrating either mysteries of the Faith or events of Sacred History still existing in England, what might not be said, if time allowed, of those vast churches abroad, with their mines of thought in stained glass—Strasbourg, Fribourg, Bruges, the Sainte Chapelle, Chartres, Evreux, Rouen—well-known names to the antiquarian. And here he ought to speak of the superiority of these kinds of composition for glass, this emblematic and figurative mode of bringing together historic or religious persons, and this heraldic instead

of natural way of representing them; for glass is placed against the light, which by playing upon it and being refracted by it, changes continually its effect, and produces a varying translucent brilliancy to the eye. It hangs up as it were a vision, through which the light passes, and not a bodily substantial thing to be touched, and upon which the light is thrown. Thus all designs are better of a celestial rather than terrestrial character, and historic facts are better represented as portions of the church's history, elevated in feeling, and as far as possible removed from the mere earthly scene—consistently, of course, with the introduction of all the necessary people and things, to explain the story, but with as few accessories as are unavoidable, either from being mentioned in the text, or wanted for intelligibility. This conventional design is constantly attacked by those persons who confuse the distinctive limits of glass painting with historic, landscape, and easel pictures. In the latter, great part of the merit lies in a close imitation of natural objects, in all their roundness of form; but in the decorative arts, like stained glass, nothing so misleads the eye, or is so false in principle; for in these the merit lies in covering a superficial plane with pleasure to the sight and interest to the mind, without destroying the flat groundwork; not giving a positive scene, or producing a stage delusion, which might induce a man to try and walk through a wall, to smell a painted flower, or wait for a bird to pass a landscape. In a window these effects may astonish the vulgar, but cannot delight the mind formed upon "true principles of art." This common error of exclusive imitation of nature in modern glass painting is strikingly illustrated in the Munich window at Cambridge, where the Medieval principles are cast aside as rude, unworthy guides. The landscapes are so natural that the eye, instead of being contained within the building, is ranging over sunny hills and along streams. The delusions are admirable. One felt inclined to test your sight by touch. In a lamp burns an inner chamber, where, consequently, no light is allowed to pass except through the flame: the cast shadows on the steps, imitation of metals, &c. &c. are wonderful, but the inconsistency gross, in making what is the real vehicle for light partially dark, on purpose to introduce a false light, with its own consequent reflected lights. How absurd to make cast shadows upon a surface through which real light passes, ignoring the true direct light, or only using it as a means of introducing a false side light; and these inconsistencies always force the artist to resort to unworthy doctored of the glass to produce the effects so much coveted: an enamel must be used, which destroys all transparency, and is not nearly so durable as pot-metal colour; and very soon the leads come in the way of true perspective and round drawing, and must be abandoned as interruptions; so, in the end, white glass is chosen, cut into squares, and covered with enamel surface colours. Plate-glass is required for outside protection, as at Cambridge; and the principle of material and design harmonising entirely destroyed. How refreshing it is to turn from these oil-silk-looking performances, apparently stretched tight to bursting, to the old windows, as at Cologne, where the principle of the material giving the colour, and the leads and the iron the construction, is honestly acknowledged, where six centuries have not dimmed the jewel and pearl-like translucency of the effect, and where they will probably remain, to see all their thin modern neighbours replaced by windows of a similar character, after this delusion of natural effects has passed away, and men judge glass upon its first principles of construction and material.

Thirdly, *Drawing*.—This Mr. Powell placed third on the list of essentials of a good window, for the reason that correct drawing, though necessary to a perfect work, is not so important as an expressive design—just as proper grammar and orthography are only second to a fine conception in poetry. Who dare to correct Chaucer, or Spenser? So, even defective drawing receives in the old glass painting a sort of reverence, from its use in explaining grand religious ideas; not that the faulty part of it should be imitated now, merely because it is so inseparable from the talent of the old masters. He had constantly noticed that the loudest attacks are made against stiff necks, twisted limbs, goggle eyes, splay feet, &c. by those who never see and cannot comprehend the deep symbolic meaning they may embody; but just because the severe outlines are not in accordance with the grace and correct measurements of their standard Apollo and Venus. Thus they turn their backs with a smile of pity or shrug of contempt. The truth is, that our forefathers laid as much stress upon the intention of their work as we do upon our correct drawing—they on great conceptions and ideas, we on mere correct forms. But very much of this want of natural drawing is to be defended upon true principles: thus, as perspective and foreshortening are

\* The meeting was presided over by Lord Lyttelton and the Mayor. The opening address was delivered by the Venerable Archdeacon Sandford, reported, with the rest of the proceedings, in the *Birmingham Journal*, and papers were read "On Metal Work," by Mr. W. C. Aikin; "The Church at Aston," by Mr. Davidson; and on the Monuments in it, by the Rev. C. Boutell.







DESIGN FOR THE FOREIGN OFFICE, TO WHICH A PREMIUM WAS AWARDED; ALSO FOR THE WAR OFFICE.—MR. G. G. SCOTT, A.R.A. ARCHITECT.





## THE "SURREY SIDE OF THE METROPOLIS."

In your publication of this day (Aug. 22), I see a letter from W—p Wykes: he remarks on the great difference that exists between the north and south sides of the Thames. He is not perhaps aware that the reason that the houses there are principally of the lowest class is, that the greater part of the land is held under "copyhold" tenure, either under the "Duchy of Cornwall," or the Archbishop of Canterbury, who have snug little customs of inflicting heavy fines on all holders of ground under them. If a plot of ground changes hands in any way, either by purchase or succession, then a heavy fine has to be paid to the "lord" of the manor, either his Royal Highness, or his Grace; and sundry fees to bailiffs and stewards of the manor, and to the "homage," who come to look on, take snuff, and pocket the fees. Consequently no landowner has a desire to improve the property, particularly as the fine has some mysterious way of increasing if the value of the property increases: hence you see rows and streets of miserable little four-roomed tenements built to last the life of the landowner, or the lessee under him; and the former does not care what state the property is in, so long as he gets the ground-rents. If his "Royal Highness" and his "Grace" would look into the matter, and arrange some equitable mode of enfranchising the land (which process is understood by no one exactly, as on inquiring into it, they generally stop on finding that the necessary payments will almost absorb the value of the property), then we should see this part of London very much improving in appearance, and not till then will there be any great improvement take place.

Few people know how absurd the custom is of taking possession of copyhold property in the "Duchy of Cornwall": it is quite a remnant of the old feudal times, and one is "seized" in possession by taking hold of a long pole across the table, the other end being held by the steward; and during the process, the "homage" (a few old antediluvian gentlemen) take snuff, and look out of window; the steward's secretary draws diagrams on a piece of blotting-paper and nibbles his pen; and the bailiff is busy computing the fees due to the court, not forgetting his own; and then the steward, having pocketed the fine, hopes that the lucky possessor will lay out a great deal of money on the property, as he very truly observes, "it wants improving considerably," and thus the matter ends.

A COPYHOLDER UNDER THE DUCHY OF CORNWALL.

## THE BROMPTON MUSEUM.

THE WEST CORRIDOR ON GROUND-FLOOR.

It is useful, as well as interesting, to trace the progress of establishments which are now of great extent and much utility. We have already referred to the time, not a century ago, when the then comparatively small library at the British Museum attracted only a couple of readers, instead of the many thousands who annually flock there now; and many remember the early efforts of men like Sir Joseph Banks, John Hunter, and others, and how they toiled for years with little encouragement in the faith of being able ultimately to produce important results. Those who remember the growth of various institutions in the metropolis and elsewhere will have noticed with admiration how the projectors have in most instances borne up against the coldness and doubts of the great majority who can only admire well-developed success after a long and struggling period.

A walk through the Brompton Museum and the schools adjoining induces thoughts of the efforts which in this case, as in others, have been required to be made before such an establishment could be obtained for the public use. As regards the Architectural Gallery, our readers know something of the labour of its founders, to gather together a collection of sufficient extent to serve the purposes of those for whom it is intended.

For long the necessity was felt in this country, both for instruction in art, and for exhibitions and museums of specimens of art and manufacture. In bygone years we have noticed the interest which was felt in the exhibition of models of machinery, &c. which, like the wild-beast menageries, travelled from town to town. Then several attempts were made at intervals to form collections, which were a sort of faint forecast of the Great, yet temporary Exhibition, which was to follow; and it may be remembered, that each attempt greatly exceeded its predecessor in interest and importance. The exhibitions got up under the direction of the Society of Arts led to good results, and caused the inhabitants of several large towns to open Polytechnic exhibitions. As these various exhibitions progressed, they showed clearly the necessity for schools of art, and the adjuncts which are necessary to render them useful.

Thirty or forty years ago but few of the English schoolmasters could draw rough plans, and mathe-

matical diagrams; and, probably, not a score had any knowledge of even the elements of higher art. We have assurance that in a town of from 30,000 to 40,000 inhabitants, at the time above mentioned, there was, so far as is known, but one general teacher who could pretend to teach drawing. Some of the masters were clever in devising and executing birds, and such things, in ornamental penmanship, but their skill went no further. There did, however, rise up artists in the town from unexpected position,\* who occupied part of their time in giving instruction in drawing, but that was done without system; and the "quarter's drawing," which began to be considered a necessary finish to the education, did not produce very useful results.

Notwithstanding the strong, yet smothered feeling for art which existed amongst the people, it is scarcely twenty years since its importance was acknowledged by the Government.

The first school of design was established under Mr. Poulett Thompson, President of the Board of Trade, in Somerset House, in 1838, having for its object the training of designers who should improve the patterns and designs for manufacturers. Councils and committees were appointed under the Board of Trade. The progress was, however, slow, and in the course of twelve years not more than twenty-one schools, which were chiefly kept in existence by grants from the State, had been established in the provinces.

In seven or eight years the provincial schools, now on a self-supporting basis, have increased to sixty-five, and at the date of the last published returns the number of persons under art instruction amounted to 31,455, at the average cost of 16s. 2d. per head. At the commencement of the present plan, five or six years ago, when the Department was established, the number of students taught in the various schools was only 3,296, and then the average expense was 31s. 2s. 4d. per head. Satisfactory as this increase may be, it is necessary to bear in mind that even the present number of students bears the most trifling proportion to our population. We must therefore consider this establishment only as an infant one, although it has the art schools, a library of 5,000 classed volumes, 100 portfolios of prints, drawings, &c. and the galleries of art at Brompton as a nucleus. Omitting for a time the central hall of the Museum of Ornamental Art we will walk to the other portions of the collection, and it may be useful to those who may not have an opportunity of visiting it to say that it is divided into seventeen portions:—

1. *Sculpture*—including carvings in marble, stone, wood, and other materials. 2. *Painting*.—Wall decoration, paper-hangings, &c. 3. *Glyptic and Numismatic Art*.—Cameos in shells, &c.; medals, seals, &c. 4. *Mosaics*, in stone, glass, and various other materials. 5. *Furniture and General Upholstery*. 6. *Basket-work*. 7. *Leather-work*. 8. *Japaned or Lacquered Work*. 10. *Glass Manufacture*. 11. *Enamels*. 12. *Pottery*. 13. *Works in Metal*.—Wrought, cast, and stamped works; chasing, engraving, etching, &c.; instruments and utensils; locksmiths'-work, goldsmiths'-work, inlaying, niello-work. 14. *Arms, Armour, and Accoutrements*. 15. *Watch and Clock Work*. 16. *Jewellery*. 17. *Textile Fabrics*.—Costumes, lace, embroidery, carpets, hangings, &c.

It will be seen by this list, that the Department embraces a vast variety of materials; and it is stated that "this classification will undergo revision, and the museum is intended henceforth to include other categories of art not as yet represented in our national collections." At present, the whole number of specimens, including those in the central hall, the side galleries, &c. and the 1,000 examples now at Manchester, is upwards of 4,000; and it is satisfactory to know that, considering that the Museum of Ornamental Art was founded only seven years since, so much has been gathered together. Its rapid growth is remarkable; the suite of rooms at Marlborough House, which were granted for its reception by her Majesty, soon became too small, and it was found necessary to stow away very valuable matters in the basement of that building.

Besides the specimens now at Manchester, there is generally a picked selection of works of art circulating amongst the towns in which schools of art are established; and during the three years that this collection has been exhibited at fourteen places, at periods of from four to six weeks, the number of visitors has been about 110,000.

The west corridor, which stretches the entire length of the Gallery of Mechanical Inventions, the Educa-

\* T. M. Richardson (the father of the present painter), who painted water-colours of a high character, was originally a carpenter, then turned schoolmaster, and then artist at the age of nearly 40 years. J. W. Carmichael, marine painter, was a ship carpenter. George Balmer, a very clever artist, who died before his full powers were developed, was a house-painter. H. P. Parker had been brought up to the sea. John Martin was a coach-painter. Mole, the water-colour painter, was an attorney's clerk.

tional Museum, and the Central Hall of Ornamental Art, and which is divided into various bays, is occupied by a large collection of casts of the details of Greek, Roman, and Renaissance architecture: these have an increased value in consequence of being placed near carefully prepared models of the most famous temples of former times, made for Mr. Nash, the architect. There are also photographs of these remarkable ruins as they are at present; and time may be usefully spent in examining the high qualities of the art here exhibited, and comparing the models with the casts and photographs, which may enable many, without travelling, to form a good idea of those works which by name are so familiar. In addition to the photographs there are also numerous engravings and drawings, still further to illustrate the art of this period.

The collection of casts and illustrations of the Renaissance period is both extensive and valuable. There are copies in distemper of the compartments and pilasters painted by Raffaele and his scholars in the Central Hall, which should properly have been placed here, but there is not room for their entire height.

A committee of three architects have been appointed by the Lords of the Privy Council to examine and advise on the arrangement of this collection of casts, and to make such suggestions to increase its value as may seem desirable; so that we shall have something more to say on the subject.

Amongst the objects which here meet the eye, are fine casts of goldsmiths' and other highly-decorative work preserved in various collections, which have been chiefly produced by the electro-deposit process; many of these have been procured, by the permission of the French Government, from the collections in the Louvre and elsewhere. The photographs, which find a place here, of various works in the same museums, are also very useful.

Some of the stained glass of the fifteenth-century, placed in the windows at the end of the corridor, are brilliant examples of colour; there are also a number of original drawings of window-glass by ancient artists, and a large collection of porcelain of Sevres and other French manufactures, and also revivals of Italian ware and English work. Several specimens of mosaic must not be passed over without notice: some of these are remarkable for the pictorial effect which has been produced by this material.

At the upper end of the east corridor, a collection is in course of arrangement of art manufactures,—chiefly of Indian tissues, Chinese and other porcelain, bronzes, lacquered and Damascus work, &c. which, when finished, will be a very attractive part of the museum.

## ORGANS.

Your correspondent, "Crito," who writes so pleasantly on organs, will not, I am sure, object to my answering the query he propounds; and, briefly as may be, I will endeavour to reply to it.

According to Hopkins and Rimbauld\* (who, by-the-by, have extracted verbatim the account in "Hamilton's Catechism of the Organ," by Joseph Warren: London, 1851), the original organ in St. Patrick's Cathedral, Dublin, was built by Renatus Harris in 1697. No reliable authority that I have seen names the legend to which "Crito" alludes.

The notice in the *Spectator*, mentioned by "Crito" will be found in No. 552 of that work; Dec. 3rd, 1712. Dr. Barney, as usual, has something entertaining and to the purpose on the subject, and remarks that, as the paper in which it occurs is by Steele, "it is probable that Harris had acquired his patronage and friendship by lending or building an instrument for his concert-room in York-buildings;" adding, "if he had not been biased by some means or other, and had been a real judge of what he recommended, he would certainly have inserted the name of Bernard Smith instead of Renatus Harris."

Some of the almost deserted City churches possess organs of considerable size and merit, most of them but very little known in proportion to their excellence. I wish I could conscientiously echo in their behalf the good-natured observation of "Crito," as to the musical performances connected with them.

A CHURCHMAN.

While on the subject of organs, it may not be amiss to record that about a year ago, in the church of St. Giles-in-the-fields, an instrument attributed to Father Schmidt was taken down, and replaced by an entirely new one. If the former constituted the "*Spolia optima*" of the modern builder, it is to be regretted as a loss of an old if not very beautiful specimen. An undoubted specimen of Schmidt's workmanship at St. Clement's Danes is at present undergoing a reparation.

\* "The Organ; its History and Construction," p. 656. London, 1855.

† Hist. Mus. 111, 441.



CHURCH-BUILDING NEWS.

**Stanford.**—The south-east pinnacle of St. Michael's Church, Stanford, was struck down by lightning on Friday in last week. The church is a modern structure, erected in 1832. It is situated in the centre of the town. The effect of the electricity, when it reached the base of the pinnacle, from not meeting with a ready conducting medium, was to uplift the whole mass, and the base having traversed about the eighth part of the circle, fell into the roof of the tower. The iron tube, or spouting lower down, and by mere accident, used the part of a lightning conductor, and served to protect the other parts of the tower from most serious injury, if not entire destruction.

**Wedgebury.**—St. James's Church, Wednesbury, was built some ten or twelve years ago in a very populous and poor district, but in a short time it was found that accommodation for those officiating in the service was required, and alterations were made in the interior from time to time, but of a very unsatisfactory description, owing to the smallness of the church and the want of proper vestries or robing-rooms for the clergy and choristers. The recent alterations, which have been made under the direction of Messrs. Griffin and Weller, architects, Wolverhampton, are calculated to supply this deficiency. The church has been extended to a length of about 33 feet, and the original porch and small vestry attached to each side of the church have been extended, so as to form an organ-chamber on the south and vestries on the north. The church is fitted with oak stalls, and the floor laid with Minton's encaustic tiles. A stone credence niche is inserted in the north wall. The chancel arch has been widened to admit of the end of the stalls being placed level with the nave wall, and to throw open the chancel as much as possible. The architects at first recommended that a new chancel, &c. of good Decorated character should be erected, with a view to the ultimate rebuilding of the nave in the same style, but the difficulty of raising the necessary funds seemed insurmountable, and it was at length agreed to extend the building at as little expense as possible.

**Taunton.**—The parish church of Staplegrave, a populous suburb of this town, has been restored. The church at present consists of a nave and chancel, with north aisle to nave, and tower over a southern porch, and also a south aisle extending eastward from the tower and overlapping the chancel, into which it opens by a small arch. The windows are of Early English design. Mr. C. E. Giles, of Taunton, architect, has carried out the restoration of the building. The windows are now filled with cathedral glass, those in the two aisles having coloured borders, the glass for which was presented by Mr. W. Easton. The east window and that opposite the font are filled with glass from Lavers'; the design of the former in the centre light being our Lord's ascension, with evangelistic symbols in the two wings, and the head being filled with Christian symbols. The baptismal window (also furnished by Lavers) contains the figure of a dove, with some stained glass, and was presented by the Misses Cardew, of Staplegrave. The west window, the present of Mr. W. E. Gillett, of Fairwater, contains six medallions illustrative of our Lord's life, the head being filled with a cross crowned with thorns. The benches are all open, and formed of stained deal, with plain ends, except those in the chancel, which are of oak with stall ends. The pulpit is of carved oak, the base being Bath stone. The floors are of stone, into which various old monumental stones are inserted. The floor of the *sacristy* is covered with coloured tiles, the steps being of black polished lias. There are other improvements, including an arcade of three pointed arches of Bath stone, which now divides the north aisle from the nave. There is an octagonal font on the north side of the nave. It is of Caen stone, with centre shaft of the same material, having eight marble columns (four each of Cornish serpentine and Irish green), with carved capitals. Three sides of the octagon are carved with baptismal subjects.

**Ruthin.**—A memorial window has recently been placed in Llanydd Church, Ruthin, by Mrs. Jones, of Cambaker town, to the memory of her brother, the late Mr. John Williams, M.P. for the borough of Macclesfield. The window is a four-light east window; the stone-work by Mr. John Williams, of Newbridge, near Ruabon; and the glass by Messrs. Powell, of London. The subjects are—"Christ Blessing Little Children," and "The Last Supper." Another window has been placed on the north side of the church by Mr. George Johnson, of Llanydd House.

**Aberhafesp.**—A stranger to this parish, Mrs. Broome, of Berthou-hall, Llandinam, some time since presented 500*l.* towards the restoration of the church of the church, the erection of a tower, and the general improvement of the edifice. The whole of these improvements have now been carried out. A stained glass window, erected by Lieutenant-General Proctor, of Aberhafesp-hall, to the memory of his daughter,

the late Mrs. Bernard Coleman, has been put up. The design is included in a panel, formed by a foliated enclosure of intermingled passion-flowers and lilies on a ruby ground. It comprises two classical figures, representing an Angel conducting the spirit of a woman to its Heavenly abode, and pointing to the star of Hope amongst the foliage above. The figures are lightly coloured on a deep blue background, and have at first sight rather a startling effect, as they seem to be standing out in bold relief. Messrs. Baillie and Co. of London, were the artists.

**Chester.**—For some time past workmen have been employed on the Lady-Chapel of Chester Cathedral, in consequence of the dilapidated and critical state of the roof. Under the directions of the Dean and his architect, Mr. Hussey, the necessary repairs have been effected, and the opportunity taken to examine the walls, arches, and pillars of the interior of the structure. Where required, new stones have been inserted in the masonry, and other precautions taken to arrest the further progress of decay. A discovery has been made of unusual interest, the more so, perhaps, as it was purely accidental. Immediately over the chancel of the chapel, the groined ceiling terminated in a massive boss, which, for probably more than 300 years, had presented itself to the spectator as a mere Tudor rose. This ornament the masons were instructed carefully to clean and restore; but it was found on examination so thoroughly decayed, that orders were given to remove it altogether, preparatory to inserting a new one in its place. "The removal being accomplished," says the *Chester Chronicle*, "the workmen, to their surprise, found themselves gazing on the original boss, of high allegorical interest and beauty. The scaffolding has not yet been taken down; but so far as we can make out from below, the subject appears to be, the 'Crucifixion of our Lord.' The Saviour is represented in his last agony on the tree: behind the cross, the Father is seen sustaining in his Almighty arms the dying person of his beloved Son. A dove, the emblem of the Holy Spirit, is whispering, as it were, heavenly consolation and comfort to the Crucified; while on either side an angel administers relief to His extended hands, lacerated by the nails which bind him to the cross. This beautiful boss, or rather its strange preservation, we most likely owe to the zeal of Thomas Clarke, the last Abbot, and first Dean of the Cathedral, who, when the order went forth to destroy every visible emblem of the ancient faith, succeeded in saving this curious work from its impending fate, by hiding it beneath the shade of the then popular Tudor rose!"

**Doncaster.**—The site of St. James's Church has been staked out, according to the local *Gazette*, on the vacant ground north-east of the railway schools. The outside dimensions to the face of the buttresses of this edifice, are 127 feet by 64 feet; the inside being 113 feet by 53 feet. The church will consist of what may be called two naves, one rather wider and higher than the other, placed side by side, with a bell turret rising out of the smaller one at the west end, but standing within the church. A row of pillars alternately round and octagonal runs down the middle, forming six bays of the same size, and with arches of the same character, as those in the old parish church. There is no mark of division between the nave and chancel, excepting a larger buttress externally and a larger pillar internally, with the usual steps; and consequently there will be an unbroken length of roof of nearly 120 feet. The walls are to be 30 feet high, and the top of the roof about 54 feet. The bell turret is an open octagon ending in a small spire, 96 feet high. The ground plan is as simple as the elevation, the only projecting building being the porch; for the vestry is inside, at the west end of the north aisle (or the smaller nave), by the side of the tower wall. At the east end of that aisle is a circular window, in order to enable an organ to be put below it. The east window of the chancel is of five lights, and will be of the same size and general character as the side east window of St. George's. The side windows will also be much like the north aisle windows of the great church, but rather higher, and set rather deeper from the outside. There is scarcely anything of a merely ornamental character either inside or outside the church, as it was intended by Mr. E. B. Denison, who suggested the general design, to show that a truly Gothic church can be built, by relying merely on the great English characteristic of length, instead of the foreign one of height, and on sufficient mass and sufficient depth of shadows, and the avoidance of the modern style of "finishing," against which he has said so much in his lectures. The walls will be of rough stone, like that in the belfry of St. George's; the mouldings and quoins and arches alone being dressed or ashlar work. The stone to be used is not Steeley, but Ancaster. The wood-work is to be of deal, and the roofs are to be covered with Staffordshire tiles. The church is to hold 700 persons. Mr. Scott, we understand, is the architect.

**Whitby.**—The consecration of Christ Church, Ugthorpe, took place on the 6th inst. The church is in the Early English Decorated style of architecture. The plan is cruciform, consisting of chancel, nave, and transepts, with a light octagonal spire from the west end gable. The length of the nave is 80 feet, and of the transept 39 feet; the height of the ridge 32 feet, and of the point of the spire from the earth 54 feet. The roofs are open timbered, with curved ribs supported on stone corbels. The windows, by Mr. Wailes, of Newcastle, are all bordered, and the tracery filled with stained glass. The church being dedicated to Christ, our Lord forms the sole feature in the design of the east window, which consists of three lights, with tracery, and each with a full-length figure of the Saviour. A small window, on the south side of the chancel, was presented by Mr. Wailes, and is entirely filled with stained glass. It has the figure of an angel in the centre. Messrs. Coe and Goodwin, of London, were the architects; and Mr. William Langdale, of Whitby, the builder.

**Riding Mill.**—The picturesque village of Riding Mill (Carnbrough), by the side of the Newcastle and Carlisle Railway, is now, says the *Gateshead Observer*, a place of fashionable resort, and a church is to be erected there, on an eminence (Mr. and Lady Margaret Beaumont being among the principal contributors to the funds). The plan comprises nave and chancel, with vestry, tower and spire (66 feet high), and porch. The style is Geometric Decorated. The stone will be taken from the Prudham quarries. The woodwork will be stained and varnished; the seats open. Mr. Matthew Thompson, of Sunderland, is the architect.

PROVINCIAL NEWS.

**Reading.**—The lightning, in a recent thunder-storm, struck the engine-house at Messrs. Barrett, Exall, and Andrew's Foundry, and set-fire to it. The flames extended with astonishing rapidity from the engine-house to a timber shed, ironmongery warehouse, saw-mill, deal shed, &c. The value of the property destroyed is estimated at between 1,500*l.* and 2,000*l.*

**Rochester.**—Alterations and additions are to be made at St. Nicholas's Schools, Rochester, Mr. A. D. Gough, architect. The following tenders have been received:—Cotton, Rochester, 704*l.* 10*s.*; Dove, Brothers, London, 696*l.*; Spicer, Strood, 475*l.*; Naylor, Rochester, 448*l.* Some one is wrong.

**Faversham.**—A short time since tenders were applied for by Mr. Higham, successor to Mr. G. Newton, draper, &c. of the High-street, Faversham, for a proposed extension and repairs to his business premises—to be commenced immediately, and completed on or by the first day of October next, under the superintendence of Mr. Bulmer, of Maidstone, architect. The tenders as received were as follow:—Messrs. Page and Shrubsole, 713*l.* 18*s.* 6*d.*; Rook and others, 735*l.*; S. M. Shrubsole, 730*l.*; Redman, 794*l.* 5*s.*; Knowles, for plumbing, painting, and glazing, only, 265*l.*

**Worcester.**—The new works at the County Gaol, the progress of which had been stayed in consequence of the pending question relative to the separation of Dudley from this county, have now been actively resumed, the subject alluded to being settled by the withdrawal of the Government bill. The following were the tenders for the cemetery chapels, lodges, &c.:—Mr. J. Walker, Evesham, 5,101*l.*; Mr. J. S. Wood, Worcester, 4,965*l.*; Messrs. J. Barnsley and Sons, Birmingham, 7,388*l.*; and Messrs. Chambers and Hylton, Birmingham, 4,830*l.* The last named was accepted.

**Stoke St. Gregory.**—The first stone of new parochial schools, designed by Mr. C. E. Giles, of Taunton, subject to Privy Council arrangements, and about to be erected in this parish, was laid by Lady Anna Gore Langton, on the 20th instant.

**Whitwick.**—The foundation-stone of a new national school-house for the education of the children of this populous mining district was laid by Lady Beaumont on the 18th inst. The schools are to be built in the form of a Latin cross; the longer and transverse arms forming the boys' school, 60 feet by 18 feet, and the girls' school, 50 feet by 18 feet; the short arms, 20 feet by 16 feet, forming the infant school. The boys' school will have a class-room attached to it. The entrances are to be sheltered by porches, forming the hat and cloak closets for the scholars. Between the boys' and girls' schools fold-doors will be placed, so that the two rooms can be thrown together for meetings, &c. They will then be in the form of a T, and will accommodate 800 persons. As schools they will be designed to accommodate 300 children. The external construction is intended to correspond with the rugged scenery surrounding the site, the structure being built of fragments of stone gathered from the forest land in the



vicinity, relieved by dressings to the windows, gables, &c. or wrought stone from the Worthington and Ashby quarries. The contractors are Messrs. Cooper, of Ashby, and Mr. W. Hallam, of Whitwick.

**Leeds.**—The Town-hall Committee of the Leeds Town Council met on the 17th inst. to open the tenders for building the Town-hall organ. Five tenders were sent in for the stipulated amount, 4,000*l.*, and eventually the tender of Messrs. Gray and Davison, of London, was accepted. This firm built the large organ used at the Handel Festival in the Crystal Palace. It is hoped that the organ for the Town-hall will be completed by next autumn.

#### FOREIGN INTELLIGENCE.

**Cologne.**—*The Ladies' Tapestry for the Cathedral.*—The ladies of Cologne had already combined in a previous year to adorn the presbytery of the cathedral with tapestry. But the side walls of the high choir also had been deprived, in the lapse of time, of their former ornament of paintings, which have been now supplied by twenty-eight pieces of fine tapestry. The subjects are taken from the Nicene creed, and were made after designs of M. Rambour, conservator of the City Museum of Cologne. The last portion of these embroideries is now hung up in the cathedral.

**Album of the City of Trieste.**—The merchants of that important emporium of the Adriatic have presented Princess Charlotte with a splendid and original album. It is made of ebony wood, 18 inches high by 22 wide, and so covered with the most exquisite ornaments, that little of the cover is to be seen. Its real artistic charm are twelve views of Trieste and its fine environs, painted by Messrs. Dell'Acqua, Fiedler, Merlato, &c., to which Dr. Kendler has written an explicative text. At each corner is a rose of Lapis lazuli, fixed by a button, in brilliants. All the rest of the cover forms one incrustation of garlands, arabesques, and the arms of the city of Trieste, in gold, silver, ivory, &c.

**Paris.**—*Disappearance of entire Streets.*—The works of reconstruction of the Pont St. Michel are pushed on most actively, even steam power being brought into action. The railing of the new little square, south of the Palais des Thermes, corner of Rue des Mathurins St. Jacques, has been completed. Of the once considerable Rue de la Harpe, of historical renown, leading to the Pantheon, Ecole de Médecine, &c. nothing will remain, but a small portion contiguous to the Place du Pont St. Michel. The space before the peristyle of the Louvre, opposite the Pont des Arts, is, at this time, occupied by the statue of Geoffrey St. Hilaire, the great zoologist, companion of Bonaparte in Egypt, &c. The head is of noble proportions, and all the parts of the statue (2 kilom. 50 high) are well kept and executed. It is the work of M. Elias Robert. After being exhibited before the Louvre, it will be conveyed to Etampes, the birth-place of G. St. Hilaire, to be placed in one of the squares of that town.—The waters of the Seine have been as low this year as in 1719—one of the lowest known levels, which is taken as the standard of observations. This year, also, the piles of the bridge of Notre Dame, and the stone covering of the foundations, near the Hôtel des Monnaies, have been visible. This, however, was surpassed in 1448, when, according to Sauval, people could pass dry-footed from the Place Maubert to Notre Dame.

**Académie Française: Prizes for Virtue, &c.**—These prizes are of modern origin, and are given to domestic servants and journeymen for long and faithful services, supporting their masters in old age and misfortune, &c. They vary from 2,000 francs (80*l.*) to 1,000 and 500 francs, of which latter there are seven and twenty, respectively, distributed every year. A prize of 2,500 francs was decreed to M. A. Monnier for his work, "Public (Charitable) Assistance in Ancient and Modern Times."

**Caution.**—A Berlin contemporary, on seeing so many houses built five or six stories high, 75 feet from ground to cornice, asks—"Whether the lungs of the present generation will stand the effort of such great ascensions?"

#### REMAINS OF THE ANCIENT CHAPEL AND HERMITAGE ON THE ISLE OF DOGS.

We have before now referred to the curious vestige which forms the subject of the adjoining engraving, and on other occasions have spoken at length of the Isle of Dogs.

It would seem that in very ancient times this was a dry portion of land saved from the overflow of water by the great river embankment to which we have already alluded; and it is not improbable, that as far back as the Saxon rule there was a road across the island to an ancient ferry across the Thames. London historians do not, however, mention the foundation of a religious establishment in times so



REMAINS OF ANCIENT CHAPEL AND HERMITAGE, ISLE OF DOGS.

remote; it is, nevertheless, certain, that at a very early period there was a chapel and hermitage here, probably so placed for the convenience of those whose necessity obliged them to travel over what was then a desert wild.

In most maps of London, near the centre of the Isle of Dogs, is a spot marked "The Chapel-house;" and although the name smacks of antiquity, few would think, by a glance at the dilapidated yet perfectly modern-looking buildings which are now here, that there existed any remains more than forty or fifty years old; however, those who have the curiosity will be repaid by a more careful examination; for mixed up with the modern work are undoubted traces of the old hermitage, the cottages having been fitted into the massive masonry. The original structure has evidently been of rude work; the chief stones are large, and have been filled in between by flint and rubble.

The people living here know nothing of the interest which is attached to the site. They had noticed that large stones occasionally dropped down, but were not aware that in bygone days a succession of patient hermits here dwelt to shelter and comfort the wayfarer. It will not be long before the bustle and throng of population will be so great that it will be difficult to believe that a hermitage could have here existed, or been needed.

#### PROGRESS OF MILWAKEE.

SINCE the year 1832, this city has rapidly increased both in population and importance, and from being a mere Indian trading post, has become the commercial metropolis of Wisconsin. It now possesses excellent schools and academies of considerable pretensions. There are seven public school-houses completed, or in course of erection, large, airy, well arranged, and of handsome exterior, and affording accommodation for upwards of 2,500 children. There is a regular incorporated university, and a well-endowed college for females. No less than fifty buildings are devoted to divine worship, and some of these have much architectural merit. Two Gas Companies, chartered by the Legislature, furnish the city with excellent gas, at 3 dols. 50 c. per thousand feet. A Hydraulic Company has also been chartered to supply pure lake water. Large quantities of the clearest ice are cut in the river during the winter, and supplied at moderate rates during the summer. Milwaukee enjoys an excellent market, supplied with quantities of meat, fish, fowl, and vegetables.

At present the spirit of progress is very manifest. Large numbers of stores and dwellings are in course of erection, and completed last year at an expenditure of two millions of dollars. The Newhall House, a first-class hotel, 180 by 120 feet, and six stories high, exclusive of basement, to cost 160,000 dols.; the United States Government buildings for a Custom-house, Post-office, and United States Courts, to cost 125,000 dols.; the State Bank and the Albany costing each 50,000 dols.; the blocks of splendid stores, erected by J. B. Cross, Inbush (Brothers), &c. &c.; the new school-houses for the second, fourth, and seventh wards, costing 16,000 dols. each; three churches costing each about 20,000 dols. are

amongst those in progress, or recently completed. In June last, an official return showed 1,349 new buildings in course of erection, irrespective of many in contemplation. Two new banks have been added to the eight in existence last year, and the banking capital has increased half a million of dollars during 1856, and now amounts to 1,500,000 dols. Milwaukee has a healthful and commanding location, and unrivalled harbour; an unlimited river front, a perfect net-work of railways connecting it in all directions with the systems of adjacent States; a fertile and salubrious country, and an industrious population. Its lake front rivals in beauty that of Naples; its famous brick lights up its business streets; thickly planted trees shade and adorn its principal thoroughfares; and the Milwaukee river, flowing through it, secures a thorough drainage, furnishes abundant water power, and forms a pleasing feature. The inland sea stretches 400 miles in length, 80 in width, and 900 feet in depth. The Milwaukee and Horicon Railroad is one of the most promising enterprises in the State. It is now completed to Ripon, eighty-one miles, and in a very short time will be extended to Berlin, ninety-two miles, whence it will connect with Oshkosh and the lower Fox by means of steamboats. The present railroad system embraces nine distinct lines radiating from Milwaukee, and sweeping round in a complete semicircle, reaching Chicago, penetrating Illinois, touching four different points on the Mississippi, and connecting with lines of roads traversing Iowa, Minnesota, Lake Superior, and various other places. Twenty-six breweries, employing 500 men, are in operation. Thirty-five millions of bricks, for the home demand alone, were turned out last year, 350 men being engaged in the manufacture. The population for 1857 is 45,000: in 1838 it was but 700. Milwaukee may hopefully contend to rival any of the cities in America.

#### RECOLLECTIONS OF THE INTRODUCTION OF ILLUSTRATED LITERATURE INTO ENGLAND DURING THE PRESENT CENTURY.

It is impossible to overrate the value of the artistic schoolmaster now abroad amongst us, extending knowledge in all directions, and giving a double value to literature, by combining with it representations of forms and scenes which it would be impossible otherwise to describe.

The advance of illustrated literature during the last twenty years is extraordinary; nor is this to be wondered at when we notice the natural feeling which has existed amongst all nations and in all ages to produce artistic forms which would convey ideas or preserve the memory of objects and events.

The hieroglyphics of the Egyptians and other ancient people show that thousands of years ago the illustrated literature was appreciated: in fact, the stone picture-books long preceded those of paper. The great white horse in Wiltshire, and the rude carvings of human beings, beasts, birds, &c. met with in caves and remote places, at one time formed the illustrated literature of England.

Our Saxon ancestors have shown their appreciation



of artistic illustrations by adding to their written copies numerous valuable and curious pictures of the scenes of bygone days. It is strange now, when hearing the shake and rattle of the modern steam printing-engine, to think of the patient monks "in cloisters grey" spending a lifetime in the occupation of copying and illustrating a single volume; and in spite of the knowledge of the necessity for advancement, men at times, in the hurry, drive, and anxiety of these stirring days, cannot help casting a longing glance back to the quiet career of those early pioneers of our literature.

As the demand for books increased in England up towards Henry the Eighth's reign, we find the illustrations of manuscript volumes becoming more and more scanty; and when that wonderful revolution—the introduction of printing from wooden and other types, was brought about, books, in consequence of the inability of the printers to supply suitable pictures, became, as a matter of necessity, more barren of illustrations. However, in course of time the skill of the copperplate engraver was called into use, and rude attempts were made by means of woodcuts to deck the volumes which now in considerable numbers began to issue from the press.

The practice of illustrating books by means of copper-plate engravings as years passed on became more and more common, and yet, notwithstanding, the books were almost as much out of the reach of the great masses of the people as were the illuminated volumes of former days. Amongst the early illustrated works may be mentioned those published by Alderman Boydell and others.

We have just now before us several magazines and other volumes of about a century old which serve to show the great advance we have made during that time. The venerable and still flourishing publication the *Gentleman's Magazine*, takes its place amongst the foremost of our illustrated periodicals, and it is worth while to examine the cuts and copper-plate engravings which were sufficient at its commencement to render that journal popular amongst the higher and educated classes in this country. We have before referred to the value of the exertions of the Bewicks in advancing the art of engraving on wood, and will now glance at some of the earliest means of distributing picture-books amongst the multitude, and it would not be proper to omit mention of a publishing firm, originated sixty or seventy years ago, by Messrs. Mackenzie and Dent, at Newcastle-on-Tyne, for the purpose of providing illustrated books. At that time, a large number of the coal-miners of Northumberland and Durham were almost as ignorant and savage as Hottentots, and in some of the large iron foundries of the neighbourhood the "crews," as they called themselves, were so clamorous and formidable that officers of justice did not dare to venture into those districts. Surrounded by such a population, the active publishers, both of whom are long since dead, proceeded to print and illustrate copies of the Bible, Testament, and other religious books. These were published in numbers, at a cost of from 6d. to 1s. each. Numerous canvassers carried these through the towns, villages, and country, and it is worthy of note, that many thousands who could not read, bought these numbers, week after week, evidently for the sake of the pictures. When completed, the books thus collected were strongly bound, and then covered with green baize, and may be seen in the hands of those who can read them at the present day. The cost of the numbers of a family Bible bought in this way, would be from 3s. to 3l. 10s. At the present day, a very well printed Bible can be purchased for 2s. 6d. Books of voyages and travels, illustrated with engravings of huge serpents, rivaling in thickness and width the tallest trees, and other animals, the drawings not being remarkable for truth to nature, illustrated books on the breeding of sheep and other domestic animals, had such a large sale, that the plates were constantly in the course of reproduction and repair. The amiable novels such as "Pamela," were also in great demand. Mr. Mackenzie, amongst other works, produced histories of his native town and county, which are worthy of great praise for their adherence to facts, and for their general interest. These were illustrated by both plates and woodcuts, and were published in numbers at a large profit. There were other publishers in London and the country working in the same manner as the gentlemen just mentioned, who were, however, at the time, looked down upon with some contempt by publishers of large and completed works: the good effected nevertheless by these means was very great.

By referring to the title-pages of books of the date above mentioned, it will be seen by the prominent announcement, "Illustrated by copperplate engravings," that woodcuts were looked upon as quite inferior commodities. This is still further shown by the circumstance that Bewick came to London to try his fortune, and met with so little

encouragement from the publishers, that he shook the London dust from his feet with contempt, and embarked on board a collier for the north.

Many of our readers will remember when they were schoolboys, the *Mirror*, which was one of the first of the cheap illustrated periodicals issued in regular weekly numbers.

Amongst the first attempts to illustrate newspapers was the publication, in *Bell's Life*, of humorous and characteristic woodcuts from drawings by George Cruikshank. Then came a number of views and plans of the scenes connected with the murders by Thuriell and his companions. These had an immense sale; but the difficulty of printing woodcuts at that time with rapidity prevented their continued use.

The introduction of steel plates for the use of engravings supplied increased facilities for printing large numbers from engraved plates, and led to the publication of the "Annals" introduced by Heath, and those delicate plates ("Illustrations of the Bible," "Byron's Poems," &c.), executed under the superintendence of William and Edward Finden. But for the use of steel instead of copper, which enabled the printer to get from one plate 30,000 or 40,000 good impressions, instead of a few hundreds, these highly finished plates could never have been produced and sold at the price they were. Large sums were paid to the best engravers for those works, which, in their peculiar way, had not been excelled before, nor have they since been surpassed. For one of these small plates, about 3 1/2 inches, after John Martin, the engraver received 120 guineas.

It is worthy of notice that when the wooden and leaden types came into use the quiet old penmen must, like the Moors, have exclaimed that "their occupation was gone," and still the new method which was supposed to be the means of producing the work required by a very small number of hands, gave employment to an increased multitude. In like manner, when steel plates were introduced, it was predicted that the profession of engraving was ruined, and yet, in a short time, the demand for engravers was greater than ever. The same result has been caused by the introduction of wood engraving.

#### SUSSEX CHURCHES.

THREE weeks since you stated that a new church had been built and consecrated at East Grinstead. Allow me to tell you an anecdote of these parts. A gentleman, being very anxious to take a house in this beautiful neighbourhood, made an excursion in various directions, and at last saw a house that was shut up. After trying, in vain, to obtain admission, first at the front and then, at the back door, he caught sight of a boy at work in an adjoining field. He made his way to the youthful labourer, and said to him, "My lad, I want to see this house." "Wheel," said the boy, "there it be." Now, touching the new church at East Grinstead, there is no one who can reply as the boy did, for there is no new church, either recently built or contemplated. There is, therefore, some mistake.

While writing to you, will you allow me to call attention to the disfigurement going on at Worth Church. There is actually being built a red-brick vestry, with stone dressings, on to this almost unique Saxon remnant. Are the archaeological societies merely dilettanti pleasure-seekers, or do they intend to be really useful? A SUSSEX YOKLE.

West Hoathly, Sussex.

\* \* It should doubtless have stood "East Grinstead, *Wiltshire*." It is to be hoped that our correspondent's indignant protest against the doings at Worth Church will have the effect of preventing the mischief contemplated.

#### ARTISTICAL COMPETITIONS.

##### THE WELLINGTON MONUMENT.

THE profession is deeply indebted to you for the spirited manner in which you have declared war against the recklessness and incompetence which have become a national reproach in our public competitions.

But for you we should not, in all probability, have had the noble and disinterested protest by Professor Cockerell. Let the profession continue to rally round your standard, and *dilettantism*, or rather *noble-lordism*, will be driven for ever from the field. The result of a series of suggestions by practical men will be regulations for the conduct of competitions, based upon common sense, and which will secure to the talent and genius of our country their full reward.

The report that the commission is to be given to Marchese is simply absurd, after having invited all Europe to a competition for the work. It would be resented as a gross insult.

There seems to be no alternative now but a carefully selected jury, consisting exclusively of professional men, whose duty will be to select the best design for the place and purpose from amongst the exhibited designs.

The site has been selected with consummate judgment, it is precisely the situation which would have been chosen for such a purpose in the best Gothic periods, and we also find a similar one selected for all the important monuments of the Cique-cento period.

If your correspondent "Epsilon" will give himself the

trouble to make a small "pervious" model, and place it between himself and the window, he will discover that it is the only means by which a fine and picturesque chiaro-scuro can be obtained in such a situation. W. L. S.

#### A GLIMPSE AT AN ANCIENT RAGGED SCHOOL.

IN the ancient chronicles of London we read of many times of hardship caused by famine and the pestilence which almost certainly follows it; but at no period do we find a greater degree of confusion and distress existing than during several years which succeeded the dissolution of the monasteries and other religious establishments in the reign of Henry VIII. These houses had been for some centuries the means of supplying assistance to large numbers of the destitute poor, and filled, to a certain extent, the place of the parochial relief which is at present afforded.

In consequence of the sudden stoppage of the customary amount of help, the poor wandered beseechingly about the streets, bands of dangerous persons, many driven, in the first instance, by want, rendered both life and property unsafe, and children were left without care or good instruction, many of whom grew up as they do at the present day, to swell the regiment of sturdy thieves who prey upon the metropolis.

In the reign of Edward VI. the attention of a few wise and well-intentioned persons was directed to the sad state of affairs which existed in London. Amongst these the Primate of the metropolis, Bishop Ridley, was deeply struck with a sense of the danger which existed, and took the opportunity, when delivering a sermon before Edward at Westminster, to direct the attention of the youthful king to the evils which existed, and so forcibly was he impressed with the necessity for immediate exertion, that directly after the service he summoned the bishop to his presence, and with a wisdom beyond his years, considered various plans, and during the conference wrote a letter to the Lord Mayor and other authorities of the City, urging them to proceed vigorously in the necessary work. This letter was delivered by the bishop, and so well was the king obeyed, that in an incredibly short space of time the destitute and dangerous in London were divided into three classes.

1. The poor by impotency, consisting principally of orphans, the aged, blind, and lepers.
2. The poor by casualty, comprising the wounded soldier, the decayed housekeeper, and diseased persons.
3. The thriftless poor, including the riotous, that hath consumed all, the vagabond that will abide in no place, and the idle persons of ill fame, both male and female.

For the second (the decayed housekeeper being very properly relieved at home) St. Bartholomew's and St. Thomas's were provided.

As regards the first, the lepers, who had been accustomed to wander in the streets, and in order to provide food directed public attention towards them by ringing bells and clapping dishes, were taken to certain hospitals provided for them in the suburbs. The destitute poor were accommodated in an almshouse. The vagrant and thievish were well received, and according to their deserts, in the Bridewell. There still remained the *destitute children*, and for these it was determined to set apart the remains of the once celebrated house of the Grey Friars.

This building and grounds were immediately made over by the king to the corporation; the alterations and restorations were commenced, and so great was the zeal that in six months' time 340 children were admitted into the Institution. In the first instance the children were clothed in russet livery, which was shortly exchanged for one of blue, the same in form, &c. as that now worn by the Christ Church boys.

In a few months after the interview between the bishop and the young king, the numerous children gathered chiefly from the streets, lanes, and alleys, attended by the bishop and corporation, progressed to hold an interview with Edward at Westminster, when a petition was made to the King's majesty, for leave to take in mortmain, or otherwise without license, lands to a certain yearly value; and a space being left in the patent for his grace to fill up with what sum he thought fit. "He looking," says Stowe, "on the void space, called for pen and ink, and with his own hand wrote these words, 'Four thousand marks by the year,' and then said in the hearing of his council, 'Lord, I yield thee most hearty thanks that thou has given me life to finish this work to the glory of Thy name.'" After the foundation had been thus established, the king did not live above two days.

In addition to the royal grant, large sums were subscribed by citizens, and year by year the school has increased both in the number of its scholars and in the public estimation, and men like Camden, author of the "Britannia," Bishop Stillingfleet, Samuel Richardson, Charles Lamb, Leigh Hunt, and a host of others who have worn the blue gown of



Christ's Hospital, have caused it to be looked upon with as much respect as is the distinctive costume of the collegiate establishments. Now the scholars of this school are selected from a much superior class than in former years. It has advanced in the public estimation, grown with the prosperity of the City, and although it still most worthily performs a most important duty, the original purpose is changed, and it now requires much interest and favour to get a boy placed in the enviable position of a scholar on this foundation. Notwithstanding, the school at its commencement\* was intended to provide for the poor destitute children of the metropolis, an object which is equally necessary at the present day, and our object in making these remarks is to direct attention to the circumstance that, by the united efforts of the king, clergy, corporation, and citizens of London, besides other measures, 340 were in less than six months taken from their distress and danger, and put in the way of earning an honest living. At that time the population did not amount to 200,000. If the case of the poor children should be taken up with the same energy, and as much done in proportion to our metropolitan population of two millions and a half, we should take 4,250 destitute children from the streets, and provide them with education, and food, and shelter.

#### RECENT BUILDING PATENTS.†

**JOHN LESLIE, Conduit-street, Regent-street.—Stoves and Fireplaces.** Dated 6th December, 1856.—A stove or fireplace is made with a solid bottom, as is described in a former patent. The front is formed with a grating or fire-bars: the back is made, by preference, of fire-brick or fire-clay. The outlet or flue into the chimney is just above the bottom of the stove or fireplace, so that the air entering in front passes to the flue through the fire: that part of the air which enters the fire above the flue, together with the smoke and products of combustion from the fresh fuel, passes downwards through the well-ignited fuel near the bottom, and the smoke and products become ignited and consumed. At the top of the fireplace or stove over the fire is a moveable cover of fire-clay, which closes in the fire at top. In front of the fire are air-tubes communicating with the outer atmosphere, by which air is conducted to the fire near the bottom.

**GEORGE SHERWIN, Waterloo-road, Burslem, Staffordshire.—Manufacture of Fire Bricks, Tiles, Crucibles, and other articles, when fire-clay is used.** Dated 12th December, 1856.—In place of employing the fire-clay and silicious matters in the ordinary condition, they are first slipped separately, and then combined together, with burned clay and silicious matters. The fire-clay or marl is prepared by grinding, in the ordinary manner, and then slipped, all particles of iron ore, stones, and other substances (not clay) being removed or separated. The crude or calcined flint, sand, quartz, or silicious matters, are also ground and slipped. These matters are combined with suitable quantities of similarly prepared clay which have been burned and crushed, and the combined plastic compound is made into bricks, tiles, and other articles in the ordinary manner.

**AUGUSTE EDOUARD LORADOUX BELLFORD, Bedford-street, Strand.—Drying, Burning, and Cooling Bricks, Tiles, and other Ceramic Substances.** (A Communication.) Dated 4th December, 1856.—These improvements consist of a certain method, hereafter described, for effecting the drying, burning, and cooling of certain ceramic substances, in such a manner that the different changes from cold to heat, and, *vice versa*, may be perfectly gradual, thus avoiding a great amount of breakage; also in the oven being so constructed as to allow the three operations of drying, burning, and cooling to be conducted without intermission all the year round. The principal peculiarities of construction of the oven are as follows.—The oven is composed of two parallel channels or vaults, one for burning and the other for cooling the materials. The furnace is placed at the extremity of the burning channel. Over and round these channels is constructed a drying chamber, which is divided into six compartments, and used for drying the plastic materials. Between the top of the cooling channel and of the floor of the drying chamber is left a small space enclosed between two ranges of cast-iron plates through which the waste heat arising from the cooling channel circulates, and by means of registers passes into one or several compartments of the drying chamber, the heat in the said compartments being regulated by keeping the registers open or closed. On the brick floors of the burning and cooling channels and of the drying chamber is laid a

line of rails, and the floors have a slope of such inclination as to allow the waggons used for transporting the bricks or other ceramic substances to be easily pushed forwards. The slope of the burning channel is above the furnace, that of the cooling channel below it. At the extremity of the burning channel, or at any spot judged convenient, is erected the chimney or shaft, and the smoke passes up it by means of subterranean passages leading from the furnace to the said chimney. Each of the channels is closed by two doors about 3 feet apart from each other, and forming an ante-chamber. At the end of the burning channel, facing, and close to the furnace, is a turntable fitted on to a transverse platform, on which the waggons containing the materials to be burnt may be made to rotate in such a manner as to expose equally the different sides of the mass of materials to the heat of the furnace.

#### COMPETITIONS.

**Foleshill New Union Workhouse.**—The plans of Mr. Edward Holmes, of Birmingham, have been selected for the above building.

**Westbromwich New Cemetery.**—The Westbromwich commissioners met on Friday, 21st, to decide upon the twenty-one designs submitted for the above cemetery, when those of the architect last named were selected.

**Medway New Union Workhouse.**—The guardians here also have accepted the plans of Mr. Holmes for their new workhouse.

**Bowdon Church.**—Mr. Jas. K. Colling wishes us to insert the following protest sent to the churchwarden, to aid in preventing similar occurrences in future:—

"I must beg to protest against the act of the committee for the rebuilding of Bowdon parish church, for having awarded the second premium in the late competition to drawings which were 'tinted' in sepia with grey and blue backgrounds, this being contrary to their advertisement to architects for 'plans'; the words of which were upon this point as follow: 'The drawings to be prepared entirely without colour or tinting of any kind.' I further beg to assure them, without for one moment denying the superior ability which may be contained in those drawings, that they have by this selection not only violated their own words, but have committed an act of unfairness towards all the other competitors who complied with their wishes in the preparation of the drawings."

#### Books Received.

##### VARIORUM.

**W. BLANCHARD JERROLD's** long-looked-for Guide to the Exhibition at Manchester, at sixpence, has just been published, and will sell well no doubt, but it should have been out long ago. As it purports to be only edited by Mr. Jerrold, we had no right to expect originality in all it; still, some might think it beneath his reputation to publish a work of sixty-four pages of which one-half only is original matter, the rest consisting of extracts from the *Times*, *Athenaeum*, *Saturday Review*, *National Review*, *Fairbairn's Letter*, &c. It will be found very useful nevertheless.

A pamphlet on the metropolitan main drainage question, titled, "The Discharge Difficulty overcome, by the above-ground Tubular Sewer System, invented by William Richardson, C.E.," edited by George Clark; with Plans," has been published by Weale, of High Holborn. Messrs. Richardson and Clark's proposal is an extension and modification of the above-ground plan of Mr. Richardson for the drainage and sewerage of the south side of London, laid before the Commissioners of Sewers in 1852. The projectors maintain that while the cost of such a system would be less, the revenue from sale and distribution of sewerage would be much greater under the system than that of subterranean sewerage. They propose to extend their iron tubular sewer from the point of outfall B\*, at Barking-creek, to the sea at Yantlet-creek, lifting the sewage to a height of 45 to 55 feet above the level of the collecting reservoir, and gradually letting it fall again as it progressed towards the sea. The idea is rather a startling one; but the desirability of avoiding the formation of an open river of filth to meander through the country all the way to the sea may of itself induce attention to schemes which otherwise might be regarded as impracticable. The projectors urge the analogy of the system of water supply in favour of their project.

"Menstruation; Plane and Solid, for the use of Schools and Colleges, and especially adapted for Self-instruction," is a small treatise by the Rev. J. S. Boucher, M.A. the principal of the Holly Bank School, at Birkenhead (Longman and Co. publishers), comprising, as the title-page states, "a series of arithmetical illustrations of the most important practical truths established by geometry, and designed to serve as a companion to Euclid; also as an introduction to land-surveying, trigonometry, and conic sections." It contains many clear and familiar examples, a variety of novel diagrams, and upwards

of 1,500 apparently careful examples, with their answers.—We may here notice another book of formal instruction just issued by the same publishers, namely, "A new and complete Course, theoretical and practical, of strictly graduated Grammatical Idiomatic Studies of the French Language," by Auguste Aigre de Charante, French master in the Royal Military Academy. This seems to be a very elaborate and valuable work, extending to between eight and nine hundred pages of small octavo. It is divided into four parts,—Pronunciation and Accidence,—French and English Syntax compared,—Gallicisms and Anglicisms,—and (written in French) Syntaxe de Construction, Syntaxe d'Accord, and Difficultés. There are said to be contained in the work 5,000 entirely original examples, besides a system of colloquial exercises. The War-office, it appears, have adopted this work for the use of the military cadets at Woolwich.—A Report of "the Cases of Westerton against Liddell (clerk) and Horne and Others, St. Paul's, Knightsbridge; and Beal against Liddell, Perke, and Evans, St. Barnabas, Picnic," has been drawn up by Mr. E. F. Moore, M.A. barrister-at-law, and published by Longman and Co. Though full of ecclesiastical matter of no special interest to our profession, there is much valuable matter here on ecclesiastical questions connected with the interior decoration and furnishings of churches with which every architect ought to be acquainted.

#### Miscellaneous.

**AMUSEMENTS.**—Mr. Willett Beale deserves the thanks of the public. The Royal Academy *conversations* is over; Parliament is prorogued; Mr. Albert Smith has shut up and gone off to Pompeii; in other words, the London season is more than over, and yet, thanks to the enterprise of the gentleman named, the pent-up Londoner may find music at the Princess's Theatre at playhouse prices, rendered by Gisi, Albani, Gassier, and Mario, to say nothing of a number of other admirable artists less known to fame. The "Travalia," "Norma," "Rigoletto," and "Lucresia," have already been given in good style, and other operas are announced. To the same gentleman, if we mistake not, London is indebted for finding all the eminent artists we have named, with the exception of Mario, at the Surrey Gardens, where a concert of first-rate excellence for a shilling will be given for a week to come. The provision of healthful and high-class enjoyments for the people is a matter of no small moment, and therefore we repeat, Mr. Willett Beale deserves the thanks of the public.

**BANBURY WATER COMPANY.**—The whole of the contracts for these works are now taken, and we understand they are within the estimates of the engineer, Mr. J. Hodgson Jones, of Westminster. The tenders were made out on quantities taken out by a surveyor nominated by the contractors. The following are the parties who have obtained the contracts:—For reservoir and engine-house, Messrs. Davis and Sons, Banbury; steam-engine and pumps, Mr. Charles Lampitt, Neithrop; filter-beds and pipe-laying, Mr. John Aird, London; sluice-cocks and hydrants, Messrs. Ghost and Chrimmes, Rotherham; supply of mains, the Buttery Company, Alfreton, Derbyshire. Some of the tenders are necessarily upon schedules of prices, and therefore the amounts cannot be given until the quantities required are ascertained.

**DISTRICT OF ST. GEORGE'S IN EAST, AND ST. BOTOLPH WITHOUT.**—At a meeting of the Board of Works held on the 21st instant, Mr. Henry Flower, district surveyor, resigned his appointment, and a surveyor was named to do the duty until a successor was appointed.

**DWELLING-HOUSE IMPROVEMENT COMPANY.**—The prospectus of the Dwelling-house Improvement Company, limited, has been issued, with a proposed capital of 200,000*l.* in shares of 2*l.* each, upon which the deposit is fixed at 5*s.* per share. It is mentioned that the formation of the company "has been promoted by an association of gentlemen desirous of proving, by example, that the dwellings and homes of the middle and working classes may be built in an improved style, with great increase of comfort, health, and convenience, combined with economy; while at the same time the capital invested will be simply remunerative."

**FATAL SEWER ACCIDENT.**—A few days ago, three labourers were killed, and two more made insensible, by foul air in a great excavation facing the entrance of the late Pavilion Theatre, in Whitechapel-road. One of the poor fellows descended after the other to give help to the first and to those who followed; and such is the good feeling which workmen display in like circumstances, that more would have been imperilled, had not a foreman, who knew more about the nature of the accident than they did, prevented them, and directed that those in the sewer should be hooked up, without more of them descending into it.


\* The blue colour was in former years the principal dress of the poorest classes in England, and it was only towards the middle of the last century, that owing to its introduction into the navy, it being the party colour of the "Whigs," it was worn by gentlemen.

† Selected from lists in the *Engineer* journal.



# The Builder.

VOL. XV.—No. 761.



OUR Indian Empire is at this moment the engrossing subject in all minds. Thousands of our countrymen are knit to its destinies by the presence there of relatives and friends, and wait with trembling and fear the arrival of every mail and message; while hundreds of thousands who are free from such ties quiver with indignation and grief at the recollection of the barbarities committed by the traitorous scoundrels—the inhuman fiends—who have revolted from our sway, and demand, as with one voice, the infliction of a punishment complete and terrible. Never was the heart of England more stirred than it is at this moment, and woe to those in power who disregard its promptings. With these sad events it is not our province to deal; but, bearing upon them, we have advice and a warning to give, which, if attended to, will save life, lessen sorrow, strengthen our arms, and shorten the struggle.

WE ASK FOR THE IMMEDIATE ORGANIZATION OF A SANITARY COMMISSION TO PROCEED TO INDIA WITH OUR ARMY.

We could point to a score of warnings in our pages, attention to which, in the first instance, would have saved wealth and lives: recollect, if no other, the dangers of the camp at Aldershot; the evils which threatened the Golden-square district, in a sanitary point of view; and the indefensible arrangements at Netley hospital, all pointed out by us in time to have prevented the evils before they occurred; and let the Government listen to our warning now, and act with wisdom and promptness. But what good will it do? some may ask.

A Parliamentary report, recently published, as to the deaths in the Baltic and Black Sea fleets, shows that the deaths in both fleets, in the years 1854 and 1855, numbered 2,020, of which 1,574 were the result of disease, 228 of suicide, drowning, and other accidental causes, and only 227 of wounds in action. These figures show that in our navy, as in the army, pestilence and disease are far more fatal than the sword or artillery, and the other perils of war. The deaths by various diseases amounted to upwards of 7 to 1 of those which were caused by battle.

The report states that if the Baltic fleet had not anchored in Baro Sound during the summer of 1854, and if the fleet in the Black Sea had shunned Baljick and Varna in July, August, and September of the same year, the ravages by cholera would have been very much lessened. We also learn that there is no evidence to show that the climate and soil of the steppes of the Crimea had the least effect in producing complaints approximating to cholera; but that accumulated filth and effluvia, arising from the decay of organic matter, brought their sure and deadly results.

In one ship of the Baltic fleet, the number of deaths by cholera amounted to more than half of the whole of the deaths which occurred from this cause in that fleet. It would be useful to know the position of this fatal ship at the time of the attack, the nature of its ventilation, the space, accommodation, &c. allowed to each man, and other sanitary particulars.

In the Crimea armies, the number of those who died from disease was immense in com-

parison with those who fell in the various conflicts. This is the case in all campaigns. A competent authority has stated that a quarter of the British army engaged in the Indian war will fall by fever, cholera, dysentery, and similar complaints. Two of the chiefs of that army have already perished by these agencies, and hundreds of men. In the Crimea these were more deadly foes than the Russians.

If, then, we find that the pestilence is more terrible than the enemy, it is evidently necessary that we should have commanders and officers as capable of fighting the one as the other. During the long continental war, forty or fifty years ago, the principles of sanitary science were but little understood; and even at the present time, we fear that the sure means of saving life by a proper attention to those laws which prevent many fatal complaints are still too little understood, or even believed in, by the leaders of our fleets and armies. Terrible as are all the horrors of war, there is no phase of it more dreadful to contemplate than the probable death of 250 out of each 1,000 strong men who form our army in India,—not while aiding the actual object in view,—not in the excitement of battle and with the glory of success,—but helplessly and unnecessarily, in camps and hospitals, stricken down by rotting matter,—killed by want of sufficient pure air!—and these not the aged, the delicate, or those of tender years, who form such a large percentage of the ordinary deaths in our population, but men in the prime of years and manhood.

At the present time in the metropolis and large cities the death of 40 persons in the 1,000 per annum is considered, and rightly, a very great excess: it is little short of murder, indeed! In some of the model buildings of London, inhabited by families, the number of deaths in the year is 16 in the 1,000. Out of the sixteen above mentioned, if the average number of infants' deaths be the same as among those belonging to a similar class in the metropolis, we should have nearly half of the deaths under five years. This shows the value of mature lives, and that every care must be taken to save them; especially, says the financier, when we recollect what it costs the country to send each man to India.

Sanitary management must be greatly improved, and ere long become one of the chief arts of warfare. The time is not far distant when an admiral will rather place his ships within the range of over-powerful batteries than in positions which ensure the certainty of pestilence; and that in the choice of places for encampments, the sanitary condition of sites will be held in nearly as much consideration as their military fitness.

The late Sir Charles Napier, when in India, found large bodies of men dying with fearful rapidity of fever and cholera, and on more than one occasion immediately stopped the progress of these diseases by moving the camp to other sites. A similar kind of judgment will be required at the present time: but we fear that certain saving measures have not yet been properly studied and appreciated by the heads of either our army or navy; and, certainly, measures in due proportion to our extended knowledge of the science of preserving health have not yet been adopted.

At a time of great distress, a body of sanitary officers were sent from England to endeavour to stay the plagues which beset the camp before Sebastopol, and much advantage resulted from the step. This of itself, and with the clear evidence which we have at home of the fact, that by knowledge and exertion thousands of valuable lives may be saved, should lead at once to what we are calling for, namely, the appointment of a distinct and sufficiently powerful body of sanitary officers, and also of workmen to

carry out their instructions, to attend the army in India. We believe that such a corps, properly organized, would, in a region like India, be the means of adding immensely to our available force. It is true that many of our army surgeons are quite capable of giving advice on this subject, but we have reason to know their opinions do not meet with sufficient consideration; and, moreover, the calls upon their attention during a campaign leave them little time for additional duties.

Thousands will die in India unnecessarily, if the course we now urgently point out be not pursued.

## ART IN OUR PARKS.

SOME months since—from observation of certain public statues and contradictory evidence of the merits of British sculptors—we were induced to speak of the relationship of the arts, as not recognised practically, and of a required predominance in works of the first class belonging to other "arts" than architecture, of those qualities of beauty which are architectural.\* More recently, we have had to pursue the subject in connection with notices of the models for the Wellington monument.† Believing that the restriction of "architecture" to a sense which we may call the technical or professional one, involves results not favourable wholly to progress in the separate arts—we venture to consider the bearing of the inquiry upon a different vehicle of expression,—one which though it may not have held a recognised place with painting or sculpture, is nevertheless to be regarded as art,—and as that in particular, which is of great importance to the public. We refer to what we then designate the *art* of landscape gardening.

The right apprehension of this art is essential to the success of improvements in our parks, in which considerable interest is taken by the present Government,—as to those similarly in our squares and open spaces,—and even, streets. In such improvements there is a vast field as yet almost untouched; and every art, general or particular, which contributes to those objects, is, at the same time, an agent in the sanitary, social, and moral amelioration of the masses who must congregate in towns. For, the influence of such works as we refer to, is not only that acting directly on the bodily and mental constitution of individuals, but comprises that which is transmitted from either seat of impressions to the other. The immediate sanative effect is an object second in importance to none; but the indirect agency has seldom been estimated at its proper importance, as bearing upon the same end. It is not sufficient to provide open spaces; but, these must be such as are beautiful and attractive, like Hampstead Heath, or they must be aided by some resources of art.

The requirement for inhabitants of towns, is somewhat akin to that which is perceived by the commanders of armies in cantonments, or of crews in winter-quarters in the Arctic regions,—the need of some amusing occupation for the mind as a direct means of preserving health. It is, of course, now capable of clear demonstration that change of pursuit is necessary to man: relaxation of some sort is essential; and, for the majority of the people, to whom labour is of unvarying character, the choice only lies between what is harmless, or beneficial, and that which is noxious individually and socially. Therefore, the growth of populated districts, without abundant provision for the solace which the mind requires, and can receive through the eye, is to be regarded as of very doubtful benefit in civilization.

The question of providing, by sufficient vegetation within the area of towns, for the chemical change which is part of the process of respiration, has been often discussed in these pages. Be it understood, that whatever the human constitution requires—received through the exercise of one function,—it equally demands through the excitement of the visual and mental sense. The beauty of Nature, no less than the products of Nature, was designed for use; and, for the same end, the power to create the beautiful by

\* See p. 213, *ante*,—on "Monuments and Statues."

† See pp. 416, 425, 445, 457, and 469.



art, was conferred on man. By no means should all the sylvan beauty of a district or suburb be destroyed by the progress of building; but the trees should be retained, and patches of green sward where possible; and these would impart that element to the architecture which it now much requires, and without which, or without association of position and contrast with some objects of natural beauty, our art really fails of that which is its true character and full expression. Need we then say again, that merely the ample provision of parks, or other open spaces, requisite as this is, does not comprise all that is needed, but that whilst the beauty of natural objects—trees and shrubs—should be exhibited in our *streets*, the beauty of art should be considered in the design and “laying-out” of our parks, and the arrangement of any of our public gardens. Architecture and sculpture, indeed, are never seen to greater advantage than when in immediate conjunction with the works of nature; and whether, as some hold, nature is designedly imperfect, and the operation of mind in man which produces art, has scope left for it; or whether an order of images, with distinct attributes of beauty, is produced by the union of art and nature; certain it is, that we have never seen a combination of architecture with sylvan, maritime, or rocky scenery, where the natural element did not seem to derive a special charm from the presence of the art. The fact of such value from variety and contrast, is deducible from, and is part and parcel of that philosophy of art which is studied in the book of nature itself. It might be predicated from what delights in the landscape, or in natural objects alone, that the fact would be so,—by the opposition of marked regularity and symmetry to what is comparatively irregularity and freedom—of obvious and human art, to art of the most elevated kind—not apparent. For, as some say,—

“All nature is but art, unknown to thee,  
“All chance direction, which thou dost not see.”

We ought, perhaps, in the opinion of some of our readers, to give the whole of our exertions, just now, to the matter which might be considered of first consequence, namely, provision of the open spaces themselves—more numerous in proportion to the inhabited districts, more general in their distribution, and on a systematic plan of addition, *pari passu*, with the growth of London. This subject is even yet far from exciting the steady attention which its importance merits. Knowing that a vast majority out of the London residents are so circumstanced, that they must remain, day after day, as much walled in from the beauty of nature as if the existing parks had never been provided; feeling that health, alike bodily and mental, requires, as we have shown, not only the sustenance of pure air, but that of change of scene and variety of objects; again, knowing that the difficulty of getting open spaces increases rapidly,—whilst large tracts of ground, unfit to be built upon, become crowded with habitations,—we marvel at efforts which, as shown in a recent article,\* are so disproportionate to the requirements, and at the positive opposition which has to be encountered. Before it has been settled whether the country, or the metropolis, or particular districts should provide parks, the chance of gaining ground at all, will have gone by; and ultimately, resentment against whatever power or authority is popularly known—of course the Government—will be loudly expressed.

Cobbett was accustomed to say that London drew to itself the strength of the country, or prospered by impoverishing the provinces; but, it should be recollected on the other hand, that the metropolis, or, in fact, its inhabitants, benefit the nation; and these suffer even grievously, from their choice of residence, in so doing. It can be necessary only to make allusion here to the multifarious influences of the condition of dwellings—a condition far worse than what exists in provincial towns, and due, in great measure, to the cost of ground, or to the working man, the difficulties or expense of conveyance between the centre and the suburbs. Consider also, how large and increasing a pro-

portion of the people—beyond the two millions and a half of Londoners—spend, for business or pleasure, some part of the year in town, and perhaps feel a proper pride in what conduces to the adornment or the prosperity of the capital. Recollect the positive inconvenience which is entailed on London residents, by the influx of strangers on all occasions of public interest. Be it an exhibition of 1851, a hero's funeral, a peace commemoration, or an emperor's visit; a queen's birthday, a drawing-room, or an Epsom or Ascot race-meeting; the country pours into the town a new “tide of human existence,”—its thousands, often noisy, mischievous, or unwashed, to fill the best seats at places of resort, to take your accustomed corner where you are wont to dine, to crowd the public conveyances, or elbow you on the pavement; and, freed from the check on them at home, to aid in supporting the idle and vagabond life in London thoroughfares by day and night. Seriously, the balance of account is not even, between the seat of legislation and government, or what has been described as “the centre of commerce; the beginning, end, or *route* of relations with every part of the globe; the resort alike for pleasure or the pursuit of knowledge,” and the country—which would contribute nothing to the required improvement and decoration which all would derive advantage from, or be ready to use. Since these remarks were written, however, the claims of the metropolis have been ably argued in the *Times*, in opposition to the view taken by the country members in the present Parliament.

We apprehend that the need of doing something for London is becoming such, that the several wants referred to must be supplied, or before long there may be consequences for which our legislators are not prepared. The true originating cause of an epidemic, a prevalence of crime and discontent, or a season of commotion and insurrection, is seldom looked into; and means of *prevention*, which, according to the most frequently repeated, but least applied of proverbs, would be better than “cure,” are never offered.

The requirement which mainly we are now considering—not merely a common sanitary one—directly, as indirectly, bears upon the moral and mental health of the two and a half millions, and of the whole community. We do not say that a policy to be initiated, is that of keeping the people amused through devices for making holiday, as under continental governments. There is greater entertainment in looking at the forms of the created world, or realizing the impression of art, than in witnessing shows and festivals,—better managed abroad though these are, than with us,—from the prominent element of art which is made to contribute to them. But, what is a natural yearning should be allowed to expand,—as it might once have done,—till “man made the town,” with its pestiferous streets and crowded houses. In default of this, the substitute cannot but be sought. Vices of a degrading character, we believe, will prevail wherever there is an uninteresting sameness of objects. Much, doubtless, is being done by cheap literature—though in the absence almost, in London, of public libraries with standard works, not so much of value, we fear, as is sometimes supposed; and much may be effected by the growing appreciation of studies, such as natural history, which, with the aid of recently introduced contrivances, can afford the highest interest and instruction in doors, and serve to help the effect of comfort, or the adornment in a home. But, even more than this is desirable; or rather, is wanted: variety and instruction such as there are in nature out of doors, still are required; and art is needed no less than when there were no books, and when science had no inducements for the people. To such end, it has to be recognised that natural beauty is to be provided for the dweller in towns; that variety of feature also must be presented; and that a combination of the forms of nature and art enhances the effect of each, and multiplies the variety.

Some of the peculiarly beautiful effects in flowers and foliage, in rocks and water—as in other natural objects—are those which are seen when architectural forms enter into the com-

bination; and as we have considered, the aid to the expression of architecture, of objects of that kind, is such, that the especial character and beauty of the art is, perhaps, never thoroughly attained without it. If so, in English cities, as a rule, architectural effect is dependent upon what can be seen of the sky and clouds, or what may be called—borrowing a term from Chevreul on Colour—the *successive contrast*, which the observer may happen to supply through his recollection of nature. It is impossible for him to realize the true beauty of architecture, who has not seen it in unclouded light, or free from the deadening influence of the smoky canopy which hangs still over London.

Let it not be supposed that to the mere holiday-maker—the Cockney knowing we will say nothing of our art—of style, or order, or moulding—the exhibition of architecture, with trees and flowers, is useless, and without power of influence for any effect. He who thinks so should visit Rosherville, or any tea-garden about London, and note the fact of the use which is made both of architecture and sculpture,—use, we admit, which is bad use, and which gives no idea of the real beauty of a combination where good art prevails, but such as is sufficient for our argument as to the want that is felt, and the result which could elsewhere be attained. Similarly, in the terraces and gardens of the Crystal Palace, an effort is made to produce considerable effect, by a like principle of combination. The details of the architectural portion of the design there might have been better, but the value of the principle is made obvious.

Yet curious it is, that in those very “lungs of London,”—the public parks,—nothing can be culled from the same recognised principle of art to enhance the beauty of the scene, as by the use of the associated arts of architecture and landscape gardening. Not a lodge or entrance has been added during years past, that is even worthy of comparison with the works of the time of George IV. and of Messrs. Nash and Decimus Burton. The last of these architects especially, was allowed to do just enough to show what was wanted—if only by his screen and gateways at Hyde Park-corner. Several of the entrances, formed about the same time, are not without merit, though not of that kind which is now appreciated. Greek architecture, peradventure, may be undesirable for future selection; and when it was in favour, it might have been managed with greater skill in numerous instances; but it is depreciated even lower than is justified by the treatment of it in such cases as we have alluded to, or in those of park entrances in many parts of the country. The doubting reader who will accept the challenge at comparisons, is referred to Albert Gate, Prince's Gate, the entrance to Kensington-gardens from the Bayswater-road; and that newly-formed, to St. James's-park from Pall-mall. He will find it difficult, we think, to make out that in such matters art has offered any exhibition of advance, or that in any country in Europe there is less thought given to like works. It is difficult, in short, to discover any work into which art has entered, as executed in our parks during the long interval we have been referring to. Indeed, with the exception of the Serpentine-bridge, of a building or two in Hyde-park—as the Humane Society's Receiving House—which it forms no part of our present object to have added to,—of the Achilles, and of a solitary resting-place and fountain near the foot of the Serpentine, absolutely nothing now appears to exist,—or belonging to the particular branch of art which we have classed with landscape gardening. We except the new bridge in St. James's-park, as only just being completed. But to it we can return. Scarce an effort at combination—of ground plot and grouping—is there as to the palace, and the gardens of St. James's-park. An alteration of the present arrangement about the end of the Mall and Palace forecourt, was, it is true, projected, as our readers remember. One object at that time, corresponding with the general one we are putting before our readers, rather than any way proposed for attaining the object, deserves to be borne in recollection.

The improvements in the parks under the present régime, so far as they now demand notice,

\* See p. 383, ante, “Opposition to Sanitary Progress: the Proposed Parks.”



have been confined to the increase of garden space, the cleansing of the ornamental waters, and similar measures of very great value, but not exactly what we have just now in view in the question of art. The broad, well-gravelled walks, intersecting the sward from gate to gate, are a boon to the pedestrian as compared with the former pathways; yet, be it observed, the alteration in the Green-park is considerable; the rural appearance is considerably impaired, and there is no substitute. Let the reader fancy new roads driven straight through the beautiful and uncultured parts of Hampstead before named; and a fair idea will be given of the operation of the interfering hand—albeit not of the relative extent of the changes. Now, in such cases—since good dry walks must be made, and occasionally without the fringe of flowers and garden ground which partly supplies the place of art in St. James's park,—why not have introduced in the course of that unvarying line, a few simple pedestals with statues and flower-vases, a few breaks and recesses for the seats; and (were there any spot of sudden declivity) a flight of steps, with wings, terrace, and balustrades. The interposition of some such objects, or even others which are of a more simple kind, supplies a new effect in place of that which had to be sacrificed. These trifling suggestions for such a case, however, form a very small section of the contrivances through which architecture and art in general might be made to contribute to the beauty of our parks, as of our squares and other open spaces. The main object which we have in view, is to get the principle of the combination as a point recognised where any public works are needed, in which either architecture or landscape gardening, separately, may be supposed to come into play. We would undertake to prove that such a combination for effect, between nature and art, has been sought for in all periods possessed of any perception of the beautiful, and any acquaintance with the laws of taste. It was this perception which made the Athenian architect plant his temple on the Acropolis, and the dramatic artist and poet speak under the canopy of heaven, amid the ambient beauty of the sea and the hill-side. It was this that produced the intermixture of horticulture with art, which was seen alike in the houses of the Romans, the Moors, and the modern Italians, and still exists with the Chinese. In the Italian villas, the garden at the back, even where confined in space, was made a very beautiful feature. A piece of architecture generally terminated the site, and formed a background to the scene; and sculpture and fountains were there introduced as in other parts. The main feature referred to was the grotto,—of which, the term, but not the art, survives. Where the ground rose at the back, advantage was taken of the fact to introduce a succession of terraces and steps; like those which we have suggested in somewhat similar circumstances. In our own Elizabethan architecture, the balustraded terrace with its flight of steps, mingled with the foliage of the garden for the united result. At Haddon-hall, in Derbyshire, there is an excellent example of this combination: and it forms an annual subject for some exhibited drawing. Again, at Hampton-court, the combination of forms of architectural art with trees and flowers, is illustrated; as it is also in the approach bounded by sculpture at intervals, and overshadowed with cedars, to the portico of the villa at Chiswick. Pleasing effects, such as may illustrate the argument, can be observed in Kew-gardens. Chambers, who laid out the grounds there, has left appended to his "Treatise," several designs of the character which would be appropriate for the London parks—were buildings, rather than minor objects of architectural art, now especially in question.

Not only by the introduction of terraces, at various levels, but by all the other architectural and sculptural aids to landscape gardening, you increase both the variety or interest, and the apparent space. But, the aim should be—in conjunction with the addition of garden-ground to our open spaces—to introduce always a number of architectural and sculptural accessories. Lodges, piers and gates, and boundary walling, railing, and lamp-posts; statues and

fountains; terraces and steps; balustrades and vases; sunk gardens, grottoes, and alcoves; screens and porticos; colonnades and arcades; bridges and boat-houses, are some of the subjects on which architectural art could be exercised with the greatest advantage. Many such accessories—as for example, the sunk gardens and terraces—could be introduced with the greatest advantage as features in our squares. Ground such as there is in the squares, should be more frequently devoted to the public. Lakes, streams, and waterfalls could be made to do more towards the beautiful than at present. Witness for what does exist, the very ambitious design of the emissary of the Bayswater sewer, and that of the railing and boundary of the opposite or lower end of the Serpentine. What became of the columns of the Quadrant? Might they not have been set up in the manner of the Italian colonnades, roofed with trellis-work and twining plants? What has become of the fragments of many an old portico or gateway, as well worthy of being put together in Hyde-park, as Inigo Jones's gate was by Lord Burlington at Chiswick. The columns of the portico at Wanstead House, one of the most admired of the works of Colin Campbell, were last heard of in a dealer's yard.

Amongst the improvements required in Hyde-park, is that of a road from north to south, near Kensington-gardens. This want has often been spoken of. We notice it here to say, that the very provision of the communication—which would probably be by sunk way, as suggested in these pages—might be made to serve some of the objects we have been considering.

Also, it may be hoped that the intended memorial of the Exhibition of 1851 will be erected on the site of the building of that year; and that architecture and sculpture will both contribute through such agency, to the object here treated of. The present Chief Commissioner is fully disposed to go with us, and only needs support from without.

The comments on the original plan, and those on the present appearance of the bridge in St. James's-park, help to show that our subject is very far from being now understood. It was a view of the matter that we could comprehend, that any interruption to the prospect was not desirable; but not so that which, on the one hand, ignored the fact that a bridge of stone or iron may be made a beautiful thing in itself, and grouping advantageously with the natural objects, and on the other hand, presumed that a "light suspension-bridge" would be as it were, without any effect whatever. The opinion of some of the authors of designs in the Government Offices competition, as to the chains of Hungerford-bridge, and the prospect along the river, may be referred to. Giving up the idea of a carriage-way, a foot-bridge *à fleur d'eau* might have answered all objects of convenience and taste. The present bridge interrupts the prospect no doubt more than those who sanctioned it anticipated. But in itself, the design does not deserve the condemnation which some writers have thought themselves justified in expressing.

Criticism of the kind just referred to, however, makes us more than ever anxious as to the future of our art—dependent so largely upon public appreciation. What is to be hoped for, if the first care of the judge is to convict, and on conclusions not drawn from thought, or reason, or experience, but by mere *ipse dixit* of a man destitute of art-education and taste, possessing no claim to the office of the teacher, and forming his opinions solely from the detection of a resemblance to some supposed vulgar or familiar form or object. Architecture requires now for public teachers, men at least generous and capable of being warmed to admiration. Wanting these, the art will never grow to great elevation in England. The self-constituted critic—really nothing feeling, and nothing knowing—will continue to pick out supposed defects, or award unqualified censure,—for, the man who finds fault, in art, half the world thinks *must* have superior knowledge. He is rather just the reverse of this. The public contract the habit of assuming to judge; and to censure—where the fault lies in their own physical and mental unsusceptibility. The very

profession is infected by the disease, and the extreme classicist or the mediævalist is incapable of appreciating architecture in the abstract, and the beauty which may exist in any style. We believe that architecture is capable of conducting more than it has lately done, to real public enjoyment and good. The British people must be made to feel that the art has a character and purpose beyond that which it has lately reached; and we know no means so valuable for such an office as we contemplate for it, and other ends, as the means which we have suggested.

#### BRITISH ARCHEOLOGICAL ASSOCIATION.

It appears to have been reserved for modern antiquaries to discover that the pursuit of their art may be rendered pleasant and enjoyable, and that their labours may be smoothed and enlivened by what is so agreeable to the physical organization of the student, and, consequently, so strengthening to his mental powers—a change from the narrow confines of the study to the free, broad, blooming country itself. Your antiquary is ceasing to be the isolated and eccentric individual whom the satirist has regarded as fair game for his wit. He has acquired a turn for social gatherings and journeys made in company with his fellows; and although he is as deep in his literary researches as his predecessors, he does not stop there, but, like General Suwarrow, "goes and sees." "*Coup d'œil*," said the old Russian veteran, "*coup d'œil* for me!" The antiquary echoes the sentiment; and, composed as the British Archeological Association is, there is no occasion for wonder that they make successful assaults on ancient castles (happily without the loss of a single life), and gain instant admission into old abbeys without asking the permission of my Lord Abbot, whom God assuile!

This was the case last week in the "east country," of which Norwich is the principal city, and which was selected by the British Archeological Association as the scene of their fourteenth annual congress. Some of the remains the Association inspected are almost entirely engulfed by the inexorable past; but the archeologist may say to Time triumphantly,—

"You may break, you may shatter the vase as you will,  
But the scent of the roses will cling to it still."

The old associations still hang on the trembling walls, the old traditions still cling about the mouldering stones; but we must proceed to details, although we ought to add that some of the objects of interest visited by the Association are in a better state of preservation, and others in a state of restoration,—a circumstance which appears to excite a feeling of dissatisfaction in some minds having a strong antiquarian bias.

Armed with large and resplendent pieces of paste-board, the members of the Association assembled, on the afternoon of Monday, 24<sup>th</sup> ult. at the by no means attractive, so far as the exterior is concerned, Guildhall of Norwich. The council chamber, in which they assembled, to some extent redeems the building, and the fine stained roof and grim old portraits on the walls accorded well with the character of the meeting. The Earl of Albemarle, who had been selected as president for the year, was introduced to the meeting by Mr. Pettigrew, and the proceedings commenced with the interchange of a few compliments, and Camden his lordship and that gentleman, and some expressions of welcome from Sir John Bolten, on the part of the Norfolk Archeological Association.

Mr. Pettigrew next read a valuable paper "On the Antiquities of Norwich and Norfolk." The paper stated that Norfolk is 210 miles in circumference, and comprises thirty-three hundreds and divisions, containing 700 parishes. The name Norfolk literally implies Northern-folk, as Suffolk implies Southern-folk. The county of Norfolk, with Suffolk and a portion of Cambridge, comprised the Roman province of the Iceni, and the Saxon kingdom of East Angles. In form the county is that of a wedge, and Camden derives the name Iceni from *Icen*, a wedge. From Tacitus several particulars may be learned of the ancient history of the county. After having submitted to the Romans, when Ostorius induced the people to revolt, and the wars with the Romans, under Boadicea, who died by poison in the year 59, were the result. Several Roman stations may be traced in Norfolk, with Roman coins and other antiquities of the period. Alfred, when he subdued the Danes, erected, in the words of an ancient chronicler, "a fortress both of brick and stone," and the same monarch also improved very greatly the fortifications of Norwich. The castle, therefore, bears a very early date. Coins of Alfred, Athelstan, Edward the Martyr, and Ethelred, have been found in the locality. On the occasion of the massacre of the Danes, which was revenged by Sweyn, Norwich was burnt and wasted, and a new city rose on the ruins of the old buildings.



In 1010 the Danes made a settlement in the locality, and re-fortified the castle, the original foundation of which is ascribed to Gargantius, son of Bellinus. It was surrounded by three ditches, in consequence of which there have been numerous disputes as to the original character of the building, some declaring it to be British, others Saxon, and a third class of disputants affirming it to be Roman. The charters of the City of Norwich date from the time of Henry I. The original charter was renewed by Stephen, who first gave the place a corporation. Charters were also granted by Richard I. John, Henry III. and Henry IV. The last sovereign made Norwich a county of itself, and vested the government of the city in a mayor, aldermen, two sheriffs, a recorder, a steward, and a common council, consisting of sixty members. The walls of the ancient city of Norwich were three miles in circumference, and were flanked by a great number of towers. Portions of the walls still remain. There were also twelve gates, and within the city six bridges. Merchant's marks are very common in Norwich, and were employed chiefly from 1300 to 1600. The monasteries and convents of Norfolk and Norwich were, in early times, very numerous; and several ancient guilds, established for the advancement of trade, charity, and religion, flourished in the district for a very long period. Adverting to the cathedral, Mr. Pettigrew said,—The Norwich Cathedral Priory may be characterised as mostly Norman, having a long nave, choir with semi-circular east end, transept, dormitory, refectory, and strangers' hall. A small portion only will be found to belong to the Early English period, and in this style will be found a portion of the strangers' hall. The chapter-house, cloisters, and cellar belong to the Decorated period, and examples of the Perpendicular may be seen in portions of the choir, which also characterise a part of the cloisters. The first stone of the Cathedral Church of the Holy Trinity was laid by Hubert de Longva, in 1096, and sixty monks were therein placed, and in the adjoining priory in 1101. They were Benedictines. Mr. H. Harrod thinks the church of Hubert to have been built on the site of a more ancient one, dedicated also to the Holy Trinity. It appears, however, that the Cathedral Church was commonly called Christ Church; and early references are made to it by Tiffed and by the chronicler Ingulphus, in a date of 1076. It is curious that whilst in the walls of the upper classes it is styled Church of the Holy Trinity, in those of a more humble description it is called Christ Church. Of these peculiarities, Mr. Harrod has cited several examples. Mr. Spindler has proved Hubert to have been an Englishman—not a Norman, as generally supposed; that he was born at Syleham, in the Hundred of Hoxne, in Suffolk; and that the appendage "de Longva," almost universally attached to his name, must have been a nickname given to him by his detractors after his death. The cathedral was damaged by fire as early as 1171; a century later, it was again ravaged by that element. Two decisive entrances to the interior—the upper, St. Ethelbert's Gate, built by the citizens after the fire of 1272; the lower, known as Erpingham Gate. Upon this the word "Pena" has been often recorded to be inscribed, and the building of the gate is said to have been erected as a penance or punishment to Sir Thomas Erpingham for his supposed Lollardy. This word, however, is not "Pena," but "Yenk," and means "Think"; it is, in short, Sir Thomas's motto, "Beare." With regard to the time of erection, Mr. Harrod justly infers that it must have been subsequent to 1411, as the arms of his two wives occur upon it, and he did not marry Joan Clouston until this year. His first wife was Joan Clouston. He died in 1428, and together with his wives, was interred in the north aisle of the choir, but his tomb has been destroyed. The fine stone vaulting in the nave is attributed to Bishop Ighat, whose rebuts frequently occurs. He was bishop between 1426 and 1436. The bosses of the roof and the cloister formerly presented an immense number of historical figures, amounting according to Philip Brown to 325 in number, minutely carved. The series extended in subjects from the Creation to the Last Day of Judgment. The painting and gilding of these have been entirely removed by a coating of stone-coloured wash with which it was disfigured in 1806. A circular opening between the west door and screen, of considerable size, has often been a subject of conjecture and discussion. Mr. Harrod has, I think, added the interesting reference to an extract from "Watson's History of English Poetry" (vol. i. page 240), taken from Landse's Topographical Dictionary. It runs thus:—"I myself, to a child once saw in Peter's Church, at London, a feast of Whitsonale, as the old saying down of the Holy Ghost was set forth by a white pigeon that was let to fly out of a hole that is yet to be seen in the midst of the roof of the choir, and by a long cascade of descending water, which place about

to the ground, was swung up and down at such length that it reached at one sweep almost to the west gate of the church, and almost to the quiver stairs of the same, breathing out over the whole church and compass a most pleasant perfume of such sweet things as burned therein." Mr. Harrod has observed, in a very casual peep at the Sacrist R-ills at Norwich, charges made for letting a man down from the roof habited as an angel, with a censer to cense the rood. This feat, he observes, could have been accomplished from the hole I have alluded to. The tower, Early Norman, must be esteemed for its grandeur and beauty. The lofty perpendicular spire is also entitled to our admiration. A painted wooden reredos, formerly in the cathedral, has been removed, and fixed in a corner of the vestry. It belongs to the fourteenth century, and represents, in five compartments, the Scourging, Bearing of the Cross, Crucifixion, Resurrection, and Ascension. Its recovery is due to Mr. Harrod, who found it doing duty as a table for sorting paper in the treasury, turned bottom upwards. The stalls (subsellia), or misericords, as they are vulgarly and ridiculously called, are numerous in the Cathedral. Mr. Harrod enumerates the subjects carved upon 62 of these—the number required for prior, sub-prior, and 60 monks. They present personifications of saints, emblems, heraldic bearings, and many are very grotesque. Several exhibit much skill, and their execution has been assigned to about 1450. In a Norman niche, above the north door exteriorly is a sculptured figure of a bishop, which has been conjectured to be a representation of Bishop Herbert, the founder. The cloister has received much and deserved attention from Mr. Harrod, who is warm in his expressions as to the magnificence of its area, the beauty and variety of its architecture, and its mellowed roof. It is not, however, the Norman cloister, and whether that was of stone or wood is unknown. The present cloister dates no earlier than the close of the 13th century, and may be considered as belonging to the beginning of the decorated period. The fire of 1272 destroyed the original cloister. There is a particular account of the building of the present cloister by William of Worcester, preserved in Christ Church College, Cambridge, and the date given to the commencement of the work is fixed at 1297, and by Lord Ralph Walpole, then Bishop of Norwich. This is confirmed by a stone in the west part of the cloister with this inscription:—"The Lord Ralph Walpole, Bishop of Norwich, placed me here." The incipit and design is in like manner distinguished on another stone by an inscription—"Richard Upphale placed me." The door into the cathedral is remarkable, and has been figured by Carter and Britton. Mr. Pettigrew also made some interesting observations on the rood screens and mural paintings of the district. The examples, he said, are yet numerous, although many fine specimens have disappeared. Painted rood screens were more numerous in Norfolk than, perhaps, all other counties together. Three hundred at least, according to a calculation made by the Rev. Richard Platt, must have been destroyed by the Puritans, and the subsequent neglect of them. They are fine illustrations of medieval art, and good examples are remaining at Worstead, Barton, Marsham, Aylsham, and Ranworth, of the latter of which Mr. Hart has given us a plate. He has also exhibited the peculiarities in the colours employed, and the means of applying them. Of a very extended and remarkable example at the church of St. Andrew, at North Burlingham, the Rev. John Gennep has given an account, and attempted a synoptic table to facilitate description and aid in comparison. No one has, however, yet followed so excellent an example.—The subjects on this screen are most diversified, and present representations of various saints, virtues, powers, angels, archangels, &c. The table embraces the subjects on the screens at Barton, Instead, Ranworth, Lasingham, and North Burlingham. The Rev. James Lee Warner has also described a screen at Houghton. Mural paintings have been discovered in several Norfolk churches. Mr. Dawson Turner has a fine collection of drawings of them, thirteen relating to Catfield Church, of the time of Edward III. He is of opinion that a large proportion, and possibly the whole of the Norfolk parochial churches, had their interior walls originally ornamented with paintings, and that these were the work of different hands, from the saints, &c., on the rood loft screens, and were also very inferior in point of execution. The Very Rev. F. C. Hase has minutely described the subjects—The Wheel of Fortune, the Tree of the Seven Deadly Sins, the Contrary Virtues; Baptism; Confirmation; Penance; Confession; Matrimony; Extreme Unction; Crucifixion; the Samaritan Woman and the Saviour at the Well of Jacob; St. Luke; Nathan and David. These are not to be considered as altogether perfect, but sufficiently so to enable the subject to be discerned. A curious mural painting was found at Wimbotsham Church, representing St. Christopher with the Infant Saviour; and at Cretswight

Church there are the Deadly Sins, St. Michael, St. Christopher, Christ before Pilate, the Confession, &c.; at Ditchingham Church, the Resurrection, and other subjects, as at Wymondham. At Drayton, Mr. Husebeth has described St. Christopher, St. George, Christ appearing to Mary Magdalen, Consecration of the Crosses, the Saviour. At Cavston, the Rev. James Bulwer has made out St. Agnes; whilst at Brook, the Rev. William Beal has found the Creed written in eleven small narrow parallel columns, extending the whole width of the church, in colours, red and black. This was on the western wall, so that clearly at the time in which it was executed—probably about the commencement of the Reformation—it could not have been the practice of worshippers in reciting the Creed to turn towards the east. The commandments were also written on the wall, and there is also a curious representation of an alewife similar to the one engraved by us from a Miserere in Ludlow Church. The ale represented as being drawn from the barrel is personified by flame. An angel above is issuing also forth in fire, and flames are beneath the woodwork on which the barrel rests. In the course of his paper (which was ordered to be printed in the Transactions of the Association) Mr. Pettigrew referred, in terms of high praise, to the labours of the Norfolk and Norwich Archaeological Society, who, he said, had brought to light a great number of interesting facts.

The paper concluded, the company left the Guildhall and proceeded to the castle. Here Mr. Fitch, who acted as cicerone, pointed out that the building was placed on the top of a lofty hill, neither circular nor quadrangular in shape, but paraking a little of the character of each of these forms, and that it was surrounded by at least one large ditch, which is still apparent and completely round it. The original shire-house (we are quoting Mr. Fitch's observations) stood in nearly a straight line with the bridge in the centre of a space now used as a cattle-market; and the buildings in the ditch surrounding it, and lying to the east of it, were in the castle fee or bailey, under the jurisdiction of the constable of the castle, where stood the church of St. Martin in the Bailey, and where doubtless eighty unoccupied houses mentioned in Domesday were situated. All the castle buildings are now gone, except the great tower. The restoration of this may have been desirable, and absolutely necessary, but the antiquary can no longer discover the features of his old friend under the mask of Bath-stone with which it is now encased. The keep or great tower remarkably resembled in arrangement that of Castle Rising, which, although smaller, is much more complete. At Rising, for instance, the main wall dividing the tower into two parts is nearly entire. Here all trace of it is gone, except on the internal face of the west wall which has the outline of it shown by modern brickwork. The great tower stands on the south-west part of the hill, the stairs of entrance on the eastern side being nearly opposite the way over the bridge. It is nearly square, being 92 feet by 96 feet, the greater length being from east to west. The walls were, as is so frequently the case, composed of stone from the nearest quarries; those of Northampton stone faced with Caen stone. The surface of the lower compartments on the west and south sides of the exterior was of faced flints, a facing which has entirely disappeared in the restoration. As it was not a mode of construction of the Norman period, this peculiarity may fairly be put down to repairs two or three centuries later. The basement story of the tower was plain, and was formerly of common faced flint work, worked with small loops at regular intervals, and above that to the battlements were a series of arcades of Norman arches of a plain and effective character. In the lower arcade, on the south side, a corbel stone, in the form of a lion's head, set very oddly in the third panel, puzzled many; but an inspection of the interior of the wall would have enlightened them—it is the vent of a drain from a small arched niche in the interior. The north side differs from the others in having six buttresses instead of five, and Mr. Woodward conjectures, with all probability, as a large hall occupied great part of that side of the tower, that it was original and intended to give additional strength to the wall. Both Norwich and Rising are entered through an eastern tower, by a stair-case extending the whole of the eastern side. At Rising this is nearly in its original state; here, unfortunately, many repairs and alterations have taken place, and what is now presented to view is but an approximation to what it must originally have been. In one respect the modern aspect differs entirely from the ancient, for whether the stair was at any part broken by a drawbridge, or only stopped once or twice by a portcullis, there can be no reasonable doubt that at the south side of the entrance, or, as it is been named, Bigod's tower, an arch of entrance originally existed. There was no entrance into the great tower from below. The space below, although vaulted over, has no apparent opening to it, and therein entirely agrees with Castle Rising. On



the west, or main wall of the great tower, is a double doorway, spanned by an arch of great size. This arch is all excised work, and, consequently, very early. It is supported by four columns. Upon the first capital on the left side is a huntsman, with a sword by his side, and a horn in his right hand; while with his left he holds a dog in slips, which appears to be attacking an ox. On the second capital is another huntsman, spearing a wild boar of unusual size: his left side is covered by a long-pointed shield. The subjects on the capitals on the right side are doubtful. This arch, as at Rising, undoubtedly opened into a large and lofty hall, having a range of windows on the north side, some above and by the side of Bigod's tower in the east wall, and some traces of which may still be seen in the western wall. The main wall of which I have spoken as dividing the great tower in the centre, ran east and west, and the other half of the floor, of which the great hall occupied the north side, had on the south two equally lofty apartments, the west one being the larger of the two, and having the convenience of a large fireplace. The corresponding room at Castle Rising has been conjectured to be an armory. It may have been the original intention here; but it will be remembered that from the time of Henry III. if not before, the exclusive use of this great room was the confinement of prisoners; and therefore here, as at Newcastle and other places, this large room may have been appropriated to a better sort of prisoners, who deserved better fare than the rest, and had the means of paying for it. The third room has been the source of much speculation. It recedes, at its south-east corner, an arch, opening in a recess, in which are various rude carvings, wherein one antiquary sees the altar-piece of a chapel, another only the efforts of some half-demented prisoner. The entrance to this oratory is through an arch, supported by two columns, the capitals of which are ornamented, that on the left by an elegant figure on the front; at the angles are pelicans vulnifying their breasts. The capital on the right is exceedingly interesting: its style is peculiarly Norman. Among the carvings in this oratory is the representation of the Trinity. The Father is seated, having a crown on his head; and the infant Jesus on his right arm; and below the child, a dove. The second, St. Catherine crowned, having a small wheel in her right hand; the next is St. Christopher, a gigantic figure, much defaced, having a staff in his right hand, and the infant Jesus on his left shoulder. These figures appear to have been coloured: they bespeak an early period. Beneath these on the left, is another sculpture, in better style. The walls and loops of the oratory are covered with armorial bearings, devices, and parts of figures. I call your attention to the fact of the existence of galleries in the thickness of the walls, which were originally entered by the smaller of the two doors in the entrance tower. This opened by a short passage into a new staircase, at the north-east angle; and from that staircase, at a little elevation above, the gallery on the north wall commenced. This runs along, passing in front of the great windows of the hall, at a considerable elevation above the floor of it, and passing the remarkable flue at the north-west angle, called the kitchen, communicated with a western gallery, which, running behind the paintings of the hall, communicated with a remarkable series of cloisters. The south-west angle also has a new staircase, as at the north-east, and answering a similar purpose of communicating between this floor and the dungeons below, and with the platform and upper gallery of the tower above. At the present time, the communication between the western gallery and the southern one is stopped. The eastern passage, starting from nearly the same point as the northern one from the north-east staircase, runs first past the windows lighting the hall, and then those lighting the corner room, in which the oratory stands, when turning into the south wall, and running into the upper windows of this room, it descends several steps, and reaches the level of the windows of the gallery and armory on the south, bending at one point to pass the flue of the great fireplace of that apartment. Mr. Harrod has pointed out that the great tower was covered in by two roofs, of high pitch, ranging east and west, the external wall, to the depth of the two upper arcades, masking them. The marks of them will be easily seen on the inside of the west wall.

From the castle, into the dreary regions of which, as Mr. Fitch observed, the incursions of crinoline were never contemplated—the Association proceeded to the fine old church of St. Peter, Mancroft. The restorations of this church, which is one of the finest in Norwich, have been frequently noticed in the *Builder*, and they appeared to receive the approval of the visitors. In the evening a *conversazione* was held at the Guildhall, at which Sir Fortunatus Dwarries read a paper on the privileges of sanctuary formerly accorded to churches, and their precincts, monasteries, and other religious houses. We may, perhaps, advert to this paper, which displayed great erudition and

research, on a future occasion. Mr. J. R. Planché also contributed a paper on "Raoul de Gael, first Earl of Norfolk."

On Tuesday morning the first object visited was St. Andrew's Hall, a portion of the old convent of the Black Friars. Here Mr. Pettigrew read a paper which stated that the great hall of St. Andrew, now used for civic, festive, and charitable purposes, originally constituted the nave of the conventual building, and that which is known as the Dutch Church formed the choir. The periods embraced by the building were the Decorated and the Perpendicular, and it did not, therefore, lay claim to a very early date. The settlement of the monastic orders in Norwich must be ascribed to the thirteenth century. The Black Friars, or Dominicans, took the lead in 1226: about the same time probably the Grey Friars or Franciscans appeared: the White Friars or Carmelites were thirty years later; and the Augustine Friars as late as 1290. Limits were in 1259 assigned to the Black Friars of Norwich and those of Norwich, the former being assigned the county of Norfolk to begin in. In 1262 the Black Friars of Norwich received a bull from Pope Urban, directing them to preach a crusade for the relief of the Holy Land, at that time overrun by the Tartars. To such an extent was the obtaining of money carried, that by a bull the friars had given to them the power to absolve all who for laying violent hands on religious persons, and for burning churches and other religious places, &c. were under sentence of excommunication, provided they made satisfaction for the damages done. The Black Friars first established themselves on the other side of the river (Wensum), and, in 1307, they removed, having obtained the houses of a smaller penitential order, the Friars of the Sack. The first house, according to Kirkpatrick, was on the north side of Colegate, near the chapel of St. John the Baptist, over the water. This church they possessed about the year 1250, and there made their monastery, extending it from time to time. In 1307 they obtained the house of the Friars de Penitentiis, and the former habitation was then called the "Oldle Trees Yerde." The second house was obtained upon the suppression of the Friars de Penitentiis by a charter of Edward II. by which they held their habitation by the payment of *capite* of 14d. yearly. In 1332 a complaint was made on the part of the citizens to Edward III. accusing the friars of having, to the detriment of the city, obtained divers lands and tenements without inquiry. An inquiry was ordered into the matter, but in 1345 a friar was granted by Edward III. confirming to the friars all their new acquisitions. In the midst of the large extent of land they thus acquired they built their church, on the north side their cloisters, and next the river side their malthouse and brewhouse. The ground on the south side of their church they kept void, to serve for a large preaching yard. The church was extraordinarily large, as seen in such buildings was coveted by rich persons, who gave large sums of money for the favour. The earlier part of the building belongs to the Decorated period, including the beautiful portion known as Becket's Chapel. A finer church is conjectured to have been built between 1345 and 1350, but the convent was burnt down in 1413 or 1414, and the monks were obliged to return to their former house, from which, in 1440, another fire expelled them. They then returned to St. Andrew's parish. The church was rebuilt in a more sumptuous manner in the reign of Henry VI. The convent received benefactions from others not desiring burial in the church, and the friars parcelled out their own merits to such as should be inclined to purchase them by letters of confraternity. The number of the credulity in such matters appears to have been considerable. The friars carried the instruments about with them, a blank being left for the inscription of the recipient's name. The records of the monastery showed that, in 1470, Isabella, the Queen of Edward IV. together with her daughters and suite, lodged therein. The Black Friars of Norwich was one of the few conventual establishments which escaped demolition in the reign of Henry VIII.; but in 1540 a charter was granted by that king, by which, in compliance with a request by the citizens, the whole house and site of the convent were granted to them upon payment of 81l. and 9s. sterling per annum into the Court of Augmentations of the Revenues of the Crown. Possession of the land was not obtained, however, without a further payment of 152l. four years afterwards. In the hall, the citizens, with the mayor, aldermen, &c. were wont to assemble on public days to hear mass, but in the first year of Edward VI. the proceeding was put down by Act of Parliament. The Dutch obtained a grant of the chapel in 1625, and it has continued from that time. Other parts of the conventual building were appropriated as granaries and places of deposit for various purposes. The friars do not seem to have been beloved by the citizens, although the houses of friars and other monasteries served frequently as places of refuge for felons. The

preaching-ground became a garden, and then a burial-place for those dying of the plague, a portion of it continuing to be used for preaching.

St. Andrew's Church was next visited, and copies of some of the brasses, which attracted considerable attention, were taken. The notice of the company was also directed particularly to the east window.

About one o'clock the party assembled in St. Luke's chapel, at the cathedral. Here Mr. H. H. Burnell gave some historical details of the sacred edifice, through which he afterwards conducted his auditory, adding further and more explanations in Jesus chapel, and at other points. With reference to the orifice in the roof above the nave, from which it was alleged that a man had been let down to represent a flying angel, Mr. Burnell argued, that, from the small space, a man could not be swung safely, so that the experiment could have been tried only once. The Rev. J. Butler observed that in Roman Catholic churches at Madrid and Lisbon he had seen several such beams and beams thrown down from the roofs over the congregations. Mr. Burnell said he had seen a shaver of bay leaves from holes in the ceiling of a church in Rome. Mr. Planché expressed his opinion that the fact ought not to be ignored, that there was a record of a man having been paid to descend from the roof as an angel. It might have been done at a particular ceremony, and not repeated.

From the cathedral the mission was easy to the episcopal palace. This building has an unpretending exterior, but possesses some interesting historical associations. It is situated on the north side of the meadows, and is reputed to have been erected by Bishop Selmo, in 1318, upon the site of a former building. It suffered greatly during the civil wars, and the great hall was converted into a meeting-house during that fatal period, while other portions were left off. In 1556 a great hall, which is 110 feet long and 60 feet wide, was demolished, but at the Restoration Bishop Rye rebuilt the building at considerable expense. The lapse of time has now rendered several alterations of a minor character necessary in several of the apartments, which were rather a dingy air. The Bishop, not being in Norwich, was not able to receive his visitors in person. The kitchen of the palace, by the way, is a large and lofty apartment, with a vaulted roof, and appears to possess great ordinary capabilities.

Leaving the palace, which possesses some pleasant gardens, the company proceeded to inspect some of the numerous churches of the city. The intense heat of the weather greatly reduced, however, the numbers of the party. Those who had sufficient persistency to press on were greatly struck with the exterior of the church of St. Michael, at Coslany, which is a beautiful specimen of flintwork, inlaid with other material.

The remainder of the afternoon was occupied with an excursion to the Roman remains at Caistor. Copies of a letter by Mr. Hudson Gurney, contending that Norwich, and not Caistor, was the site of the Venta Icenorum, were distributed; and Mr. Fitch read a historical and descriptive paper, in which he favoured Mr. Gurney's conclusion. Mr. Vere Irving (Scotland) appeared to incline to a contrary opinion. Sir John Boleau described the results of some excavations which had been made on the spot, and which had led to the discovery of a square building, the floor of which seemed to have been carefully beaten down. No conclusion could be arrived at with reference to the object to which this building was applied.

In the evening another *conversazione* was held at Norwich, when the most question of the Venta Icenorum was again discussed, and adjourned. A paper by the Rev. Dr. Husbuth (R.C.), on sacramental fonts in Norfolk, followed. The term "sacramental fonts" was used to designate those baptismal fonts in old churches which are ornamented with sculptures of the seven sacraments of the Roman Catholic church. A few remarks were offered, in a paper by the Rev. Beale Poste, on some representations of minstrels in early painted glass, formerly in St. James's Church, Norwich; and Mr. W. H. B. A. (paleographer) described a short examination he had made of the records in the possession of the Durham Chapter of Norwich Cathedral, and stated that he had received permission to make a further investigation.

Early on Wednesday morning, the members entered on a tedious railway journey—48 miles in three hours—to King's Lynn, where they arrived shortly after ten o'clock. The party proceeded direct to the Red Mount, and afterwards to the Grey Friars Tower. The Red Mount is also called the Lady's Chapel, and consists of an octagonal wall of red brick, with a cruciform chapel inside, measuring, from east to west, 17ft. 7in. by 14ft. from north to south, and 18ft. in height. The Grey Friars Tower is a fine hexagonal steeple, which serves as a landmark to vessels entering the harbour. Shortly after eleven o'clock, a meeting was held in the assembly room of the venerable and beautiful town-hall, where the corporation



regal, seals, charters, and other ancient documents were arranged for inspection. Observations were offered on these charters by Mr. W. H. Black, who possesses an extraordinary power of reading old monkish Latin, Norman French, &c. Mr. Planché made some remarks on the sword presented to have been taken by King John from his side and presented to the corporation of Lynn. As regarded the hilt of the sword, Mr. Planché considered the decoration was of the date of Henry VIII.: the blade was not of the time of that monarch, and was probably an older one. With reference to King John's cup (now at the Manchester Exhibition of Art Treasures), Mr. Planché said he must throw over the idea that it was presented to the town by John, because the whole of the decoration and the enamelled figures were certainly as late as the early part of Edward III. It was possibly an out cup. Mr. Alan Swatman, who had communicated a good deal of local information on other subjects, said he hoped shortly to be able to establish Mr. Planché's theory by a perusal of the records of the Trinity Guild, to whom the cup belonged. A "ducking stool for scolds," which was exhibited in the room, attracted some attention; and the party next proceeded to St. Margaret's church, a noble pile, capable of seating from 1,000 to 2,000 persons. The interior has rather a metropolitan than a provincial appearance, and in its general features presents some resemblance to St. Martin's-in-the-Fields, although, of course, the details are widely different. At the end of the chancel is a fine circular window with tracery transverse mullions. At the west end of the church are two lofty towers, from which a wide bird's-eye view can be obtained of the town and harbour, and of the vast tract of waste land, now in course of reclamation—the Wash of former times, in which King John is said to have met with dire misfortunes. There is said to have been originally a lofty tower or lantern at the intersection of the cross aisles, and a high spire also surmounted one of the western towers, which display different styles of architecture. St. Margaret's church and priory were founded by Herbert, Bishop of Norwich, in the reign of William I. and dedicated to St. Mary Magdalen, St. Margaret, and all the maiden saints.

After luncheon at the Globe Hotel, the party proceeded in omnibuses to Castle Rising. When they had nearly reached the Castle, the Rev. James Bulwer, who was on the top of one of the omnibuses, was unfortunately thrown to the ground as the vehicle passed sharply round a corner. The rev. gentleman sustained a simple fracture of the right leg, and his system was also a good deal shaken. He was removed at once to Lynn, and Mr. Pettigrew followed him in a carriage, kindly placed at his disposal by Sir W. Folkes, bart. The melancholy accident produced much gloom and depression, but after a short interval Mr. Black read a paper prepared by Mr. Pettigrew, "On the Castle." Sir Fortunatus Dwaris being called to the chair, that is to say, to a central standing position among the little knot who assembled on the green sward, between the ruins and the mound by which they are surrounded. The writer described the Castle, in his paper, as an illustration of Norman castrametation. Various possessions which the Conqueror had bestowed on his half-brother Odo, the Bishop of Bayeux, were, upon Odo's rebellion against William Rufus, transferred to William d'Albini, to whose son the erection of Castle Rising was attributed. William d'Albini married Adeliza, the widow of Henry I. and then assumed the title of Earl of Arundel, but was afterwards created the Earl of Arundel. The castle passed to the four co-heirs of Earl de Warenne and Surrey, in 1243; and, upon the partition of estates, the castle and manor of Rising were assigned to Roger de Montault in right of his wife Cecily, whence it descended to Robert de Montault, of whom, and his contests with the corporation of Lynn, Mr. Swatman had given a very interesting account in Harrod's "Castles and Convents of Norfolk." By various hands it passed through the family of the Dukes of Norfolk, and now belonged to the Hon. Mary Howard, widow of Lieut.-Colonel Fulke Greville Howard, second son of the first Viscount Templeton. Mr. Harrod suspected, from the similarity of the arrangements in the castles of Norwich and Rising, that the same architect designed both of them. At one time Castle Rising was in the possession of "the she-wolf of France," Isabella, queen-dowager of England, and here, by some chroniclers and historians, her imprisonment and death had been fixed; but Mr. Swatman questioned the accuracy of these opinions. Indeed, it had been pretty clearly proved that her death took place at Hertford. The castle itself was built within a circular space, enclosed by a bank and a ditch, and additions had been made to the castle, east and west, under a similar arrangement of earthworks. The parts now remaining consisted of the great tower or keep, the chapel, the gate-house, and the walls of the constables' lodgings, a brick building of the time of Henry VI.

The destruction of the castle apartments was rapid, for, in the 22nd Edward IV., "there was never a house in the castle able to keep out the rain-water, wind, or snow;" and in the 19th Henry VII. various parts were under reparation. With the destruction of walls, the whole area of circular work was buried several feet deep, and Colonel Howard removed many thousands of loads to level the earth about the great tower to the base line of the building. Some discussion followed on the residence of Queen Isabella at the castle; and it appeared to be the general opinion that it was a kind of honorary imprisonment. Mr. Alan Swatman having afforded some curious information with reference to a law-suit between Lord Montault and the town-people of Lynn, in which the latter were cast in 3,000*l.* damages—an immense sum in old times,—Mr. C. E. Davis added a few further *viduo* comments on the castle, and also referred to the remains of an ancient church in the mound, probably of the date of the eleventh century, and of the same form as the small churches in Ireland. The company then passed up the broad staircase of the castle, and gazed down into the great hall, once, no doubt, a scene of pomp and splendour. *Quantum mutatus!* There were fowls "clucking" on the floor, and straw was littered down in one niche for some domestic animal. There was, however, scarcely any time allowed for moralizing on the scene, as the time for returning to Lynn had nearly arrived. A hurried visit was, nevertheless, paid to the parish church, which has been lately restored in the highest possible style, and elicited warm expressions of admiration. Lynn Station was reached at last, and, after three hours' tedious jolting, the combined efforts of the East Anglian and Norfolk Railways deposited the tired excursionists at Norwich.

With highly commendable perseverance and energy, the party re-assembled at nine o'clock in the council-chamber at the Guildhall, where a paper was read on the gates of Norwich, interesting specimens of the protective erections of the thirteenth and fourteenth centuries. The city suffered so much by the rebellion of the barons in the time of John, that it became necessary to surround it with a wall, gates, bulwarks, &c. for its defence. The building of the walls was commenced in 1294, and hence the castle, as a defence of the city, became neglected. A murage, or wall-tax, was levied, and continued for three years, when a patent was passed for another; and various imposts of a similar character were made, until the walls were finished. Eleven of the gates or houses were standing in 1786; but the twelfth had been removed when Bloufield wrote in 1741. Eight of the gates were taken down in 1792, and the remainder in 1808. The Boom, Conisford-gate, Ber-street-gate, Brazen Door, St. Stephen's-gate, St. Giles's-gate, St. Benedict's-gate, Heigham-gate, St. Martin's-gate, St. Augustine's-gate, Magdalen-gate, and Pockthorpe-gate, were fortified places, capable of accommodating several men, and were built evidently for defence, having been of substantial masonry, embattled and crenellated, with machicolations to enable those within to assail whoever might attempt to enter. They had also portcullises, bars, &c. At St. Martin's-gate there were ten battlements; St. Augustine's, twelve; Magdalen, thirteen; Pockthorpe, ten; Conisford, fourteen; Ber-street, twenty-seven; St. Stephen's, thirty-eight; St. Giles's, fifteen; St. Benedict's, sixteen; and Heigham, four. The Boom towers constituted points of control over vessels going up the river. A paper was next read by Mr. Ewing, "On a Carving from Sir John Fastolf's House at Norwich." Mr. W. H. Black made a verbal report of his examination of the documents belonging to the corporation of King's Lynn; and notes having been compared of the day's proceedings, the Association adjourned till Thursday morning.

Here, for the present, we must pause. We have arrived at a central point in the proceedings of the Association, and must defer our notice of the excursions to Great Yarmouth, West Norfolk, and Ely.

#### SOME DESCRIPTION OF THE MECHANICAL SCAFFOLDING USED AT THE NEW PALACE AT WESTMINSTER.\*

WE now come to the Clock Tower, and I have in the outset to remark, that the principal peculiarity of the scaffolding used in this and in the Victoria Tower is, that it rose with the building, being, if I may so express it, self-raising and self-adjusting. The other great peculiarity of all the tower scaffolds consisted in the employment of steam power to hoist the steam-engine being placed at the top, and close to its work, instead of at the bottom, where it would generally be fixed. In the erection of the Clock Tower the stone and other materials were raised *inside* from the ground to the summit, so that, there being no appearance externally of a scaffold or other contrivances, the tower seemed to grow, as it were, by some inherent

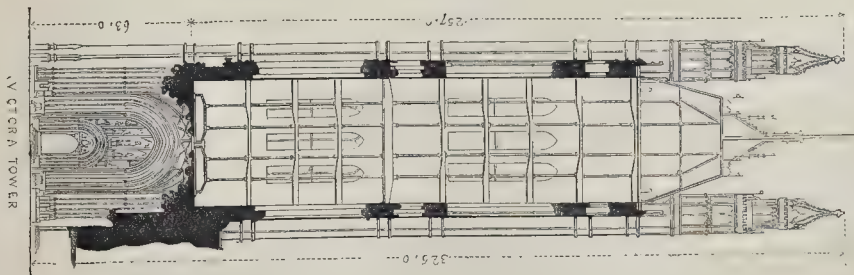
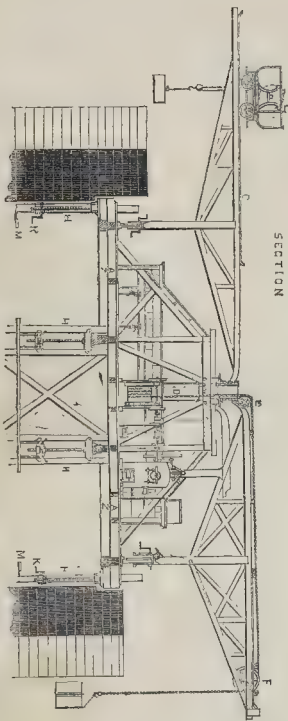
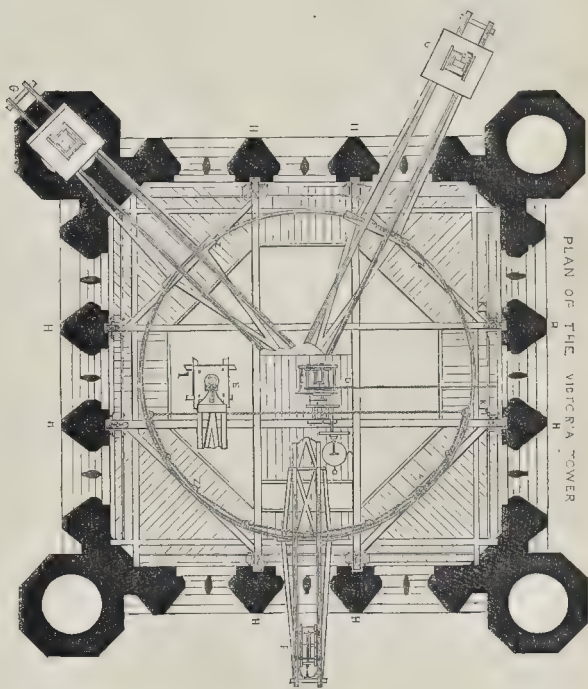
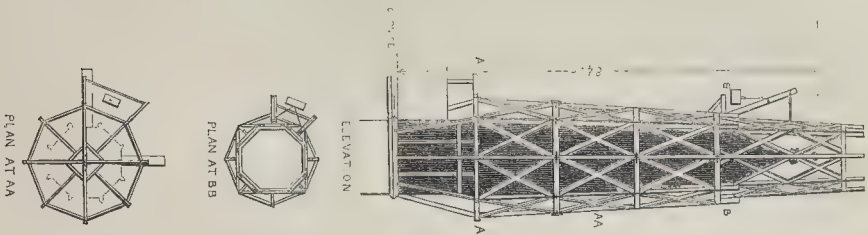
vital power. There is in the interior a shaft, intended to be eventually occupied by the staircase and a lift-machine: advantage was taken of this shaft to raise all the materials by machinery.

Main bearing beams, framed of whole timbers 2 feet 3 inches deep, and 14 inches wide, bolted and strengthened, were stretched across the tower walls from east to west, and on them rails were laid turned up at each extremity. These bearers had points of support on six blocks of cast iron with screws, which could be raised at will, as hereafter described. A secondary frame of timber or traveller moved on the rails just mentioned from east to west, and on this second frame other rails were laid, on which the small travelling crab or jenny, used to set the stone, &c. moved. Means were provided to enable the man in charge of the crab to move it and himself along, with or without a load, by turning a windlass, having a bevel wheel in connection with the axes of the traveller, and similar means enabled him to move also the main traveller mentioned above. Thus every facility was provided for the worked stone being moved to any part of the tower walls *in suspension*, and without handling. A further contrivance was necessary, however, to raise it from the ground. To effect this, two strong queen-trusses, the length of the shaft or chamber above alluded to, and separated as much as its width would allow, were suspended to the main bearers by means of wrought-iron bolts 1½ inch in diameter, passing through the uprights and sill-pieces of the trusses, and through broad cast-iron plates under the sills: 4-inch plank was then laid on the same sill-pieces, having in it an aperture sufficiently large to allow the stone, &c. raised to pass through. Immediately over this aperture, and resting on the head of the trusses, was the pulley F, over which the chain tackling used passed to the ground. A portable steam-engine (Gough's patent) of 2½-horse power was fixed on this platform at one extremity, with a driving band from its fly-wheel to a large drum, H, about 3 feet 6 inches in diameter, at the other side of the platform; and round this drum the chain was coiled and uncoiled. From this description it will be readily seen that worked stone, bricks, sand, water, iron, &c. were raised from the ground up to and through the aperture in the platform. In the case of a block of stone, a small travelling truck, moving on rails laid on each side of the aperture, was run under the block, which would be deposited on it to allow the chain to be free for another descent: meanwhile, the crab first described, having been brought over the block by means of the arrangements already detailed, would lift it and deposit it on the bed prepared for it on the tower walls. The small truck would be run back to allow another stone to be raised through the aperture in the engine platform as before, and the setting would proceed with such rapidity that, to keep one setter at constant work at the top, forty men were constantly preparing stone at the bottom. It has been found in practice that, with an ordinary framed scaffold and traveller, one man will require twenty-five masons preparing stone to keep him supplied, while, as just stated, by the use of the steam-engine, one man required only to prepare stone for him. What would be the proportion when the old system of poles and ropes is used I have not ascertained, but it would probably prove as far behind the framed scaffold with the traveller worked by hand, as that is behind the powers of a scaffold where steam power is made use of. It only remains to point out the very simple means of raising the whole of this platform, with its engine, crab, travelling tramways, &c. the weight of which altogether, without any materials upon it, was about sixteen tons.

The main bearers were long enough to bear from wall to wall. At the six points ordinary jack-screws were placed, with solid large blocks of iron at the top and bottom of each, through the latter of which the screw could pass. A nut or collar worked on the screw, having sockets to receive the ends of the iron bars used to screw it up or down, which were used in the same way as capstan bars. Now supposing the main bearers to be resting on the walls, as shown, the jack-screws, having their nuts screwed hard up to their heads, would be put in their places, the walls under these bearings being built up to their under sides. All six screws would then be worked simultaneously, and the whole arrangement, platform, engine, and all, would be raised up at once about 3½ feet, that being the length of the screws. The travellers being then three feet clear of the tower, three feet more of the work all round could be set, and then a fresh lift would take place; though it is obvious that by blocking up the main bearers from the walls, two or more lifts of three feet each could take place before setting the masonry was resumed, when such a course was found in some cases to be more convenient. In this way the whole of the stone work of the Clock Tower was raised and set, and when that was finished, the same power raised the iron frame-work, beams, and plates, of which the

\* Continued from page 491.





SCAFFOLDING OF THE VICTORIA TOWER, HOUSES OF PARLIAMENT.



upper part of the roofing is formed; but to fix which, the simple scaffold of poles and ropes, cleverly braced, which still exists, was used.

The cost of the scaffold, with the engine and machinery, may be roughly stated at about 700*l*. It raised about 30,000 cubic feet of stone, about 300 rods of brick-work, besides many tons of iron and other matters. It did all this so quickly and continuously, that there was no excuse for the workmen, either below or above, wasting time; whilst its manifest economy and precision of working need no further illustration. The dimensions of the Clock Tower are as follows:—

External dimensions on plan, average for the whole height, 10 square feet.	
Height to the cornice below the clock	160 ft.
Height thence to the top of the stone-work	51
Height of the metal roof containing the bell diameter	103
Total height	314 ft.

Before quitting the Clock Tower I may advert to the extraordinary reports a short time ago circulated, that it would be necessary to raise the great bell from the outside, by means of a special scaffolding, at the cost of several thousand pounds,—only to say, that of course the subject had not been overlooked as was charitably suggested, but that arrangement had been made from the commencement to enable a bell as large as was considered appropriate to be raised up the central shaft of the tower, and that at this moment all the appliances of tackling, crab, engine, &c. are prepared and waiting for the proper time to arrive, when the bell is to be raised to its permanent position in a single day.

#### VICTORIA TOWER.

At the Victoria Tower much the same principle of arrangement, as far as regards the position of the steam-engine and the rising frame-work of the whole, was made use of, though the much larger dimensions of the structure caused some important differences. The internal diameter of the tower is 51 feet, and over to over of the turret, 70 feet. In the first place, a strong trussed frame, over the whole area of the tower in plan, had to be constructed to carry all the machinery, and sufficiently stiff to bear being raised at once by the screw power without any rocking or straining, and consequent disturbance in the position of the apparatus upon it. (See diagram.) This framing consisted of small-bulked timbers, 51 feet long, and 14 in. in square (very many and specimens of timber). These beams or sole pieces, AAAA, crossed the area as shown, while similar pieces were placed all round close to the inside surface of the wall, diagonal braces at a h corner, ZZ, tied all together on plan, and the four beams crossing the centre of the tower were strongly trussed, both above and below, the latter being necessary to resist the upward strain on the centre shaft all three derrillers being possibly loaded at the same time. Thus the whole arrangement was thus rendered perfectly rigid and stiff, the experience of constant use for nine years has abundantly proved. A circular cast-iron rail was next laid on the framed platform, while part of the framing was covered with 23-inch plankings, and defended by a hand-rail for the safety of workmen; and on this at C the portable engine of six-horse power was placed, with its drum at D connected by gear-work with the driving wheel of the engine. As the lower part of the Victoria Tower which contains the royal entrance, is grounded over with stone at the height of about 63 feet on the ground, the materials for building the upper part could not be raised inside, as at the Clock Tower, and the mode adopted, as shown in the diagram, was the result. An under-trussed parallel framing or traveller was formed, moving round a hollow pivot in the centre of the tower E, and extending over and clear of the walls. The king-posts of the under trusses were in fact frayed timbers, or could be steel rods, bolted together and strengthened so as to be perfectly rigid as if in one piece. Each leg of these timbers had grooved wheels at the feet, which ran on the circular iron rail on the main platform first described, thus enabling the whole to rotate round the centre.

A pulley wheel, 4 feet in diameter, was attached to the frame at F, (G) at the outside of the tower walls, and a similar one was fixed over the orifice in the hollow centre pivot above referred to: over both of these the chain from the engine drum worked, and raised stone, bricks, &c. from the ground, which were then lowered either on the walls or on the plank platform in the angles, and the chain was set free for another descent. There was also a contrivance in the diagram, to convey the hoisting traveller, when required, with the engine drum, and to move it and the load round on the circular iron rail to any spot on the top of the tower that might be most convenient for depositing the material.

To set the stone so raised, there were two other radiating framings or travellers, GG, formed in like manner, and also moving round the centre by wheels running on the circular iron-rail on the main framing. These travellers were of such a length as to extend to the outside of the angle turrets, and they could each command overhead the feet of the tower, working at the same time with the setter to each. On their upper beams rails were placed, on which the crab engine passed to and fro. It will be evident that by this arrangement every portion of the tower walls could be reached, and the stone raised by the hoisting machinery set down in the place provided for it with the greatest nicety. To raise this huge platform, with its engine, radiating traveller, &c. weighing nearly fifty tons, the following means were adopted, which proved perfectly successful to the end of the works. At the points, H H H H, guide and bearing timbers were placed vertically, coupled together with bolt-holes at intervals. These were scarfed and braced together, in heights of 12 feet, as required, and screws very carefully made, 3½ inches in diameter and 6 feet long, with solid hard pieces to fit under and grip the timbers of the main platform, were placed between each pair of these guide-posts. By means of a bevel pinion wheel with a winch handle, K, working through a nut at its lower extremity, the large screws could be raised or lowered with ease and certainty, and with them the main platform, the ends of whose timbers rested, as will be seen, on the screw heads. This operation was carried on by lifts of 6 feet each, a man being placed at each screw on the platform, M (which being attached to the nut of the screw, rose as it rose), and all turning simultaneously, the whole mass was raised step by step, as required, on to and above the top of the tower parapet. It should be mentioned, that to provide against any serious accident, from disarrangement of the lifting screws, for instance slots or chases, 14 inches wide and 9 inches deep, were cut in the walls of the tower at the ends of each of the main beams: these were carefully built up in cement as the scaffolding rose, so that the next time any fall could occur would be during the act of screwing up, when of course there would be no materials on the platform to add to the weight, and any such fall, had it occurred, would have been too limited to cause any injury.

No such accident, however, occurred nor indeed has any happened to derange the machinery during the whole time that it has been in use.

The Victoria Tower scaffold has often had materials on it weighing fifty tons, which, added to its own weight, make eighty tons. The Clock Tower scaffold has frequently had to carry thirty tons of materials.

One very severe trial was experienced when the former tower was raised to the height of nearly 200 feet. The workmen, on leaving work, had omitted their usual custom of lashing one of the radiating travellers to prevent the wind by any chance moving them. A hurricane arose during the night and lasted the following day, and a violent gust setting upon the radiating truss moved them round on the circular rail, and blew them together with terrific violence, as may be supposed, when it is mentioned that they were 50 feet in length. The report of the blow was heard at a great distance, and those engaged on the work fully anticipated that the framing must have been shattered; but when they ventured up to examine, as soon as the wind abated, it was most satisfactorily found that no trace of damage was to be seen, the whole arrangement having proved amply stiff and strong to resist the concussion.

Some calculations as to the cost of labour—the costs for the engine, repairs, &c. to the machinery, may be interesting. They refer to the Victoria Tower, and were the result of observations on a portion of it 60 feet in height.

In this portion there are about 18,800 cubic feet of worked stone set, and about fifty-seven rods of brick-work. Assuming the relative cost of the labour on the stone to be two-thirds of the whole, and that on the brickwork one-third, which supposition is probably nearly correct, it was found that wages and repairs cost, in all, 55*l*. 2*s*. for the period during which the engine worked—equal to forty weeks—and taking two-thirds of this amount, or 49*l*. 6*s*. as applicable to the stone, gives a cost of 6*d*. per foot cube, and one-third as applicable to the brickwork, or 7*d*.—a cost per rod of 2*s*. 7*d*.

This amount does not of course include the first cost of the engine, which has sufficed, not for a height of 60 feet or so, but for nearly the whole tower. And when I state that the cost of this engine and travelling, with the hoisting apparatus, &c. was only about 1,800*l*. and that there are about 117,000 cubic feet of stone, 1,350 rods of brickwork, and 1,120 tons of iron in the tower, it will be seen that it is of no

\* The steam-engine was not used for the first 85 feet from the ground both of the Victoria and the Clock Towers.

moment at all so long as its use materially diminishes the time of labour of the workmen.

The engine required the services of an engineer and an assistant: it was generally worked half a day, or five hours, and consumed in that time about 3 cwt. of coal. It was calculated to raise 4 tons.

The time a stone (the weight immaterial) was in transit from the ground to the top of the tower, when 250 feet high, was 3½ minutes, including its deposit on the platforms above and detachment from the tackling.

All delays and hindrances included, the average number of lifts actually made per hour was ten, though in some cases as many as twelve and thirteen were accomplished.

The box used to contain materials other than stone, such as bricks, mortar, lime, sand, cement, &c. was so contrived that the bottom opened in two halves on releasing a lever handle at the side, so that the contents were at once deposited where required without the delay of emptying by hand.

The foregoing arrangements were continued with complete success in the erection of the Victoria Tower until a height of about 6 feet above the parapet was reached, which was as high as it was considered desirable to raise the engine and platforms. The pinnacles, 85 feet high from the cornice, were constructed by means of a cradling scaffold. The hoisting traveller remained as before, raising all the materials and depositing them on the platform at AA. The setting travellers were shortened so as to move round their pivot within the pinnacles, and they were then able to set all the stonework of the parapet between the pinnacles; and they still remain to assist in moving the ironwork, &c. that is yet required for the roof.

The cradling scaffold for the pinnacles deserves some attention, being very daring in its construction, since it is entirely detached from and independent of the main work.

Its whole support is derived from a framed skeleton platform at AA, the timbers of which pass through the apertures in the eight sides of the pinnacles. (Diagram No. 10.) They are carefully bolted together, and upheld at each angle by rating struts bearing upon the weathering of the string cornice of the tower. On this framework the braced scaffold was raised, being added to as required up to BB, with horizontal ties at each stage. The plan of the upper one BB shows the mode in which these horizontal courses were braced so as to leave the centre perfectly free for the pinnacle to rise within it.

Up to BB all the stone was raised within the pinnacles itself, being run into it on trucks at the level AA, and raised by tackling passing over a pulley at the top of the scaffold and connected with a crab-engine at the base. Above the level BB, however, the pinnacle gathered in, and the stone was consequently raised outside from the platform AA by an ordinary tackle and fall: from this point upwards the scaffold is continued high above the cap stone of the turrets, in order eventually to fix the crowns, with the exception of which and of the roof the shell of the entire tower is now completed. This upper part of the pinnacle scaffold is formed with ordinary poles and ropes, but still keeping intact the principle that it is self-supporting, and in no way resting on or touching the work. The scaffold poles look, indeed, little larger than wires from below; but this is hardly a matter for wonder when it is remembered that from the base of the tower to the top of the vane is no less than 325 feet.

In concluding these memoranda, which I feel sensible are crude and imperfect, I can only hope that I may have directed the attention of my hearers to a subject which I am confident must be considered of interest to all architects, and very important to those who may be engaged in works of a more than ordinarily extensive and arduous kind.

I think they may also help to prove that architects are equal, when called upon, to devise and carry out works of construction requiring originality and daring as successfully as the members of the kindred profession of engineers. And I trust you will agree with me that I am justified in so characterising the works I have been describing.

#### GRAYS THURLOCK, ESSEX.

In digging the chalk for lime, at Mr. Mensin's, Grays Thurlock, the men occasionally light upon ancient urns and bones, dispersed rather curiously. The receptacle is formed somewhat in this way: A shaft, from 3 to 5 feet in diameter, is sunk down from 30 to 40 feet from the surface, and at the bottom of it branch out, at equal distances apart, three chambers, about 16 feet long, 8 feet wide, and 8 feet high, double cubes, in fact, either purposely or not. In these urns, broken pottery, and bones (of animals), appear to have been placed, and then each was thrown down the shaft, and closed up the ends of



the apartments. Some of the pottery is unquestionably Roman, with impressed medallions and architectural ornaments, while other portions of it may be earlier. The marks of fire are evident on some, and one vase, we hear, has been quite recently found there, containing a carbonaceous residuum. The least extravagant supposition is, that the shafts were sunk, and the chambers formed, in early time, simply to obtain chalk, and that being formed, they were used as receptacles. An objector might urge that the chalk could have been obtained with less trouble, and would give other reasons to show at any rate that further examination and inquiry are desirable.

The universal flatness of Essex is so generally believed in, that the noble water-view from Mr. Meason's house, with Gravesend and Rosherville on the other side to the left, comes something like a surprise: the river seen from this point has a lake-like aspect, which increases the beauty of the scene.

Chalk lime is much less used for brickwork than was at one time the case, but for internal work the demand is still great; and a very considerable portion of that demand is supplied from Grays Thurrock. There is a manufactory of whitening in the cutting as a natural accompaniment, whitening being prepared, as most readers will remember, by grinding chalk under a runner, then washing it to remove impurities, and, lastly, drying it in lumps. America, where chalk is not easily to be had, and the love of whiteness is strong, is a good customer to Grays Thurrock.

Bricks were formerly made here in large quantities; and some have said that the term "gray stocks," in its original application, meant stocks from Grays. De Foe, the great novelist, who of all writers made fiction read the most like truth, was a brick and pantle maker here. Up to this time, the latter half of the seventeenth century, tiles had been imported from Holland. In Little Thurrock there are some chambers in the chalk which are called "Canobella's Gold Mines;" but De Foe did not find in his chalk anything similar, and became bankrupt, though he ultimately satisfied all to whom he was indebted. Some ornamental moulded bricks of Italian character and superior make, have been found in the neighbourhood, and preserved.

The church at Grays is of old foundation, a Norman door on the north side of the nave, at the west end, remains in its original condition. Two arched recesses on the north side of the chancel, used as ambries or credence-tables, have semi circular heads; and the chancel arch, too, and the corresponding arch to the nave beyond the transept, are both of the same character, but have been sadly messed in the restoration which was made here a few years ago. The north transept (in the tower) has Early English openings, and would be very effective if an ugly gallery now in it were removed. The chancel screen, of oak, remains. Externally the stonework has been replaced with Portland cement! It is a very good specimen by the way of the material, much better than can be made sure of at the present time, and the forms are creditably kept; nevertheless, as we need scarcely say, the result is very un-satisfactory and disappointing.

About three years ago a Medieval tile pavement was found just outside the churchyard, and being taken up carefully, now forms the flooring of the Vestry-room: the tiles are plain, but present several combinations. They seem to be much more durable than the modern tiles laid in the chancel, which have changed colour sadly.

There were formerly eight bells here; but, if we are rightly informed, when the old tower fell some 150 years ago, a provident churchwarden sold six of them to a neighbouring parish, where they may be heard, so that there are only two now at Grays,—the largest and the smallest of the family, who agree but ill in the absence of their connections. An old helmet, hanging in the church, a brass or too, and a pisciole of early date, would each afford a text for a dissertation to those who had the wit to preach upon them.

The church at Stifford, St. Mary's, not far from Grays, has several points of interest. The south chapel is Early English, with a triplet, while all the prominent features of the church itself are Decorated. The windows of the latter, including some with sumptuous heads, are particularly good. Repair and careful re-erecting are much needed here, and might be made to produce a charming structure. Above all things, however, let them avoid Portland cement: better a thousand times have the old work done, simply removing causes of injury, and applying with careful hands such support as may be absolutely needed. There are two or three brasses and incised stones, of considerable interest, in this church, including amongst the former, one to Ralph Percheval, circa 1375, "quondam rectoris istius ecclesie," with a shield of the fifteenth century, representing a priest in a shroud, open at top, with the hands supporting a heart inscribed "R. R.," a rare specimen. The indentations

of a scroll round the head and an inscription at the foot of it remain. Amongst the stones is one in memory of a De Tilberry, with an inscription in old French. There is a good piece of fourteenth century woodwork, too, part of the chancel screen: the font is Early English, on five columns: much of the stonework still shows remains of coloured decoration under the whitewash, and the iron ring on the robing-room door, at the west end of the nave, is an elegant piece of workmanship. South Ockendon, and several other churches round about, well deserve a visit, but we must find another morning when the sun shines, and time can be spared, to look at them.

## THE POOR BOYS AND GIRLS OF LONDON.

CHRIST'S HOSPITAL.

I HAVE been greatly interested in the paper published in your last number (the *Builder* for the 29th ult.) appealing to the common sense of the people of this vast capital on behalf of its destitute children, and repeating some most interesting facts of the last days of the excellent young King Edward VI. My sympathies have been often and deeply awakened on behalf of the class for which your article pleads, and which states facts which every statesman worthy the name, and every Christian whose faith is of any real value to himself or to the community, should study, until the means of permanent relief to these young and helpless creatures have been found and adopted.

The young monarch of England, in the sixteenth century, exhibited his talents for public business in the midst of the pitiless attacks of a life-destroying disease; and showed his matured wisdom on the verge of the close of a life of sixteen years, in a manner which might tinge with shame the cheeks of many rulers and their prime ministers that have lived beyond sixty. He was about to leave his earthly kingdom, and he distinguished and dignified his departure by an act of mercy to the suffering and neglected children of his metropolis. He made an immediate provision for their rescue from destitution and vice. Alas! no other sovereign has followed this noble example; and the establishment of the admirable Edward himself has been diverted, by a gradual growth of selfishness, from its original application to the necessities of the poor, and is widely usurped by the classes far above that for whom it was so royally intended and endowed!

We should speak with abhorrence of such a succession of robberies, if they were committed in any other capital in the world. We should denounce the people, as we have done the American repudiators of their just debts, but we have no word of rebuke for the hereditary defrauders of the poor boys of London. The Royal Estate, settled on them by the Sixth, the last, and the best Edward, has passed into other families, and is employed to educate the sons of those, the majority of whom can well afford to pay for their instruction. If this abuse must, from its long existence, be perpetuated—if it has the unquestionable germ of an immortal nature in its constitution, then we must feel the utility of endeavouring to destroy it. It runs go on to the end of time, a perfected establishment,—redeemed, indeed, by a few eminent names from the charge of educational inefficiency; but altogether unavailable for the relief of the children whose best interests were contemplated by its youthful and kindly founder. So let it be, indeed, if another be now, and at once erected, for the class which the royal youth desired to rescue from ignorance and degradation; and let another Edward consecrate his name to England by a similar foundation—by another seminary for the destitute boyhood of London, which shall not be perverted. That now prospective Edward has large estates as Duke of Cornwall, and thence continually increasing wealth. By thus employing a comparatively small proportion of it, he would secure his future reign from many anxieties, which it will never be in the power of any other coercive means. Men will not be frightened into permanent good behaviour; they must be *trained* in it—and they cannot be so in the gaulets and dens of this vast Babylon. If rigorous measures be not now used for the infusion of a right spirit into the rising race of the poor, in fifteen or twenty years from this period, the sovereign statesman of England, whoever they may then be, will have an increased difficulty in preventing outbreak and insurrection. If no attachment to the throne is systematically taught—and on a religious basis—to the myriads which will continue to congregate in London, those myriads will seek to overthrow it in their blind contempt of an authority which insures to them individually no social blessing, no refuge from misery in childhood, no instruction or counsel to their youth. I do not lose sight of the excellent things which are done by private charity, but these are not equal to meet the exigencies of the case, and, unless a State provision is made for destitute childhood, actual and real evils to the State will arise from the deficiency.

I now turn to the condition of the little girls of this vast city, who, in so many hundreds of families of the poor, are sent to gain their living by beggary: what is to be done for them? for parish and union workhouses do not seem to meet their case. I would venture to propose similar establishments in every district of London, for the rescue of these unhappy creatures, exposed to all the miseries of hunger, cold, and nakedness, and the manifold temptations superinduced by the ordinary necessities of our common nature. In numberless instances they are sent out by sick or widowed mothers, or elder sisters, to entreat alms. The most benevolent know not what to do between the fear of encouraging a dissolute mother, or an idle son, in thus destroying the moral feelings of her children, and the fear that by their refusal shall increase real distress, and induce desperation.

There are some, indeed, who profess never to give alms to street beggars; but, for my own part, I could never understand the humanity which resisted every plea for relief, let the appearance of the supplicant, or their tale of misery, be what it might. If there were a refuge for destitute children in every district in which they would be instructed *usefully*, and brought up *honestly*, I believe the cost of our prisons would be materially diminished, and the expense of convict ships an item much less onerous in our national expenditure. The *Princess Royal* is about to leave us for another land, in which she will, no doubt, have an opportunity of contrasting the means of relief for the indigent with those of her own country. A Christian lady tourist\* and her husband, some years since received high gratification from the sight of the children of a Royal school for the poor entertained in the gardens of his Prussian Majesty. Such a sight in this country would be unique. Can we not nationally manifest our respect for the Prussian alliance by founding in Her Royal Highness's name a school for the destitute FEMALE CHILDREN of Westminster, in the neighbourhood of her Royal mother's palace, to be a perpetual memorial of the interest, devoted and affectionate, which the people take in Her Royal Highness's happiness? Would not the Dean and Chapter contribute of Westminster Abbey wealth to such an object, and thus rescue their locality from the appearance of that embryo vice and that squalid wretchedness in the infant denizens of the ancient city, which disgraces in all eyes their stately cathedral? The contribution of 2s. only per annum, from one million of persons in London, would raise 10,000*l.* a year. This income, at a sacrifice felt by few or none of those in circumstances to contribute to it, would provide decent maintenance, religious education, and useful training to hundreds of human beings, who must otherwise grow up polluted and debased, condemned to vice and penury here, and in peril of interminable misery hereafter. S. E. M.

## THE MARYLEBONE FREE LIBRARY.

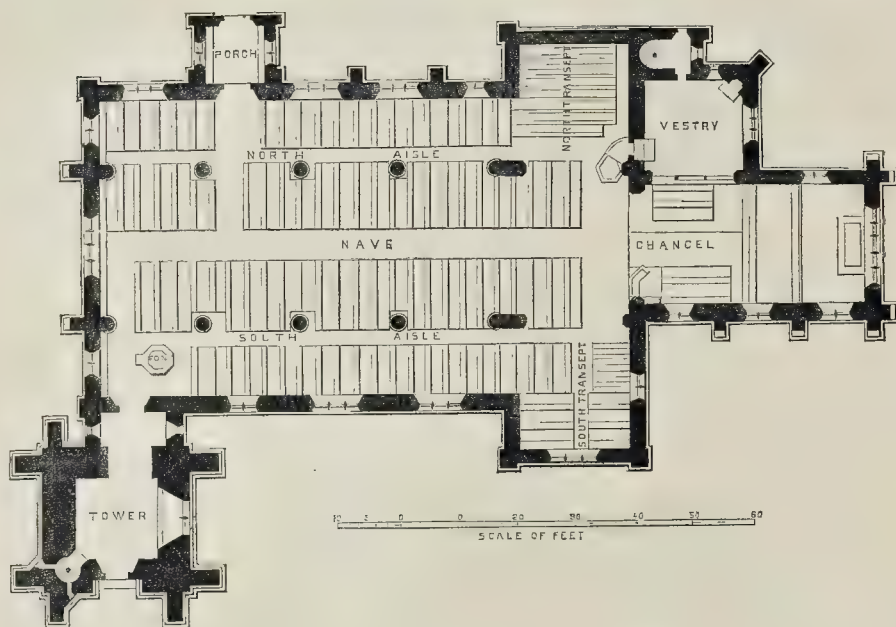
THIS unfortunate library was, I believe, closed in July last, not so much to the disgrace of the public, nor of those benevolent rich who supported it, and would, if judiciously canvassed, have no doubt helped still more, but from, I fear, mismanagement by the working committee and officers. I, in common with many others, took a great interest in its welfare, and, as far as my humble means went, assisted both by many books and also money. I have seen no account of any public meeting, preparatory to winding it up, or any financial statement, which the public were surely entitled to. It looks as if some jobbery were connected with the matter. The *Builder* seemed to take an interest in the library, and I therefore wrote to it for any particulars that it may be able to give as to the disposal of the books, &c.; or perhaps some of its readers can furnish this. CHAS. CHATTAN.

## THE LATE MR. TINKLER, ARCHITECT.

ORDINARY.—We have to deplore the loss of a member of the architectural profession, Mr. T. C. Tinkler, who, after a long and painful illness, has finished a young and struggling life. We knew him to be a most persevering, amiable, and honourable man; and at the moment he was getting into a good position, illness, which had been brought on by too much devotion to business, swallowed up his means; and, dying at last, he has left a young wife and two children, with nothing to depend upon but the skill of those who knew him. To assist in getting up a subscription in their behalf, several gentlemen have volunteered their assistance; and we shall be glad to receive the subscriptions of those who may wish to do so, others as they would be done by. Some of our readers will recollect his published sketches in *Rome*.

\* Mrs. Sherman, The Rev. Mr. Sherman, the husband of this lady, was the successor of the late Rev. Rowland Hill, of the Octagon Chapel, Blackheath. Their reception at the Prussian Court is described in the *Journal of Mrs. Sherman*, introduced into the memoir written by her husband.





PLAN OF ST. MARK'S CHURCH, WREXHAM.

DIRECT RAILWAY COMMUNICATION  
BETWEEN ENGLAND AND INDIA.

SOME time ago we published a letter addressed by Mr. W. H. Villiers Sankey to the Earl of Clarendon on this subject. Deplorable circumstances have since occurred to render more apparent the necessity for connecting our possessions in the East more closely with the seat of Government at home, and Mr. Sankey has forwarded another communication to the Secretary for Foreign Affairs, pointing out the advantages that would have resulted if the line were now in existence. "In a political point of view," he goes on to say, "such a line would be of the greatest importance, because it would diminish, as it were, the distance of India from our shores, and it would then be as easy for us to protect it as it is now to defend our West Indian and Canadian possessions. We need never fear its being invaded by sea; and, in the event of the railroad I propose being constructed, we could always get there at least as soon as our enemies, so that we should no longer have to fear either foreign aggression or internal commotion.

The commercial considerations of my proposed route, however, are worthy of the deepest study, and are of the highest importance. I need hardly remind your Lordship that Venice, with 30,000 sailors and 3,000 commercial ships, was in the zenith of her glory as long as she could profit by the Indian commerce through the Red Sea; and that Genoa enjoyed her reign of power and magnificence during the time that she traded with the East through the Black Sea and by Constantinople; that the Portuguese bore away the *prestige* and the solid advantages from both these republics so soon as she could monopolize that trade by the discovery of the passage round the Cape; and we ourselves commenced our era of commercial greatness by availing ourselves of that facilitated communication. Again, Russia, when she established the Tiflis route, raised Odessa, in a very few years, from a miserable fishing village to one of the most important commercial places in the south of Europe; and when, jealous of strangers trading by that route, she issued, in 1831, an imperial ukase, prohibiting the carriage of goods by foreigners between Odessa and Redout Kali, which communicated with Tiflis, where France had already established a consul, a *portion* of that commerce was then obliged to follow another route, and the consequent sudden increase of business at Trebizonde, in a remarkably short space of time, was quite surprising, for in 1832 exports from that place amounted to only 300,000*l.*, while in 1836 they had increased to 1,760,000*l.* Imports, in like manner, which in 1834 were only 440,000*l.*, in two years afterwards, viz. in 1836, amounted already to the sum of 1,720,000*l.*

Again, when the Red Sea route was re-established by England, the number of letters transmitted between England and our Indian empire was more than doubled by the shortening of the journey; for the year before the change, only 300,000 were despatched, while in the following year, owing to what is called the 'Overland Mail,' 680,842 letters were transmitted, and goods would go the same way were it not for the expense, and constant necessity of changing of conveyance, which is always alternating between land and water. Still gold and silver, and precious stones, follow the shorter route as it is, notwithstanding the disadvantages and inconveniences they have to contend with.

Should, however, the railroad I propose be executed, effecting a *thorough land communication all the way from England to India*, our commerce would increase to an extent unknown in the world's history, and nothing then could interfere with our East Indian dominions. If, however, the British Government does not establish that communication, other nations most assuredly will.

In 1814, when the East India Company's monopoly was in existence, the sum total of merchandise leaving the shores of Great Britain for the account of the company amounted to 1,874,000*l.*; when these privileges were partially removed, the exports increased to 3,495,300*l.*; and in 1841, when that monopoly was entirely taken away, they increased to 5,600,376*l.*

## IMPROVEMENT IN STREET LAMPS.

No one would suppose that there was much room for artistic effect in the mere painting of a street lamp-post, but if the column and framework of the lamp are painted red, and the post a bronze ground colour, they have a very handsome, but by no means gaudy appearance. Some painted in this manner may be seen at West-hill, Highgate.

Another variety would be to paint the base of the post black, the post itself stone colour, and the column a very pale blue. Almost anything would be better than the dirty white with which they are periodically daubed.

The effect of an improvement may be seen upon a small scale at West-hill: if extended generally throughout the metropolis, it would produce a more remarkable change for the better in the appearance of the streets than can at present be imagined, especially in straight thoroughfares like Portland-place, Pall-mall, and others. The increase in the cost would be very trifling, as all common pigments are much about the same price.

H. W. COOKE.

## ST. MARK'S CHURCH, WREXHAM.

In the middle of last year the works connected with the erection of this church were commenced.

The edifice is situated at the entrance of the town of Wrexham from the railway station, and it consists, as will be seen by the ground-plan, of a nave, 88 feet 6 inches long, by 23 feet 4 inches wide, and 65 feet to the ridge of the roof; north and south aisles, each 70 feet 6 inches long, by 11 feet 1 inch wide; north and south transepts, each 18 feet by 20 feet, and 50 feet to the ridge; and chancel, 37 feet long, by 19 feet 6 inches wide, and 52 feet to the ridge of roof.

On the north side of, and separated from the chancel by a wood screen, is the vestry, 15 feet by 16 feet, over which the organ-chamber is constructed.

The tower, which is 26 feet square at the base, and when complete, including the spire, will be upwards of 200 feet high, stands at the south-west angle of the nave. Through this, and a porch on the north side of the building, are the two principal entrances into the church.

All the walls are executed in coursed rubble of Cefn stone, with Bath stone dressings. The piers which support the nave arches are executed in Cefn stone, with moulded caps and bases.

The whole of the roofs are formed of Memel fir timber, open to the ridge, and plastered between the rafters, thus leaving all the timbers exposed to view, and are covered with Staffordshire tiles. The chancel roof is decorated with a lofty ornamental metal ridge. The timbers of the roof, and all the internal and external woodwork, is to be stained a light oak colour. The pulpit will be executed in Bath stone. The floors are to be laid with black and red Staffordshire tiles.

The style of the building throughout is the Decorated.

The works are progressing under the superintendence of the architect, Mr. R. Kyrke Penson, of Swansea, and at the close of next spring, or the commencement of the summer, the whole will be completed.

The contract was taken by Mr. Ebenezer Thomas, of Menai-bridge. The entire cost will be about 6,000*l.*, and the church will be capable of accommodating upwards of 800 persons.





ST. MARK'S CHURCH, WRENHAM.—MR. R. KIRKE PENSON, ARCHITECT.







## RAILROAD BRIDGES.

In public works, now so numerous in the metropolis, it is lamentable to see how little regard has been had to the architectural effect of those which are the most palpable and obtrusive, the *railway viaducts that traverse our causeways*. It is bad enough that imperious necessity demands for public convenience the foreclosure of all prospect, and the barring out of the breeze; but it is unnecessarily galling when an open causeway is intercepted by a frowning and deformed mass of *purposely misshapen* brickwork.

Railways are, in the initiative, mere matters of speculation: they are subscribed to by individuals anxious to make money; contracted for by professionals tolerably averse to do so; and carried out by officials, commonly not regardless of profits: therefore, behind the solidity of structure and durability of plant and material, no attention is devoted to them; nor does the appearance or effect of massive erections receive the smallest regard from any one concerned.

In extensive ranges of arches at high elevations, it is impossible to avoid some symmetry of form: the Roman aqueducts, of which three yet remain, extending across the Campagna, each exceeding 20 miles in length, and visible until the line is lost in a thread: even these, though erected for durability only, seem relieved to the eye in the sequence of arches: many portions of them are necessarily very lofty, and they show, like the long viaduct of the Southampton Railway, a grace in their very simplicity; for in the arch there is an inherent beauty that can only be marred by heaping together shapeless masses of superstructure.

However potent the Romans were in great public works, they were certainly far in arrears of modern engineers; but they did know how to erect magnificent buildings, and how to ornament their Eternal City; in what way to make the waters tributary to public use, in beautiful fountains, which flowed ceaselessly, and poured health and enjoyment upon the populace.

With all our advances in science, in the rapid application of the railroad system to the uses of a great population, it is strange that, in the construction of viaducts across the metropolitan causeways, no attention has been given to ornamentation, nor even to symmetrical finish.

In all quarters of the town and city they cross the main thoroughfares: in Camden-town alone there are four within pistol-shot range: they are the best erections of the kind extant; and yet how shapeless they are; how pleasing they might be!

The massiveness of a bridge does not preclude the idea of ornamentation: on the contrary, great extent of outline, if proportionately designed in a style of simplicity, would increase the effect. A candlestick, after the model of the York or Nelson Columns, would look mean: the pillar towering to 150 feet wears nobility in its extent. Much more so of a bridge: the simplicity of its parts, the boldness of its outlines, recommend simplicity, rather than traceries, or *alti* or *bassi relievi*. The like may be predicated of temples: an enormous building cumbered with sculptures, minute in comparison with its great proportions, looks after all like a Persian garment, which relies more upon the pattern embossed in gold than on the winning grace of flowing drapery.

It would appear, therefore, to be impossible (*as to exteriors*) to combine together great extent of dimension and grandeur of proportion with the unity of a striking outline, if *overloaded* with ornamentation.

All this has little to do with railway bridges; still it shows that little is required beyond a few columns, a cornice, a balustrade, a well-defined pilaster, to give effect and apparent lightness to the most massive and ponderous work; but in a city just now emerging from the slough of habitual utilitarianism in domestic architecture, it is deplorable that public works should be run through without any respect to finish or public decency.

Look at the Fenchurch-street Station, crossing Crutched-friars: there, just at the point of junction with John-street and Cooper's-row, where it diverges into triple thoroughfares, an arch (for it is an arch below) sustains a mass of dull shapeless wall, some 30 feet high: the arch springs from the *first-floor street line*—the superstructure towers over the houses and stores! True, there are on this side three blank representing windows, 20 feet high! There is a cornice supported by trusses, run like dentils along the line; but the fabric has the most oppressive aspect: on approaching nearer it is more of a tunnel, 36 feet wide by 120 feet long; and on the reverse side, towards John-street, a totally different style of structure presents itself, for here the *paries* is all of sheet-iron, and the ornamentation consists of lips in the same material, representing styles, which are bolted together, as are the sections of a steam-boiler, by clout-headed nails, in the fashion tinkers love.

In passing this Strait, it is impossible to forbear the remark, that the metropolitan magnates might

take a lesson from the railway directors, and strike a line of street from Fenchurch-street to the Mint; or else in a line from Cannon-street (across Trinity-square) towards the great Commercial-road. This would (by a short cut of only a quarter of a mile) give a direct easement from St. Paul's to the East.

But this is only a word by the way: we must speak of the bridge as we pass it: having gone over the simpler, and therefore less obvious castings of the northern metropolitan viaducts, it is not requisite to particularise beyond one more of these *chefs-d'œuvre*—it is the viaduct over the Marsh-road, Lambeth. Like its eastern relative, this "*Arc de Triomphe*" traverses the route askew, at an angle of twenty-five, or thereabouts. As all the world of London (even the *beau monde* of Belgravia on the Epsom day) passes that line, it is unnecessary to describe its obese proportions, much less so to give a daguerreotype sketch of its pictorial perfections. All know its aspect, and with the recollections of these two examples, we would appeal to civil engineers and the architects who co-operate with them in building for all time, whether it would not be more patriotic, more grateful to themselves, more conservative of the record of their exploits, and certainly more creditable to the country, if they were to expend only a little more labour in design upon works that obtrude themselves upon the noble, and the merchant, and the tradesman, and the stranger within the city bounds. If the example of high talent and taste elevates the genius of our generation, so also such specimens as are cited are standing memorials of Goths-in, and "our sin is ever before us." What has been done is irremediable, and stands as a record of bad taste to all posterity: what remains to be done, which will be on a larger scale, such as the intended railroad-bridge across the Thames at Chelsea, and the Fleet Valley viaduct, should have artistic attention.

## THE MARBLE PRODUCING DISTRICT IN ITALY.

In your No. 758, page 467, I observe an article calling the public attention to the "Carrara Marble Works," which are certainly an interesting subject to builders, sculptors, and architects. Whilst a well-merited eulogium is passed on the exertions of Mr. William Walton, for improving the marble trade in these districts, by the introduction of approved machinery, I cannot admit the correctness of the statement reflecting that Carrara and its vicinity have hitherto been unconscious of "the improvements of the age." I must also deny that the savings mills are little better than "a few huts," and although the appliances of 300 years ago, in the shape of machinery still exist, they are a curiosity very partially in use, as the generality of such mills possess excellent machinery, and from four to twelve frames, on the exact same principle as those now erecting by Mr. Walton, who has only enlarged upon models of minor capacity, introducing such innovations as all machinery admits of. At Carrara, and its vicinity, there are many other important modern sawing-mills, such as Fabrizio's, Berto Tognio, La Gora, Ponte Bugio, Sartese's, Binelli's, &c. &c. besides Mr. Walton's new sawing; and on the Massa side of the duchy, marble sawing-mills, with all the latest meliorations in machinery, are numerous and commonplace, whilst the "huts" I may say, are the *rara avis*. Hence, it is evident that the commencement of the era is not altogether attributable to the "monster mill of twenty-eight frames," neither can I admit your informant's statement, that the water-power in Modena, is applied in a "gimcrack and rude mode," as I am able to prove that some of the finest contrivances, both for mill and irrigation purposes, are to be seen in that duchy, and that the energy of many minds has brought them into effective existence, regardless both of party jealousies, and of State duties. With the exception of a handful of rich proprietors, there are but few quarry-owners; indeed, the populations of the Carrara and Massa districts are composed of a hard-working and industrious people, caring little or nothing whether the modern or the ancient appliances are the agency for facilitating their labour: they are, however, very intelligent and quick at appreciating the advantages of novel introductions, and equally so in doffing all things old, when the opportunity offers. The Italian Marble Company's extensive quarries are on the Massa side of the duchy, and that company is also erecting a sawing-mill (on the Triglio), which bids fair to compete in size, and in all the recent improvements, with any similar establishment. The building is 152 feet long, and 50 feet wide, constructed much as described by your correspondent, but adapted for a lesser number of frames. It has, however, the great advantage of full water power all the year round, which renders its twelve frames equivalent to sixteen. Most of the mills at Carrara and neighbourhood, are compelled to stop work partially, if not altogether, during the four summer months, for want of motive power. The

Italian Marble Company, I am informed, does not meet with any of the jealousy, or animosity, alluded to, either from the people of the country, or from its competing neighbours; and nothing has as yet impeded its new works from fast progressing towards completion; thanks, however, to the perseverance of all parties concerned, and to the facilities offered by the Government of Modena, which is determined to encourage every enterprise calculated to better the condition of the working classes. MARMO.

## THE VOICES OF OLD BUILDINGS.

It may be noticed that the staccato oak, the willow, and other varieties of trees, the bending reeds and waving corn, have each their peculiar and well-known voice. The sea also has its grand and varied sounds, and the rivers have many innumerable and musical notes, the memory of which is just now pleasant.

Those voices are not, however, confined to natural objects, for old buildings, the work of men's hands, have also their peculiar and, by many, well-remembered sounds. Few of our old churches are silent. In damp and ungenial weather, the continual dripping, the whistling winds through doors and windows, and the heavy flapping of tattered scutechons and such-like matters, sound like a melancholy complaint, which the ticking of the clock and the whir and bang of the hour striking, in some measure relieve. When, however, after dismal days, the sunshine pours in amongst the tombs and carved work, the sounds become more lively, and the superstitious might feel alarmed at the loud and mysterious cracks which may be heard in the organ-lofts, and amongst the ancient pews and rancors. It is pleasant at such times to hear the fluttering of some small bird from window to window, and the cooing of pigeons in the belfry. The variety of the tones of the old church clocks is noticeable, and it is often amusing to hear the desperate attempts of the machinery before the chimneys are struck. We like to listen to those musical notes from such towers as Chestow, spreading early in the morning over the picturesque country. The pealing organ and choirs of some of our cathedrals come sweetly upon the ear, heard over a river, and amongst the rocks and woods. Each church has its peculiar sounds and remarkable echoes, which seem to wander to the lofty roof and to remote places.

Old halls and mansions have also voices of their own, which come solemnly along galleries and staircases. When those places have fallen to ruin, they still have their characteristic voices, and we know of no sound which is more impressive than the slight but constant dropping noise of small fragments—a voice which seems eloquently to tell us of the frail and perishable nature of the work of man's hands.

## THE WELLINGTON MONUMENT COMPETITION.

THE late exhibition of models for the Wellington monument suggests some ideas whether such competitions are essential for the purpose required, and whether they could be conducted upon regulations less wearisome and expensive to artists.

As a sculptor, and not mixing or approving of competitions, I may say a few words. Half the sculptors in London have not competed, and among foreigners we have only a few who have forwarded designs—and why is this? From transactions in former competitions and distrust in the present. Mr. Cockerell writes upon the incompetency of the judges; and Mr. John Bell believes they decided exclusive of interest—but Mr. Cockerell applauds such competitions as glorious affairs, and liberal rewards. It is the sport of many for the gain of a few. There is not a design that would answer the purpose. I would suggest that artists should be invited to send sketches of designs, which any professional can do in a few hours, or to do the same at a place appointed, that it may be their own work, and then a number should be selected by competent judges, and a commission given with proportionate reward for a quarter size model. That would give a greater encouragement to art, and prevent much disappointment and expensive failures. We should not see such abortive models, making a scar to the profession, and bringing it into ridicule. It would prevent that trading spirit in art, speculating with the aid of gold with the abilities and brains of others—we should not see a man set up by a "coincidence queer," to the disparagement of his professional brethren. What I propose is a continental plan, and should wish to see it adopted in our competitions, giving the poor and able man a chance, and not to weary these out, that others of better means may gain the golden prize. "An Amateur" calls upon sculptors to speak out of the injustice of reward. I did conclude in my own mind that the simple design would claim attention; but simplicity of design should have grandeur of conception; it should not



fail in mechanical arrangement and twofold design. That which is not the high element of design they reward with the two first premiums; and they give a fourth premium to a model that it is difficult to discover any point of merit in; and 100*l.* to a model displaying the best figure modelling in the collection, and well deserving, though indifferent in design; and another (though they state that models that have exceeded dimensions have been excluded) to one that would not go under the arch, and is totally unfit in design, or with any merit in its conception, no more than many that could be selected from old prints. These are the awards that one says are decided from incompetence in judges; and another, "exclusive of interest." I think they have much the flavour of both. Let artists refrain from such competitions, unless conducted upon a better system, and not from whim and fancy. They may reckon upon the true knowledge of art they have gained, and direct their efforts accordingly, and they would not then feel aggrieved by the indifferent gaining the ultimate commission.

## MODELLING STICK.

## PROVINCIAL NEWS.

**Chatham.**—The new public hall, on the site of Chatham market, approaches completion. It is 60 feet long by 40 feet wide, and 25 feet high, with arched roof, and is ventilated from the roof, and illuminated from the centre by a "sun-light." There is a gallery on each side, running the entire length of the building, also one across the entrance, and a platform at the opposite extremity, with a concave recess. The galleries and roof are supported by iron pilasters. The hall is calculated to contain 850 persons seated, or about 1,100 standing, and has retiring rooms, library, &c. It will probably be opened for public purposes early in the ensuing October.

**Godalming.**—The foundation-stone of the new schools at Farncombe has been laid.

**Stourbridge.**—Tenders have been received for the erection of a block of offices in the High-street, Stourbridge, as follows:—

1. Freeman .....	£953
Parapet ornaments .....	15
2. Pagett .....	870
Parapet ornaments .....	10
3. Scott .....	887
Parapet ornaments .....	13

No. 2 includes laying on water from mains.

**Saltash.**—The preparations for the launching of the tube of the Saltash bridge, in connection with the Cornwall Railway, having been completed, it was floated into position on Tuesday last. Mr. Brunel floated the first tube for the Cornish side. Captain Claxton, who had charge of the floating of the Menai and Conway bridges, superintended everything afloat. 500 men were employed, and more than two miles of large hawsers used.

**Ellesmere.**—The contract for building the new lock-up house at Ellesmere has been taken by Messrs. Jenks and Cartwright, and will be commenced immediately. The new building will be erected at the entrance of the town from the Wrexham-road. It will front the east, and will be built of brick, with stone facings.

**Liverpool.**—The new landing-stage at Liverpool, for sea-going steamers, is now nearly completed. Sir William Cubitt was to inspect the stage preparatory to its being handed over to the corporation by the contractors.

**Preston.**—The chief stone of the new schools projected by the Wesleyan Methodist Association body in this town has been laid in "The Orchard." The site is a plot of land behind the present chapel, in Liverpool-road. It is intended, also, according to the *Guardian*, to rebuild the chapel; but as school accommodation is the more urgently required, it was determined to apply the funds already raised to the erection of buildings to be used as day and Sunday schools. The site of the schools occupies an area of 699 7-10 square yards, of which 369 yards are occupied by the school-house and premises, and the remainder by playgrounds. The buildings are to be constructed of brick, with stone dressings, and will comprise a school-room, 70 feet long, 30 feet wide, and 24 feet high, and class-rooms, 17 feet 6 inches long, and 14 feet wide, capable of accommodating 337 children. The style of architecture is Gothic, of the Early English period. The principal front will be 102 feet in length, divided into five compartments, the middle and ends projecting beyond the faces of the other work, and terminating in high pitched gables, the centre being crowned with a bell turret; the windows are all of stone, dressed, and comprise triplet and couplet lights, the former being ranged in the projecting and the latter in the reading compartments. The couplet lights rise above the eaves and the main roof, and are gabled. The principal entrance is in the centre compartment. The separate entrances for boys and girls

are from Liverpool-street, and face the play-grounds. The interior of the buildings will be fitted up on the national plan. The roof will be an open timbered one. The buildings have been designed by Mr. T. W. Carter, of this town, architect, and are estimated to cost, after including 450*l.* for site and sundries, the sum of 1,500*l.* The contractors for the several branches of work are Mr. James Williams, bricklayer; Mr. William Yates, mason; Mr. R. B. Huntington, flagger and slater; Mr. W. Pye, joiner; Mr. James Blake, plasterer; Mr. James Walsley, plumber; and Messrs. Clark and Charley, ironfounders.

**Gateshead.**—A public fountain has been erected in High-street, Gateshead, at the expense of the corporation.

**Shields.**—A public fountain is to be erected in the market-place, South Shields, according to the *Newcastle Courant*.

**Forres.**—A monument is to be erected on the Castle-hill here to the memory of Dr. Thomson, of Cromarty, who died from over-exertion in the Crimea, after the battle of the Alma. The foundation of the monument, according to the *Forres Gazette*, is a base of about 24 feet square, and its height will be about 60 feet. The site is the west side of the hill, in the direct line of High-street, from which, as well as from every direction westward, it will form a conspicuous object. Mr. Urquhart, Elgin, is the contractor for the materials. A number of large blocks of freestone are on the ground.

## CHURCH-BUILDING NEWS.

**Watford.**—St. Andrew's Church, Watford, was consecrated on the 21st ult. The prevailing style of the architecture is Early English. The edifice covers an area of 87 feet in length by 40 feet in breadth. The walls are chiefly of flint, with white stone dressings. The roof of the nave, which is 38 feet in height, is covered with ornamental tiles, with stone crosses at the east and west gables, and an ornamental cross distinguishing the nave from the chancel. The tower is 81 feet in height, and it is intended to add a vane which will raise it to 90. The belfry contains eight windows, two in each face of the tower. The spiral roof of the tower is covered with ornamental lead. The exterior of the church is ornamented with some carving in stone of heads and foliage. The nave has a high-pitched open roof, with circular ribs and spandrels—the ribs being stained deal, and the spaces between white. The east window has tracery in the upper part. The west window is of a similar character, but not so large. Between the nave and the north aisle there are five arches. The chancel is entered through a large heavily-moulded arch, showing three half-columns. The seats are all open, and are of stained deal with crimson cushions: fifty-one of them are numbered, and will seat about 300 persons; the rest, affording accommodation for 150 more, are free seats. The edifice stands on the western side of Church-road. It was commenced, according to the *Hertford Mercury*, about three or four years since: the works were suspended in February 1855, and resumed in March of the present year. The structure is now complete, excepting the spire. The architect is Mr. Tenlon, and the builders are Messrs. Fussidge and Son, of Uxbridge. The works have been carried on under the general superintendence of Mr. Hamilton.

**Quedley.**—The parish church of this quiet little village has been re-opened, after having been nearly rebuilt upon the old foundations, except the tower, and with an additional aisle for the accommodation of increased population. This work has been accomplished by the exertions of Mr. Curtis Hayward, the squire of the parish, and the Rev. Erskine Knollys, the incumbent. The edifice will contain about 250 persons. It consists of a nave, two side-aisles, and a chancel. The old pillars and arches on the south side remain. The chancel is fitted up with plain oak choir stalls. A painted window represents the Crucifixion and the Resurrection. The seats are all open, of oak.

**Canville Marsh, Dorset.**—Saint Peter's Church, recently consecrated by the Bishop of Salisbury, is of plain but substantial appearance, and in the Early Decorated style of the fourteenth century. The building is erected of the local stone, with window and other dressings, of Hamdon-hill stone; the roofs and benches of red pine, stained. The north porch and external doors are of oak, with ornamental wrought ironwork. The pulpit is of oak, on a stone base, and the reading-desk, also of oak, is supported by wrought-iron brackets, resting on a dwarf stone screen, dividing the nave from the chancel. The roofs are covered with parti-coloured tiles, and the internal paving is also of red and black tiles, from the Poole potteries. A painted eastern window, designed by the architect, and executed by Lavers, was presented by Robert Willmott, esq. of Sherborne. The centre light gives a representation of the Crucifixion, the side lights show appropriate geometrical patterns

and devices, including armorial bearings and monograms. The trefoil in window-head is filled with a symbol of the Holy Trinity. An old church, very much dilapidated, was taken down to make room for the present new building, and all old remains and other objects of interest have been carefully preserved, and built into the present church. Accommodation is afforded for seventy worshippers. This building was erected at the stipulated price of 464*l.* in a very creditable manner, by Mr. Shewbrooks, of Taunton, under the direction of the architect, Mr. R. H. Shout, of Yeovil.

**Wolverhampton.**—It is proposed to erect a church and schools at Blackebull. The population of St. John's parish alone amounts to 11,000 or 12,000, and at present there is only one church, capable of accommodating 1,660 persons. Church accommodation is to be provided for 4,000. A committee has been formed to carry out the object, and at the recommendation of the bishop, 500*l.* have been granted from the Hodson Memorial Fund. An endowment of 1,500*l.* has been offered, and several sums have been promised to the building fund. About 3,000*l.* will be required to complete the endowment fund, in addition to aid expected from the Church Building Societies.

**Edgbaston.**—The restoration and decoration of the Edgbaston parish church, which were commenced last year, are now completed, and the edifice has been repaired. The walls of the interior have been painted a warm colour, the ceilings of the nave and south aisle coloured blue, and the cornice of the nave and the reredos (which was exceedingly plain) have been decorated. Mr. F. W. Fiddian was the architect employed, Mr. Whitworth the decorator, and Mr. Hardwick the contractor, in the carrying out of the improvements.

**Loughborough.**—The ground appropriated for the cemetery consists of between seven and eight acres, and is situated on an eminence nearly a mile from the town. The lodge is executed in red brick, with Bath stone dressings. Passing through the gates, up the centre drive towards the chapel, on the right is the ground appropriated for the Established Church; on the left the unconsecrated part, with a portion for the Roman Catholics at the further end of the drive. The main building is placed near the centre of the whole grounds, and consists of two chapels, with vestries and a groined cloister, serving to connect the two, and form one building; the compartments at each end of the cloister forming porches to each chapel. The chapel walls are faced with blue Claypole stone, and Bath stone dressings. They are in the Geometrical Decorated style—both chapels being alike externally and internally. The internal fittings are of oak. The architects were Messrs. Bellamy and Hardy, of Lincoln. The contractor for the building was Mr. John Sudbury; the stone-work being executed by Messrs. Walpole and Roberts; and for the iron-work and fencing, Messrs. S. Frisby and Son, all of Loughborough. Mr. J. Savill was clerk of the works. The consecration by the bishop took place on the 25th ult.

**Chesterfield.**—The consecration of the Chesterfield and Tipton Cemetery was performed on the 26th ult. by the Bishop of Lichfield. The cemetery buildings consist of two chapels, each 34 feet by 17 feet, and a lodge, appropriated as residence for the registrar, and a board-room for holding the meetings of the burial-board. The whole cost has been about 3,500*l.* The architects were Messrs. Bellake and Lovatt; and the contractors Messrs. Coates and Barrowes of Chesterfield.

**Salterhebble (Halifax).**—The foundation-stone of the new church now in process of erection for the Salterhebble district, was laid by Mr. W. I. Holdsworth, on the 26th ult. The church is named All Saints, and was designed by Messrs. Mallison and Healey. The site is a field on the right of the road from Skircoat-green to Salterhebble. The style is Early Decorated, and the church will be nearly a cross-church, having nave, side aisles, transepts, and chancel, but having the tower and spire over the north transept. The masons are Messrs. Helm and Co.; Mr. Bedford being the carpenter; Messrs. Bancroft and Son, plasterers; Mr. Walsh, plumber and glazier; and Mr. Maude, painter.

**South Shields.**—The foundation-stone of the new church about to be erected in Mile-end-road, South Shields, by the United Presbyterian congregation of Heugh-street Chapel, under the superintendence of Mr. Thomas Oliver, jun. of Sunderland, architect, was laid on the 26th ult. The building, which will comprise church, school-room, and vestry, is designed in the Gothic style of architecture. The church is cruciform on plan, with nave, aisles, and transepts, and a tower with spire at the south-east angle, with deacon's vestry below. There will be no galleries, but provision will be made in case they are required afterwards. The church on the ground-floor will have 500 sittings. The entire cost, including ground, &c. will be about 2,000*l.* of this the sum of 750*l.* has been subscribed by a few of the members. The



entrance to the church will be in Ingham-street, by a deeply-recessed porch, with carved capital and arch-mould. The end windows are each four lights, and are to be filled with stained glass. The nave columns will be of iron, and the arches above, which support the roof, of wood, filled with ornamental iron tracery. The whole of the woodwork will be stained as well as the roof, which is to be open timber work, some portions of which will be carved. The iron will be represented as such, but painted in appropriate colours, and otherwise ornamented and moulded.

#### THE METROPOLITAN SEWERS.

THE other day at Whitechapel three strong men were stricken to death by the poisonous pent-up gases of a sewer, and two more, in trying to save them, nearly shared the same fate.

This is a tangible example of the dangerous nature of the London drainage; and it would be well to remember that poison, more or less adulterated, exists in all improperly drained and ill-ventilated places. This accident, and some other circumstances which have from time to time come to notice, show that great difficulty will be found in ventilating the huge sewers which are now necessary in the metropolis. People who appreciate the value of good drainage have also a strong dislike to gully-holes and other vents: now, it must be evident that as these vents are complained of, and one after the other shut up, those left open must emit larger quantities of gases of a more powerful description. Something must be done to remedy this, or our many miles of drainage will become as dangerous to explore or open as the worst of long-closed coal-mines. The entire closing of the gully-holes, and the proper ventilation of the sewers, also the means by which the gases may be raised up shafts harmless, are not impossible in this scientific age.

The extent of the London sewerage is weekly increasing, and as each cesspool is closed, and new houses with proper drainage built, so much more is Father Thames rendered unwholesome. This is a circumstance unpleasant to us of the present generation, but which will be beneficial in times to come; for the necessity for improvement will cause proportionate exertions to be made. It is necessary, however, that what is done in connection with London drainage should be effectual, and that we should not entail continual expenses for half measures, but we must — to use a common expression — "take the bull by the horns," and convey the drainage to such a distance from London as will prevent any inconvenience to the coast, and that, too, in close sewers, and not in the monstrous open cuttings recommended by the referees. The plan to accompany their report we may say, by the way, is not yet published.

#### A RAMBLE AMONGST THE METROPOLITAN TOMBS AND MONUMENTS.

FAMILY and friendly love, national gratitude, and that less worthy feeling, the love of pomp and display, have been the means of raising in this metropolis specimens of men's design and handiwork which, in some instances, cause feelings of satisfaction, and in others, those of disappointment and vexation. Notwithstanding artistic deficiencies, there is, however, much interest in a journey amongst the records which have been placed in our churches and other buildings to the memory of departed worthies.

With the exception of those in Westminster Abbey, we have, unfortunately, but few examples in London of the more ancient style of monument, and the chief of these are to the memory of Gower, the poet, in St. Saviour's, Southwark; Rahere, in St. Bartholomew's the Great; and the Duke of Exeter, removed from St. Katherine's-by-the-Tower to the new chapel in the Regent's-park. In some of the churches which escaped the Great Fire are monuments older than that event, but few before the date of the reign of James I. In St. Helen's, Bishopsgate-street, is a very fine altar tomb, on which are recumbent effigies of Sir John Crosby and his lady: there are other monuments here worthy of attention. In the church at St. Mary Axe is the life-like bust of honest John Stowe, seated at his desk, with pen in hand, in a circular-headed niche, surrounded by hour-glasses and other emblems. In St. Giles's, Cripplegate, the monument of Fox, the author of the "Book of Martyrs," and some other old bits within the altar-rails are worthy of notice. Below the present church of St. James, Clerkenwell, in the crypt, surrounded by stacks of coffins, are fragments of the tombs formerly in the original building. In old St. Pancras, notwithstanding the restoration, the old monuments have been retained: here and there the careful wanderer may trace some pieces of incised stone, or mutilated brasses. In the church of All Hallows, Barking; Stepney, and a few other places, there are some remains. Of all the stately tombs

which once adorned the cathedral of old St. Paul's, only a few fire-marked stones remain in the crypt below; and all the memorials in the great mass of the City churches met with destruction at the same time.

Perhaps the oldest monument at present remaining in the metropolis, if we except the Roman, Saxon, and one or two Danish relics, which have from time to time been turned up, is the stone which contains the rudely-sculptured figure of an ancient abbot of Westminster, and which is still remaining in the south cloister of the Abbey, and is probably as old as the middle of the eleventh century. For a considerable length of time, the decoration of English tombs, and chiefly consisted of crosses and other emblems, and rude inscriptions. As a further amount of sculptural skill began to be generally developed, the emblems gave place to figures of the deceased, which were made, as nearly as the rude artists could do so, to imitate the form and costume of the person in whose memory the tombs were raised.

As architecture advanced in England, the marked improvement of the effigies of the departed is strikingly shown by an examination of the monuments in Westminster Abbey, which date from the reign of Henry III. to the beginning of the seventeenth century; and one feels, when looking at the figures of the kings, queens, and others, in this venerable church, that they are correct portraits of those who have here crumbled into dust; and it is evident that the chief aim has been to make the effigies the most prominent and lasting part of the tomb. Take, for instance, the tomb of Queen Eleanor: canopy and sculptured base have perished and decayed, but the lovely figure of the queen still remains. In like manner the effigy of Henry V. if it had met with no wilful destroyer, would have been preserved. The statues of the other kings and queens are also examples which show that a chief object of the monuments was to exhibit and preserve the life-shape of the persons commemorated. In the monuments of the best period of Medieval art, the accessories are sumptuous, and well in keeping with the surrounding architecture, but they neither destroy the principal object, nor detract from the beauty of the building in which they are placed.

It has been remarked that the devotional feeling shown in the monuments of this date is too much overlooked at present, and that in memorials placed by the living to the dead we should sink the display of the actions of the man or woman upon earth, and strive to show the weakness of humanity, and make it the chief aim of our tombs to acknowledge the greatness of divine power, and show our sense of humility. The grave itself, and the instinct which causes us to rear those comparatively frail aids to memory, are a sufficient acknowledgment of our position; and it may be remarked that in the Middle-age tombs of both stone, bronze, and brass, although the figures are arranged in the attitude of prayer, the pomp of heraldry is not neglected, thus strangely mingling together the vanities of the world with more solemn thoughts.

The chief aim of monumental sculpture, however, is to show forth in as clear a manner as can be devised those men and women who, by the divine gift of genius of different descriptions, have conferred benefit upon their country or on the world at large, and that their portraits should be aided by such accessories as will show the nature of their various labours, and put them for many ages before the general view as objects not only of respect and gratitude, but also of emulation.

Having glanced thus slightly at the ancient monuments in Westminster Abbey, we will, without just now noticing the more modern marbles there, ramble to St. Paul's, our other great metropolis church, and there will be found ample matter for contemplation. The building itself, in its vast and glorious proportions, is liable to make us critical of the accessories which are introduced; and although we enter below the dome with an anxious wish to find beauties instead of faults, we are obliged to give more censure than praise.

And first, taking a general view, it must be acknowledged that the immense sums of money which have been expended in sculpture here have not greatly improved the general effect of the building. There are no principal groups of statuary such as Michelangelo would have designed, and which would, like the Middle-age monuments, have incorporated themselves with the architectural form; but the memorials, taken in the mass, are puny and inconsiderable, and not at all in harmony with the genius which designed the building into which they have been received. Let us, however, walk round the place, and stop before the monument of John Howard, the stop before the monument of John Howard, the philanthropist, who is in Roman costume, trampling on fetters, and bearing in his right hand a key, and in his left a roll, on which are inscribed the words, — "Plan for the Improvement of Prisons and Hospi-

tals." In front of the pedestal is a design in basso-relievo, of a figure distributing food and clothing in a prison. With the exception of the Roman costume, this would have been a creditable monument. The Romans did not represent their great characters in Greek costume, neither did the Greeks clothe their heroes in the garments of the Egyptians.

In comparing the monuments in St. Paul's with the more ancient examples in Westminster, we cannot fail to notice that, while the latter have much dignity and repose, they are destitute of any great amount of invention; and that the former show, notwithstanding the failures, an intellectual straining after something, which may eventually produce good results. A few of the monuments in St. Paul's are remarkable for the fitness of the inscriptions: for instance, to a monument to Lieut.-col. Sir W. Myers, Bart. who fell in the battle of Albuera, which is not in other ways particular, great interest is given by the careful quotation of part of a letter to the mother of the young warrior from the Duke of Wellington, which is engraved on the base: —

"It will be some satisfaction to you to know that your son fell in the action, in which, if possible, the British troops surpassed all their former deeds, and at the head of the fusilier brigade, to which a great part of the final success of the day may be attributed. As an officer, he had already been highly distinguished; and if Providence had prolonged his life, he promised to become one of the brightest ornaments of his profession and an honour to his country."

In another instance, on the monument erected at the cost of the nation to the memory of Major-gen. J. Dundas, the resolution of the House of Commons, which specifies the particulars of his services, is engraved at length.

But few of the monuments in St. Paul's Cathedral display any great amount of poetical conception, but amongst those worthy of remark for this quality we may notice that by Westmacott, to the memory of Admiral Lord Collingwood. In this work, the body of the naval hero is represented lying on the deck of a man-of-war, shrouded in colours won from the enemy, and with his hands clasping a sword upon his breast: a figure of Fame kneels over the prow, and the remainder of the composition consists of a figure of "Father Thames," attended by emblematical figures of other British rivers. On the gunwale of the vessel there are basso-relievo illustrations of the progress of navigation: the first shows the uncertainty of navigation when mariners had only stars for a guide; the second, the introduction of the compass; and the third, the forging of instruments of war.

In the monument to General Moore, figures of Valour and Victory are lowering the general into a grave with entwined laurel, while an allegorical figure of Spain plants the standard of conquest over his grave.

It is less pleasant in other works to notice the slightly altered repetition of the same idea, — Britannia mourning, Britannia decking a sarcophagus, Feme consoling Britannia, &c. &c.

In the memorial to Sir William Ponsonby, whose death was caused by the weakness of his horse, which broke down under him in a charge, the horse is shown falling languidly to the earth, whilst, as the guide-book says, "his master, a figure without drapery, in the foreground, is kneeling in a constrained posture in the act of receiving a wreath of laurel at the moment of death from the hands of Victory." The excuse the artist of this design had for placing the warrior before us without drapery it is difficult to conceive.

In wandering amongst the memorials, all must feel the difficulty there is in making the allegory sufficiently distinct to the multitude.

In the monument to the memory of Captain John Cooke, "Britannia is represented [as we are told] mourning, and consoled by one of her children presenting her with her trident, and another her helmet; while in the background is the prow of a vessel, to indicate that the work is a naval monument."

In the memorial to Lord Duncan, the pedestal represents in *alto-relievo* a seaman with his wife and child, designed to commemorate the regard this celebrated officer had for those who sailed under him. The greater number who view this representation are not sufficiently acquainted with the history of Lord Duncan to be able to know the reference these figures have to an amiable point of his character: it should therefore have been mentioned along with his distinguished naval services, and the great victory which he gained over the Dutch fleet.

In many of the monuments in St. Paul's Cathedral there is a great want shown of a harmonious combination of the chief figure with what should be the accessories. The famous Marquis of Cornwallis, in robes of a Knight of the Garter, stands on a pedestal: at the base is a figure of Britannia, with spear and shield, in a stiff, unmeaning attitude; and on the other side are figures which are



intended to represent the Ganges and another river of the East. In taking a round of modern St. Paul's, it will strike many that in monumental works, which are intended for the use of the multitude, allegory should not be too much refined, and that it is always better to convey an idea in a distinct form, even by the assistance of letters, rather than to leave it in doubt. It is useless to waste labour, space, and marble in figures, the intention of which it is difficult to understand.

In Flaxman's memorial to Lord Nelson, although the pedestal is not exactly to our taste, it is applied to a useful purpose, for on one part are cut, in bold letters, the names of his three greatest victories—Copenhagen, Nile, and Trafalgar; and below that are representations of the North Sea, German Ocean, the Nile, and Mediterranean; and every one will appreciate the feeling which designed the fine figure of Britannia, with one arm partly encircling two sailor-boys, and the other pointing with admiration to Nelson, who is dressed in the uniform he wore at the time of his death, with the exception of a cloak, which he received as a present from the Sultan. AN ARTIST.

#### INSPECTION OF LONDON DWELLINGS.

We regret that, notwithstanding the able advocacy of the Earl of Shaftesbury and others well acquainted with the subject, the Bill which was lately brought into Parliament to give increased powers to the inspectors of dwellings should have been rejected. The necessity for such a measure has not been sufficiently appreciated.

No one can be more ready to advocate the just claims of the poor than ourselves, or to respect the opinion that an Englishman's house should be his castle: it is, however, necessary, for the salvation of the lives of those placed in certain positions, to interfere firmly, though wisely and kindly. Such interiors as those we have described in the Sand-yard, Clerkenwell, Gray's-in-Lane, and other places which still exist, wherein several families are huddled together, are "castles" not only dangerous to those who occupy them, but also to those living around. Since power was given to the police to examine public lodging-houses, we have seen something of their operation: we have seldom heard them complained of; and while we know the good which has been effected through it in various districts, it has been found that the law was not sufficient to reach many overcrowded rooms, in which from fifteen to twenty men, women, and children, of different ages, were at times collected together. Few, we think, who have observed such a condition of things, will advocate the continuance of arrangements which surely lead to immorality and crime, besides the loss of health and life.

The inspection of dwellings is a very delicate matter to deal with, but we are assured that something must be done. We have lately made further inquiry in the neighbourhood of Clipstone-street and other districts, and feel certain that the overcrowding of the houses is increasing, approaching to a certain extent to the same condition as the dwellings which have been removed. It is true that the drainage is an advantage in some places, but the houses, both as regards general arrangement and ventilation, are unfit for the reception of numerous families. In some of those houses which consist of twelve rooms, including the garrets and kitchens, we found distinct families in each room, and some rooms were occupied by even more than one. We put down the numbers given to us as occupying the rooms in one house—1, 2, 6, 8, 7, 8, 9, 6, 2, 5, 4, 2—60. Many of these houses are roomy, and have once been places of some consideration, but the persons who let them in tenements have made no provision of extra closets, sinks, &c. such as is made in the houses which have been altered by the societies for improving dwellings. The staircases are closed at the top, and there are no arrangements for obtaining a circulation of air. The atmosphere of some of these staircases was very bad, and the supply of water quite inadequate for so many people. It is vexatious to find hardworking men preferring such habitations to the excellent arrangements of the model buildings. In parts of Islington and elsewhere, the numbers who occupy some of the houses which are let in tenements are surprising. In a row of small six-roomed houses we found in one three families, who consisted of twenty-four persons; in another there were four families, whose numbers were seventeen; in another there were also four families, or eighteen people, and so on.

It must be evident to all that these thick populations require very great care, and we think that those houses which are systematically built should be placed under certain, though not too stringent, regulations. The buildings ought, in the first place, to be adapted as far as possible to the wants of the numerous tenants; and it has been suggested that the subletting

of premises should be held responsible for the number of persons he receives, and that this might be managed without any particular system of examination, if the landlord of each house were made liable to a fine for receiving more tenants than the space would give healthy room to. Those who felt aggrieved by the overcrowding might give information. We must confess that the subject is beset with difficulties, chiefly caused by prejudices and ignorance which ought by this time to have been overcome. The evil is evident, but the remedy has not yet been found.

#### ELECTRO-TELEGRAPHIC PROGRESS.

THE East-India Company, we hear, have agreed to pay 20,000*l.* a year to the Indian Telegraph Company from the date of the first message, and till the line yields an annual profit of 6 per cent. The concurrence of Government, however, is a requisite.—The Mediterranean telegraph is about to be laid, the line being now on its way in the *Elbe*. It is 150 miles long, and is to be sunk between Cagliari, on the Sardinian coast, and Bona, on the coast of Algeria, whence it will be connected with Alexandria by a submarine line along the coast.—Mr. Lindsay, of Dundee, in the *Northern Warbler*, reminds the public of some curious experiments of his at Portsmouth and elsewhere, in the formation of marine telegraphs without any transmarine or submarine wires except on each of the coasts so connected. In respect to the Atlantic telegraph, he says,—"One plate or sheet of copper might be immersed in the ocean at Lizard Point in Cornwall, and another at the north-west part of Scotland, connected with the former by a wire and its telegraphs. Here the lateral distance is about 500 miles, and between the parallels of 50 and 59 degrees. Nearly opposite to these are the north-east point of Labrador, and some part of Nova Scotia. The lateral distance being 600 miles would be a fourth part of the cross distance, which is nearly 2,000 miles, but as much electricity would pass as would move the needle without an excessive battery. By this method the expense would not be a tenth part, perhaps not a hundredth part, of that by the cable, and the charge for messages would be proportionally smaller. Causes may, however, occur, when lateral distance cannot be got, that a cable is necessary"—the Atlantic line, however, not being one of these! The experiment at Portsmouth, so far as we recollect, was indeed a remarkable one, but the idea of an Atlantic line without any Atlantic wire is scarcely conceivable. Is Mr. Lindsay, by the way, aware of the existence of the following passage in a letter written by Dr. Franklin to Peter Collinson, of London?—"Spirits at the same time are to be fired by a spark sent from side to side through the river, without any other conductor than the water, an experiment which we some time since performed to the amusement of the navy." The continuance of a Franklin in favour of his very startling idea ought not to be lost sight of, but perhaps Franklin's meaning was not exactly what his words would seem to imply.

#### FOREIGN INTELLIGENCE.

*The Restoration of the Cologne Cathedral, and the Colner Domblatt.*—On the relation which the latter journal bears to the restoration of that huge Mediaeval building, M. Reichenperger, Prussian M.P., makes the following remarks:—"We find here a complete series of the periodical reports of the directing master (the cathedral architect), and the minutes of the meetings of the open committee, who have conducted this huge work at such a titanic cost. We see here how stone, as it were, was put to stone, to make a grand and perfect whole; the very history of every portion of the construction is here rolled up before us; and all the doubts, impediments, and difficulties are faithfully recorded, as well as the wise and well-considered means by which we succeeded in removing them. It has become clear that the cathedral being the result of so many endeavours and restorations,—it was by no means easy to tread again, as it were, in the footsteps of those old masters. The social organism in which they had lived had been rent asunder; their systems and rules had vanished from memory; art and workmanship had become separated, and had taken diverse, even opposite directions,—all which was to be re-organized, or at least to be newly arranged. But that school which has now arisen at the foot of the cathedral, has more than a local significance. Leaving even out of the question that the Cologne Cathedral is a European monument, towards which the eyes of architects and amateurs are directed, this restoration forms a turning point in the history of (German) architecture, and its collateral arts. For proving this, we only have to look at the many ecclesiastical buildings erected of late in the Rhine-lands, as well as the great restorations of historical buildings carried on in Aix la Chapelle, Coblenz, Neuss, &c. Nay, we may fearlessly assume,

that the great renovation processes going on now in the cathedrals of St. ashurg, Speyer, Mayence, Frankfurt, Ulm, Worms, Vienna, &c. have had all their common source and origin in our *Fatherland's* Cologne Dom.—Civil architecture also has taken the cue from our doings, and a better taste, far distant from pseudo-antique, or academic eclecticism has taken hold of the mind of architects; while our open committees have given a death blow to red tapeism, aristocratic art-bureaucracy, and the similar banes under which other huge constructions are labouring at the present time."

*Bucharest in 1857.*—The following sketch of the Moldavian capital may be of some interest just at the present time:—The first exterior aspect which Bucharest presents to the tourist is quite specific, as its houses and gardens, its places and streets, and its population, partake both of the Oriental and somewhat the Italian character. There is much difficulty to arrange into anything like order those planlessly aggregated streets, some dark, others with more light, crooked or straight; mostly disagreeable by either mud or excessive clouds of dust, the latter constantly stirred by herds of all sorts of domesticated animals. The houses surrounded by gardens or empty spaces, offer a picture of most gloomy contrasts. Still, here also (as in most half-civilized countries), the original type of building is obviously derived from the Wallachian *clay hut*, specimens of which are yet to be seen in some of the outskirts of the city. Next to them come the small, one-storied houses, which, being a compound of brick and wood, are inhabited by the inferior classes of the population. From these to the few, even palace-looking dwellings of the rich, are several intermediate gradations. The interiors of the dwellings of the *Bojars* are literally crammed with the most costly furniture, the finest tapestry, the most splendid glass and China ware. Nothing is deficient in a Wallachian noble's house, but the mind of the natives, which may impart some life and movement to these exteriors of pseudo-social life.

#### FOOT-LIGHTS—COVENT-GARDEN THEATRE.

I PRESUME it is intended that in the new Covent-garden Theatre every improvement will be adopted which can add to scenic effect. Let me recommend the abolition, or rather modification, of those hideous objects—foot-lights. What occupant of pit or stall has not often felt annoyed that he could only see the heads of the actors (when half-way down the stage) over or between these unsightly obstacles, which, though sometimes 18 inches high, barely shelter his eye from the glaring, smoky glare of the gas Argands, and which form a harsh foreground which would mar the effect of the best pictorial group or stage scene ever produced.

You must, of course, have a foot-light,\* but why not have a thin, close, continuous, and bright line of jets an inch apart, and shaded from the audience by an shallow rim running in an unbroken line along the whole front, and which need not be more than four or five inches above the level of the stage? It might be an improvement, too, to keep the grimes and contortions of the orchestra a little out of sight. A. C.

#### SALTS ON WALLS AND DAMP IN WALLS.

AN "Old Subscriber" complains of this old and oft-complained-of grievance, and asks for a remedy, or rather a preventive. Various articles on this subject have appeared in our pages. Thus, on 11th July, 1855, will be found some remarks by Mr. C. H. Smith, in a communication to the Commissioners on the Fine Arts. In this communication, Mr. Smith remarks that "it is sulphate of magnesia (common Epsom salt) which is occasionally found to cover the surface of newly-built walls with an efflorescence like hoar frost." He explains how such salts are frequently produced in wall, or gain access to them, as through the sand, water, lime, or brick-clay entering into their composition; but he considers that "under ordinary circumstances it is scarcely possible to get rid of the various saline or deliquescent substances that have once been admitted into the walls of a building." We may, however, refer for further information on the subject to Mr. Smith's communication itself.

On 30th June, 1855, "An Analytical Chemist" (Mr. Wentworth Scott) writes us to the effect that correspondents in asking how to get rid of this evil ought to ascertain and describe the precise species of salts complained of, but offers his aid if a little of the salt be forwarded to him. "Meantime," he says, "I may as well give the process I have found quite effectual in the few instances of the kind that have come under my notice:—Take 4 lbs. commercial car-

\* Reflectors from above might be substituted, as suggested in the *Builder* nine or ten years since, on a plan previously put in practice, and with complete success.



bonate of soda (natron), 2½ lbs. commercial carbonate of potash (pearlash), and 2½ lbs. of finely sifted silver sand: mix intimately, and put into a crucible (iron is best, if not Hessian) capable of containing three times the quantity, and fuse for two or three hours: pour out upon a stone or iron slab, and allow it to cool: then boil in about one gallon of water, until a saturated solution is obtained. Let the salt be scraped off the wall as much as possible and washed well with warm water; then brush the hot solution prepared as above on all parts of its surface: give the wall another coat in three days' time, and, at the end of a week or two, the wall will be covered with an impervious glassy coating, which will, I think, attain the desired object. If applied to damp walls they cease to be so. It will also prevent the white rubbing off."

Other communications by the same writer afterwards appeared in our columns, as on page 557 of the same volume; and, if we mistake not, the Crystal Palace Company were indebted to Mr. Scott for removing the saline disfigurement on brick walls at the palace.

## IRON TRADE OF SOUTH STAFFORDSHIRE.

### IRON GIRDERS.

The iron trade of South Staffordshire may be set down as in a condition which is an improvement upon its state for the past five weeks. The advices from the United States have imparted to it a measure of soundness which, until this week, it has not in the time mentioned possessed. From across the Atlantic the news received as to the nature of the orders to be sent thence justifies the conclusion that several houses, largely engaged in the American trade, and which have considerable influence in the iron market at home, will not be lacking orders up to a period beyond quarter-day next.

There seems less likelihood now than there was a fortnight ago that, in so far as the long-established houses are concerned, a reduction of prices will be declared for the next quarter. Some of these, however, before the improvement in the American advices, were accepting rates for sizes and descriptions of which they had only a few, if any, orders in hand, which has further illustrated the fact that the determinations of the quarterly meetings are not to be classed with the laws of the Medes and the Persians.

In the midst of this state of things, it seems surprising to many that so little should be doing in the pig trade in the way of sales. At Birmingham yesterday (Thursday), and at Wolverhampton the day before, the majority of the persons on 'Change were stock-brokers and commission-agents, all ready to sell pig-iron at rates which are certainly not a fair profit upon the article, in the present price of the raw material and labour. Some few transactions were effected at 4s. for pigs, that, to have realized their maker a profit at all proportionate with the profit of the maker of malleable iron, should have obtained at least 5s. more. Most of the finished iron-makers, who order largely at quarter-day, have not yet had all the orders of last quarter-day supplied to them, but in about a fortnight they will have, and then pig sellers will be admitted to an interview. Another reason for the apparent dullness of the pig trade is the large increase in the make of that article now as compared with even twelve months ago. Stocks of pigs have slightly increased in the past fortnight.

A further proof of the desirability of substituting wrought for cast iron in the construction of girders in ordinary buildings, has been afforded in the history of the accident in this district of recent date. A week or two ago, it will be remembered, a portion of an upper flooring at the screw manufactory of Messrs. Grice, Weston, and Co. of Spout-lane, on the Stour Valley Line, fell in consequence of the breaking of a cast-iron girder which supported it, occasioning damage to the amount of 500*l.* and killing a workman.

At the inquest Mr. Nicholls, the architect, stated that the girders had been proved before they were put up, and were sufficiently strong to carry twenty-two tons breaking weight, whilst the weight upon it, at the time of the accident, was only about fifteen or sixteen tons. The newspaper report of the inquest upon the girl, concludes thus:—

"The coroner suggested to Mr. Grice, in the event of their rebuilding the warehouse, the propriety of their having oak beams, supported by iron columns, instead of cast-iron girders, which suggestion Mr. Grice promised to see carried out!"

"The coroner," it is right to say, was on this occasion a deputy coroner, a young man from Devonshire, evidently with very little faith in iron. The coroner would, no doubt, have called in such scientific aid as would have accounted for the accident, and not have left the jury to decide upon the testimony of the architect, who "could not in any way account for the fall."

## PROBLEMATICA MATHEMATICA.

FIND the dimensions of the largest cistern that can be lined with a given rectangular sheet of lead, by soldering it only at the four angles formed by the intersections of the sides and ends of the cistern.

Let  $a$  and  $b$  denote respectively the length and width of the given sheet of lead, and let  $x$  be taken to represent the depth of the required cistern. Then the four pieces cut from the corners of the given sheet will be equal squares, having their sides equal to  $x$ , the depth of the cistern, and leaving the dimensions  $a-2x$  and  $b-2x$  for the length and width of the cistern. Its three dimensions will therefore be expressed by  $a-2x$ ,  $b-2x$ , and  $x$  (1); and its capacity by  $(a-2x)(b-2x)x$ .

Let  $u = \phi(x) = (a-2x)(b-2x)x = a^2bx - 2abx^2 + 4x^3$ ; then we have to determine that value of  $x$  which makes  $u$  a maximum. Hence, by differentiation,

$$\frac{du}{dx} = a^2b - 4abx + 12x^2 = 0;$$

$$12x^2 - 4abx + a^2b = 0;$$

$$\text{and } x = \frac{a+b \pm \sqrt{(a+b)^2 - 3ab}}{6}$$

$$\frac{a+b \pm \sqrt{a^2 - ab + b^2}}{6}$$

Upon examination it will be found that  $\frac{d^2u}{dx^2}$  is negative when we take the lower sign in the value of  $x$ ; therefore  $u$  is a maximum for the root

$$\frac{a+b - \sqrt{a^2 - ab + b^2}}{6}$$

Hence, by substituting for  $x$  in (1) its value

$$\frac{a+b - \sqrt{a^2 - ab + b^2}}{6}$$

we have the quantities,

$$a - \frac{1}{3}(a+b - \sqrt{a^2 - ab + b^2}),$$

$$b - \frac{1}{3}(a+b - \sqrt{a^2 - ab + b^2}),$$

and

$$\frac{a+b - \sqrt{a^2 - ab + b^2}}{6}$$

which are the required dimensions of the cistern.

A plane reflector, of given length, is placed with one end of it touching the base of a vertical object, and turned about this end, as its axis, until the extremity of the reflection of the object would meet a vertical line passing through an extreme point in its opposite end; to determine the height of the object.

Let  $\delta$  = the given length of the reflector, and let  $a$  be the angle of inclination of the plane of the reflector with that of the object; then the angles of incidence and reflection =  $\frac{\pi}{2} - a$ , the angle which the reflection of the object makes with the reflecting surface, on the side opposite to that of the incidence of the object, =  $\frac{\pi}{2} - (\frac{\pi}{2} - a) = a$ ; the angle which the vertical line would make with the same side of the reflecting surface =  $a$  (Euc. I. 29); the angle which the vertical line would make with the reflection of the object =  $\pi - 2a$  (Euc. I. 32); and the farthest extremity of the real object and that of the reflected object will be equidistant from the reflecting surface, and on opposite sides of it (Griffith's Optics, 20).

Hence the height of the object = the length of the

$$\text{reflector} = \delta \frac{\sin a}{\sin(\pi - 2a)}$$

Cambridge.

A. J. TOMPKINS.

## BUCKINGHAM PALACE.

WHEN I see in your Journal the grand displays of architectural skill shown in the design of the intended Public Offices, I look with wonder and a sort of admiration at the pinnacles, turrets, and long lines of elevations, decorated in various tastes, and having all some peculiar merits; but none of which, in my humble opinion, are equal to the visionary idea I had formed of a great national building which is intended, for ages to come, to remain as a prominent example of the taste of this remarkable age. It is true, sir, that I am not a practical man, and yet still can form some idea of the difficulty an architect may find in adapting the design of a large building to peculiar purposes. In the late competition, however, it appears that the architects have been left a wide scope for the display of their imagination: large sums have been offered as prizes, the competition was very properly left open to the world, and yet we find that the best of the selected buildings strongly reminds one of others already in

existence. In my own mind, I cannot help comparing the drawings in connection with this competition which you have shown us with Inigo Jones's design for the building of Whitehall Palace, and have an impression in favour of the elegant and varied plan of that architect. It may be said that in the present instance we do not want a palace, but two Government offices, for war purposes and for the management of foreign business. In the designs, however, which you have shown to us, there is little in general appearance which indicates what they are, but already hinted, the designs offered for the Public Offices, so far as the exterior appearance is concerned, might just as well do for palaces, and would certainly give the public a much better idea of the home of royalty than the Londoners can obtain by a glance at the dingy and awkward pile called St. James's, and the equally unpleasant-looking Buckingham Palace. As regards the latter structure, it may be worth while to notice that the part of this building open to the view, not only of the inhabitants of the metropolis, but also of the many thousand visitors from the provinces (who are sure, if they can, to take a peep at the Queen's house), and the great bulk of foreigners, is not the back of the palace, holding pretty much the same position as regards the whole as do the stables and other subordinate premises of important mansions, and which are generally, if possible, concealed by trees and other devices. Enormous sums of money have been and still are being spent on this building, which turns its back upon the public, and which in the eyes of strangers of taste makes us to be worse thought of than we really deserve to be. Now, when houses are being demolished around this palace, and an almost incredible sum of money expended in clearing away the small surrounding dwelling, an operation which only serves to render the baldness of the architecture more apparent, might it not be considered worth while to open some peep which would enable the public to get a glimpse of the western front, and the beautiful trees which are so well placed in the grounds?

Up Constitution-hill the screen is a dismal-looking brick wall; and on the Piccadilly side the tall houses completely hide the palace front and gardens. I venture to suggest that it would be well to throw down a portion of the brick wall and some of the tall houses, and let us have a distant peep at Buckingham Palace from these points. Considering how willingly the large grants for other purposes have been made, there is no doubt that the extra sums required would be cheerfully given.

Few persons would advocate this evident improvement if they thought that it would in any way interfere with the privacy of her Majesty or family; but by the gardener's skill we might have a view of the house, and the private walks be, notwithstanding, sheltered from the view of the passing crowd.

PEDESTRIAN.

## RECENT PATENTS.\*

T. W. G. TREBLE.—*Forming Sewers or Tunnels, and Galleys to Tunnels.* Dated Nov. 13, 1856.—This invention consists—1. In forming a railway in the sewer to get rid of the earth. The rails are formed on the invert, and where they come the part may be hollowed out so as to prevent extra weight of material. 2. In causing a current of air to be drawn through, so that the sewer or tunnel may be carried any distance without disturbing the ground above. 3. Of a gully sluice-trap for carrying off the surplus drainage. 4. In forming pipes with longitudinal joints as well as the common transverse joints that are now used. The object of this is, that the pipes may be taken through the sewer or tunnel in separate parts and afterwards put together.—*Not proceeded with.*

JOHN BIRD, Chance's Fire-brick Works, near Dudley.—*Manufacture of articles suitable to be used as Window-heads and Sills, Lintels, and other similar Parts of Buildings.* Dated Jan. 19, 1857.—This invention consists in manufacturing articles suitable to be used as window-heads, sills, lintels, and other similar parts of buildings from fire or other clay, in a dry or nearly dry state, by forcing it into a suitably formed mould by a pressure sufficiently strong to cause the clay to retain the form given to it by the mould after it is removed therefrom. The articles thus moulded are burned in a kiln, in which are three or more walls or supports, across which the articles to be burnt rest, being kept apart by separating bricks. At the front of the kiln is a screw, which, as the articles shrink during the burning, is used to force forward a block long enough to rest on all the supports, so as to keep the articles constantly in contact with the separating bricks, and never leave them room enough to twist or get out of shape.

T. C. SALT.—*A new or improved Method of*

\* Selected from the lists published in the *Mechanics' Magazine and Engineer's Journal*.



**Coating with Glass, or Enamelling Surfaces of Cast-iron.** Dated Oct. 29, 1856.—The enamelling of cast-iron, or coating it with glass, is effected by the use of powdered glass enamel, applied by gun-water, and afterwards fused.

**R. A. BROOMAN.—Improvements in Machinery for Cutting and Dressing Stone, Marble, and similar Materials.** (A communication.) Dated Nov. 8, 1856.—The object here is to imitate hand-cutting. The distinctive features lie in the manner of working the cutting chisels. The stone is carried in a horizontal direction upon a moveable platform, while the chisels are made to act upon its upper surface in an inclined direction, and opposite to that of the feed. These chisels are supported in guides, formed in the lower cross rail of the frame. Each guide stock is connected to a toggle lever, the upper end of which is fastened to the upper cross rail of the frame, and it is by acting upon the centre joint of the toggles, whereby they are made to vibrate, that motion is given to the chisels. The motion is imparted by cams.

**W. BRINDLEY.—Improvements in the Preparation of Paperhangings and other Ornamental Papers.** Dated Nov. 5, 1856.—These consist in rendering wall papers or paperhangings impervious to moisture by a peculiar process of oiling and drying, which has also the property of communicating to the water or body colours, with which the same are stained, much of the character of oil-painting. And in glazing paper prepared by the said process, by passing the paper and compressing it between revolving smooth surfaced metal rollers, as practised in calendar machines.—*Not proceeded with.*

**J. KINKINBURGH.—Improvements in Moulding or Shaping Metals.** Dated Nov. 13, 1856.—This relates principally to the moulding of hollow or tubular articles of cylindrical contour, and is also applicable in the manufacture of articles resembling pipes in general structure. Core bars, capable of contracting in diametrical dimensions, are used. These core bars are each composed of three longitudinal pieces of curved metal, or segmental metal plates, combined together so as to form a bar of the desired diameter, with their longitudinal junction edges in contact with each other. On a spindle are keyed small eccentrics. Connecting rods pass from these, and are jointed to a long, narrow, externally-adjusting wedge-shaped piece, which virtually forms a fourth segment of the core bar.

**JOHN PORTESCUE, Charles-street, London.—Improvements in the Construction of the Furnaces of Bakers' Ovens for the purpose of Consuming Smoke, which improvements are also applicable to the Consumption of Smoke in other Furnaces.** Dated January 26th, 1857.—The furnace is provided with outer and inner doors, and is furnished at the top, at the end next the oven, with a block or inverted brick extending downwards across the furnace. Over the inner door is an opening extending across the furnace, and the outer door is provided with a projecting block, which, when the outer door is closed, fits into the same opening, and renders the same air-tight or nearly so. When fresh fuel is supplied to the furnace the outer door is left open, and a current of air admitted, which, in passing over the top of the furnace, becomes heated, and is thrown downwards by the block or inverted brick at the end of the furnace, and, meeting with the upward current of air through the furnace bars, effectually consumes all the smoke and gases evolved from the fuel. The admission of the proper quantity of air necessary to consume all the smoke is regulated by opening or closing the outer door of the furnace, which should not be left open wider than is necessary to admit the minimum amount of air required.

#### RECENT AMERICAN PATENTS.\*

**For Improved Machinery for Escavating Rock.** JESSE C. OSGOOD, Troy, N.Y.—Claim: 1st. Excavating rock under water by means of the wedge-shaped chisel, whose length is greater than the depth of water. 2nd. The spring-head, or its equivalent, in combination with the chisel. 3rd. The arrangement of the spring within the loop or strap of the turn-buckle, in combination with the slitting nut.

**For an Improvement in Rotary Brick Machines.** GEORGE CRANGLE, Philadelphia, Pennsylvan.—Claim: A cylinder without movable bottoms to the moulds, in combination with a bed-piece fixed to the frame of the machine, so as to serve the purpose of said bottoms, the said cylinder and bed-piece being constructed, arranged, combined, and operated together.

**For an Improved Saw-mill for Resawing Boards and other Lumber.** PEARSON CROSBY, Fredonia, New York; patented Nov. 3, 1841; reissued March 10, 1849; extended October 30, 1855; re-re-issued April 28, 1857.—Claim: The mode of operation of gauging, guiding, and presenting boards to the action

of a saw, which mode of operation results from combining with a slitting saw the mechanism for gauging and guiding one face of the boards, and the mechanism for making a self-adjusting pressure on the opposite face of the boards, so that the boards will be clamped between the two said mechanisms on opposite faces, and immediately in front of the cutting edge of the saw, so as to prevent the gauged face of the boards, however warped or bent they may be, in a plane parallel with the plane of the saw. Also, in combination with a slitting saw, and the arrangement of the gauge and pressure rollers connecting the said gauge and pressure rollers with the mechanism from which they derive motion by means of universal joints. Also, the method of hanging and straining the saw, by the combination of the three stirrups at the ends of the saw.

**For an Improvement in Combined Square, Mitre Square, and Bevel.** ALEXANDER MCKENZIE, Boston, Massachusetts. Claim: The arrangement of the try square, the mitre, and the bevel blade, the latter being hung so as to project upon the opposite side of the stock from the blade, and so as to form when set at an angle of 45 degrees a continuation of the mitre head.

**For an Improvement in Levels or Inclinoimeters.** THOMAS A. CHANDLER, Rockford, Illinois.—Claim: The combination of an entire graduated circle, provided with a pendulum and index, with the two parallel sides of the level stock, whereby I am enabled to apply either side of said stock to the surface whose direction is to be ascertained, and at the same time have the index facing the operator, in whatever position he may be placed. Also, the level composed of the before enumerated parts in combination, whereby, among other things, either edge of the instrument may be used uppermost with its face or dial towards the operator, and when any two of the pointers are screened from sight by an intervening body, the third will indicate the inclination of the surface to which the instrument is applied, and the angles at the head and foot of a rafter will be indicated at the same time.

**For an Improved Side-walk Pavement.** JOHN B. CORNELL, City of New York.—Claim: Casting in one piece a section of a street gutter and curb of suitable shape and proportions. Also, forming the side-walk pavement of a series of metallic plates, when said plates are combined with each other, and with the aforesaid metallic street gutter and curb.

**For an Improvement in Iron Pavements.** CHARLES METTAM, City of New York.—Claim: Casting each block, or plate, with a number of hooks standing out laterally from below the general level of the bottom thereof, and turning upwards in the form of vertical tenons, and with a corresponding number of mortises in the lower faces, so that when the plates are laid together, the vertical tenons of one block or plate enter mortises in adjacent ones, and the mortises receive tenons of adjacent ones, while the laterally projecting portions of the blocks or plates make them mutually supporting.

**For an Improvement in Cast-iron Pavements.** CHARLES J. SHEPARD, Brooklyn, New York.—Claim: Forming polygonal metallic paving blocks, with the inclines at the upper part of the straight sides, and with the projections to take the inclines of the adjoining blocks at unequal distances from the angle of said blocks.

**For an Improvement in Apparatus for Boring Artesian Wells.** JESSE N. BOLLES, Assignor to M. W. BOLLES, Philadelphia, Pennsylvania. Claim: The combination of cylindrical boring-rods with cutters and valves, so constructed as to discharge the detritus upon the surface of the ground at every stroke of the drill, or any other mode, substantially the same, which will produce the same effect.

**For an Improved Process for Ornamenting Daguerreotype Cases, &c.** JOHN F. MASCHER, Philadelphia, Pennsylvania.—Claim: The process of ornamenting daguerreotype cases, or other articles, in imitation of tortoise-shell, wood, marble, or other substances, by first covering the surfaces thereof with stained or coloured paper of suitable character, or staining or colouring the surfaces themselves in a suitable manner, and afterwards coating them with gelatine, and bi-chromate of potash.

#### Books Received.

**Architectural Economics: comprising Tables and Designs for Details for Assistance in Estimating.** By the Rev. G. Scrutton; formerly of the Royal Institute of British Architects. London: Longman and Co.

The object the author of this little book has in view is to shorten the process of making estimates of buildings by means of tables which he thinks almost all concerned in building might find serviceable, especially those upon whom devolves the laying out

to advantage funds subscribed for charitable objects. Thirty-two of the fifty-three tables consist of "values computed in decimals of a pound, of the cost of the larger kinds of work which occur in buildings. Each decimal factor is a value of one square foot of the interior ground-plot of a given building, of which estimates are proposed to be calculated. In other words, take the area in feet of the plans minus the thickness of the walls, and multiply by the decimal factor given for the work whose expense is required to be estimated."

The calculations for this class of tables have been based upon certain definite sizes of area: it will therefore be necessary to bear in mind that these tables will only give approximate estimates in cases of great variation from the sizes here adopted, showing that the tables given are of very limited application. The various factors, such as for walls, roof, floors, &c. have to be taken from the tables and their sum multiplied by the number equal to the feet of area. The system is roundabout, and it may be a question, even in the case of the few plans given to which it could be applied, whether the result would be nearer the mean of four of five builders' tenders than the jumping estimate made by the common mode of cubing in the gross. Nevertheless, there are many who will find Mr. Scrutton's book of results,—the proceeds of much labour,—a useful aid well worth its cost.

**The Useful Metals and their Alloys, with their Applications to the Industrial Arts.** London: Houston and Wright, 65, Paternoster-row. 1857.

This volume contains a great deal of valuable information on the subject of the useful metals and their alloys, including metallurgical chemistry, mining ventilation, and jurisprudence, in relation to the conversion of iron, copper, tin, zinc, lead, and antimony ores, and their applications to the industrial arts. The subject of iron alone, however, occupies a great part of the volume, and it includes a pretty full account of the various uses and adaptations of that metal to architectural and engineering purposes, with numerous engraved illustrations. The work has been written by several authors, among whom are Messrs. W. Vose Pickett, the author of the "New System of Iron Architecture;" W. Fairbairn, the engineer and mechanist; and W. Truran, C.E. The book resembles "Orr's Circle of the Sciences," if it be not based on it entirely, but in a new form.

**Collectanea Antiqua: Etchings and Notices of Ancient Remains, illustrative of the Habits, Customs, and History of Past Ages.** By CHARLES ROACH SMITH, Hon. M.R.S.L. Vol. IV. Part 4. Printed for subscribers only, and not published.

This part completes the fourth volume of this interesting and valuable archaeological work. It treats of Roman remains found at Petham, in Kent, Discoveries of Frankish Sepulchral Remains by M. Auguste Moutié, a Roman Sword found near Mayence, and various other discoveries and researches. It also contains the preface, list of subscribers, and index, together with an appendix on Mr. Smith's "Museum of London Antiquities," sold to the British Museum, and other matter. The part, like those which have preceded it, is illustrated by engravings, and shows how efficiently Mr. Roach Smith is still working.

#### Miscellanea.

**OUR FOOTWAYS.**—I dare say that you, in common with myself and the legion of readers of your useful and instructive publication, have, in your peregrinations in the suburbs of London and other towns, benumbed the absence of paved ways, unmathematised the loose, sharp, rolling pebbles of the gravelled path, and begrudged the horse (so unconscious of the better provision made for his travelling, as compared with his biped master's) his smooth and pleasant road; but pray has it ever occurred to you or your readers that by a very simple process the pathways might be made as agreeable to the pedestrian as the roadways, and thereby danger to life and limb by the use of the roadway, or de-struction to shoe leather, pain to tender feet, and most disagreeable walking be avoided? If not, I will endeavour to enlighten you upon the subject. The simple process referred to is the vigorous use of the birch-broom. Let long-formed, well-trodden, gravelled footways, after ten days' or a fortnight's continuance of dry weather, be well swept, and they will afterwards be found to be almost as pleasant to the feet, and much more agreeable to the eye, for paving footpaths in rural districts imparts a "cockneyified" appearance to them. Our male poor might be employed in the operation. The expense of beams would not be much, and the thing once well done, would not have to be repeated until after a due lapse of time from the application of the pickaxe and the laying down of new gravel.

F. C. M. SPEARMAN.

\* Selected from the lists published in the *Journal of the Franklin Institute*, of Pennsylvania.



**THE OPENING OF THE FILEY WATERWORKS COMPANY.**—The opening of the Filey Waterworks took place on Friday, August 7th. It was intended that the directors and shareholders should have a picnic beside the reservoir; but the weather being so unpromising, the assembly-room of the Royal Hotel was engaged for the occasion, where the party had their collation. Mr. Moody was called to the chair. The works had been planned and completed on a somewhat large scale, far beyond present requirements. The prospective wants of the rising and prosperous town of Filey had been considered and provided for. It was calculated they had sufficient water for 10,000 inhabitants. The demand for water, too, was much greater than was anticipated; and he thought there was every probability that the works would pay a good remunerative interest on the outlay. The works had been executed with economy, and yet in the best and most solid style. He thought there was very great credit due to the engineer, Mr. Fairbank, for his industry and skill. Under his direction the works had been executed in a most satisfactory way.

**THE JENNER STATUE.**—Steps are at length being taken to provide a suitable site for the statue of the discoverer of vaccination, completed by Mr. Marshall, and only waiting to be placed on its pedestal. Trafalgar-square is mentioned as its probable destination.

**GAS.**—At the eleventh half-yearly meeting of the shareholders of the Wolverhampton Gas Company, held last week, a dividend at the rate of 10 per cent. per annum, was declared, and a balance of 91½ carried to the reserve fund, which will then amount to 570%. The reduced rate of charges came into operation on the 1st January, and the result had been satisfactory. The policy of reducing the price of gas was specially approved of.—The half-yearly meeting of the York Gas Company was held last week, when a dividend of 7 per cent. was resolved on, and also that the charge for gas should be reduced from 5s. to 4s. 6d. per 1,000 feet. There was a warm discussion, it being contended that the company was in a prosperous condition, and able to pay 8 per cent.

**PROPOSED GREAT CENTRAL WEST-END TERMINUS.**—The grand desideratum of a common centre for railway traffic in the metropolis appears to be assuming a definite shape at last. A scheme has already been matured for the construction of an immense central station on and around the site of the basin of the Grosvenor canal, at Victoria-street, Westminster (less than 1,000 yards from Charing-cross), with a central line of railway to run along the short route of the Great Western, near Battersea-park Bridge, crossing the river by an iron bridge of its own to the Battersea side, east of the new park, and running thence through Brixton, Clapham, Dulwich, Camberwell, and the suburban districts on the Surrey side of the water, and communicating with all the lines of railway going south,—that is, with the lines to Brighton, Dover, the Crystal Palace, the main line of the South-Western, the Croydon, Epsom, Mid-Kent, and North Kent. It is astonishing that the *Times*, in announcing the advent of this grand and simple scheme, does not put the finishing stroke to so comprehensive and desirable a work, by pointing attention to the fact, that already the whole of the northern lines are connected almost with the very site of the central station of which it speaks, by means of the West London line, and an obvious and easy continuation of that line along the bed of the Kensington canal, and through some of the streets of Chelsea bordering the river, onwards to the Grosvenor canal itself. From the Great Western and the North-Western (which in turn are already connected with the Northern and North-Eastern lines by the North London), the West London already extends downwards to the basin of the Kensington canal, and thence one-half of the short remainder may be said to be already formed by the bed of that canal. The entire circuit of the Metropolitan lines, north, south, west, and east, would thus be cheaply and easily completed in the one grand terminus at Victoria-street.

**THE BROTHERTON MEMORIAL.**—For this memorial, which it is proposed shall be erected in the St. Salford Borough Cemetery, there has been a competition of models and designs; and we learn that at a special meeting of the committee, held on Friday, the 22nd ult. the drawing No. 1, motto "Hyperion" (author T. Holmes, architect, Manchester\*), was selected, provided it can be erected and completed in a satisfactory manner for the sum specified in the conditions. The prize of twenty guineas was awarded to the model No. 65, motto "Bela" (author M. Noble, sculptor, London). Special commendation was expressed in favour of the following, viz.:—Model No. 17, motto "His were deeds, not words"; drawing No. 41, motto "For men to seek their own glory is not glory"; drawing No. 51, motto "Nemo"; and model No. 60, motto "C."—*Manchester Guardian*.

\* We are asked to say that this should stand as, by Messrs. Holmes and Walker.—Ed.

**HOW ARE WORKMEN'S HOUSES TO BE BUILT IN EDINBURGH.**—Under this title, the Rev. Dr. Begg writes a letter to the Lord Provost, in which he says: "To build workmen's houses with advantage, they must, of course, be built in quantities. Land, plans, contracts, all can be got cheaper if got wholesale; and if well aired, dry, comfortable, well situated workmen's houses could thus be erected and sold to each workman at wholesale price, an immense object would be gained. The property investment companies have been extremely useful, especially to the class above the working men; but, inasmuch as they have not, like the English and Irish societies, done anything in the way of buying land or building additional houses, they have, by increasing the number of purchasers, only raised the value of all the second-rate property at present in existence. They have not as yet gone by any means to the root of the mischief, nor can they ever do so upon the present plan. They have been most valuable in teaching and encouraging frugality and forethought in many of our citizens, and in acting as a kind of bankers for managing the money of their members; but their full utility and value will only be discovered, as well as that of the savings' banks, when a scheme is set on foot for surrounding the whole city with new clusters of comfortable and suitable houses, which the people may have in their power to buy by means of the existing machinery for accumulating money. Now, what I propose is, to raise a capital for this express purpose. Two friends of mine have offered to advance 100*l.* each with this view: I shall advance another; and if forty or fifty men in Edinburgh will do the same—in other words, if 4,000*l.* or 5,000*l.* can be raised for this express purpose, I think I see how the entire ground-floor of our society might in due time be elevated above the present level of degradation. Let this money be advanced upon the principle of limited liability, and let the issue be tested, and each subscriber be allowed to retire if there is any loss of funds at the end of the first and of every succeeding operation: let the funds be handed over to a committee of first-class men of skill and experience—let them begin by erecting a number of houses upon the most approved plan, say from forty to fifty, in the most dense neighbourhoods of working men—let these houses be sold to the workmen in retail at cost price, after calculating all expenses—let the men, by means of savings' banks and investment companies, purchase them—let the capital thus extricated be again immediately removed to another locality, and the same operation repeated,—and let this be done again and again until the whole necessities of the working classes of Edinburgh are supplied; or until they have so learned the art of combination for the accomplishment of such an object as to be independent of help."

**IMPORTANT MOVEMENT FOR THE PROMOTION OF SOCIAL SCIENCE.**—Lord Brougham has consented to preside, and to deliver the inaugural address, at the formation of an association which is about to be established for the purpose of bringing together the supporters of the various efforts which are now being made for social improvement (sanitary reform, &c.) and to elucidate by discussion the connection between each, and the mutual assistance they may render to each other. The new movement will partake to some extent of the character of the educational conference recently held in London, over which the Prince Consort presided, various branches of social science being referred to "sections" or "departments" conducted by gentlemen who have paid attention to the subjects. The inaugural meeting will be held in the Town-hall, Birmingham, on Monday, October 12, when Lord Brougham will deliver an introductory address. On the evening of Tuesday a *soirée* will be held in the Town-hall. On Wednesday evening, the 14th, a public entertainment will be given to Lord Brougham and other members of the association by the mayor of Birmingham. On Thursday evening, the 15th, a public meeting will take place in the Town-hall, on the subject of the Reformatory movement. On Friday morning, the 16th, the concluding meeting will be held, to receive a report from the general committee, and on other business.

**NEWCASTLE-UPON-TYNE SCHOOL OF ART.**—The annual distribution of prizes gained by this school took place in the Museum at Westgate-street, on the 24th ult., the Mayor of Gateshead in the chair. In course of the proceedings it was stated that the committee had been in a manner forced from their usual quiet mode of dispensing the prizes, into some public display, by the extraordinary success that had attended the exertions of the pupils of the school in the present year, during which the new regulations had come into force. In the northern district of England there were six Schools of Design. It had turned out, as the result of the examination this year, that the number of prizes given to the pupils of the Newcastle School of Design was larger than the whole number gained by the pupils of the other five schools. The report was then read and the prizes distributed.

**NEW BUILDINGS ON THE CASTLE ROCK AT EDINBURGH.**—There are now in course of erection, or at least about to be commenced, some new edifices on the northern section of the rock. The site of the old garrison chapel, taken down some years ago, is the scene of operations. The face of the rock beneath the Mons Meg Battery has been scarpred, and it is intended, it seems, to erect an extensive armoury on the original site of the church, to form three sides of a square, and to include Queen Margaret's Chapel in its integrity. Other alterations, including the erection of a chapel in a more obscure part of the rock, are contemplated by the authorities. "Here," remarks the *Post*, "was an excellent opportunity to repair the errors of the past, and redeem the architectural aspect of the Castle buildings. But what is the course pursued by the Ordnance? They utterly ignore the principles or practice of architecture, and commit the whole plans and designs to Colonel Moodie, of the Royal Engineers,—not an architect at all;" and the same course, it adds, is to be pursued in this instance which produced the contemptible fabrics on the western side. The botching of so magnificent and picturesque a site as the Castle Rock of Edinburgh by mean buildings is much to be regretted.

**THE SEWERAGE OF BILSTON.**—This work having been commenced by Messrs. Hassall and O'Brian, of London, we give the various estimates sent in for the work:—Mr. J. C. McKenzie, Wellington—Contract No. 1, 3,483*l.*; No. 2, 4,438*l.*; No. 3, 4,307*l.*; No. 4, 1,224*l.*; total, 13,452*l.* Mr. John Elliott, Wolverhampton—Contract No. 1, 2,796*l.*; No. 2, 4,318*l.*; No. 3, 3,763*l.*; No. 4, 1,192*l.*; total, 12,069*l.* Messrs. J. and S. Harpur, Derby—Contract No. 1, 2,900*l.*; No. 2, 4,400*l.*; No. 3, 3,500*l.*; No. 4, 1,260*l.*; total, 12,060*l.* Mr. Handerson, Wellingborough (which came too late)—Contract No. 1, 3,033*l.*; No. 4, 1,274*l.*; total, Nos. 1 and 4, 4,307*l.* Messrs. Hassall and O'Brian, London (which was accepted)—Contract No. 1, 1,750*l.*; No. 2, 1,625*l.*; No. 3, 2,240*l.*; No. 4, 836*l.*; total, 6,351*l.* It will be seen that the accepted tender was less than one-half of one of the others, and only slightly exceeded half the amount of any other. The commissioners agreed to maintain the sewers in repair themselves, instead of requiring the contractors to maintain them, and for this the following deductions were offered:—Mr. McKenzie, 134*l.*; Mr. Elliott, 300*l.*; Messrs. Harpur, 1,404*l.*; Messrs. Hassall and O'Brian, 300*l.*; leaving the actual contract accepted at 6,051*l.*

**THE THRONE-ROOM AT THE LUXEMBOURG.**—An engraving of the new throne-room, recently inaugurated, will be found in our last volume (XIV. p. 434). As to the decorations of the apartment, we find in the newspapers that "The painting of the two hemicycles has been executed by M. Lehmann, and the cupola of the sections of the central division are the work of M. Balze, Brothers. M. Brune has painted the two octagons and the eight medallions. The subject of the four paintings of the western gallery are selected from the reign of Napoleon I. and those of the eastern one from that of Napoleon III. M. Lehmann takes up the history of the monarchy and of French civilisation from the defeat of Attila by the Roman general Actius, and brings it down to the time of Louis XIV. M. Balze in the cupola represents the apotheosis of Napoleon I. Six medallions, placed above the three doors and the three windows of the central division, complete the ornamentation. In the octagon of the western gallery M. Brune has represented warlike France, and in that of the eastern one pacific France—that is, France of the arts, agriculture, and industry. The western hemicycle embraces three centuries and a half. It shows France reviving to faith and independence under the reign of the Merovingians and the Carolingians. The two extremities of the hemicycle represent war. At one Merovens repulses the fierce Attila, and behind Merovens falls Actius, his ally. At the other Charles Martel is represented as striking down adversaries with his battleaxe, and driving back the Saracens. The painting on the second hemicycle goes over five centuries and a half, and in the centre stands prominently forward the figure of Joan of Arc. One of the eight pictures represents Napoleon III. distributing the eagles."

**DESIGNS FOR THE SHEFFIELD CRIMEAN MONUMENT.**—We understand that the Sheffield Crimean Monument Committee have received upwards of seventy designs, models, and drawings, which we are informed are of a superior character, and are now at the Cutlers' Hall awaiting the adjudication, after which they will be exhibited as early as possible. The judges selected by the committee are Mr. G. G. Scott, A.R.A., of London, and Mr. Edmund Denison, Q.C., BIRMINGHAM ARCHITECTURAL SOCIETY.—At a meeting of the Birmingham Architectural Society, held on Monday evening at the Midland Institute, Mr. S. Hemming and Mr. J. R. Botham were elected to serve on the Council of Queen's College, in accordance with the charter of that institution.



**BLACKBURN INFIRMARY.**—I begin to think that the committee for erecting this building is in want of a secretary. I have sent two letters in application for the particulars of the competition as advertised in your pages, and have received no reply. Blackburn has ever had the reputation of supporting "native talent," and this would go far to bear out that character. A new secretary may, however, be of some advantage, for I have had on a previous occasion the pleasure of writing for full six months to the present functionary without receiving an answer. I trust that none of your readers have been used in a similar manner.—**THOMAS D. BARRY.**

**A MINE PARACHUTE.**—I desire to call the attention of those of your readers connected with engineering to an account of a mine parachute, which offers great if not absolute safety to the miner. From the account given below I should hope that it would not be difficult for some practical mind to devise a machine from the scanty particulars furnished. The extract from a morning paper runs thus:—"As eight miners were two days ago being drawn up with ten hectolitres of coal from the pit of St. Louis (Aude), the rope attached to the kibble broke when at a considerable distance from the bottom. The death of these men would have been certain, but for the adoption in the mine of the parachute Fontaine, which is so contrived that when the rope breaks the hooks of the apparatus stick into the sides of the shaft, and preventing the fall of the kibble, keep it suspended until a fresh rope can be attached. The number of lives saved by the adoption of this apparatus in France already amounts to 82." I hope that a similar mechanical contrivance may be introduced to save our poor miners.—**PIONEER.**

**EAST GRIMSTADT CHURCH.**—Permit me to explain the mistake of which "A Sussex Yoke" complains in your last number under the heading of "Sussex Churches." In the notice to which he refers, East Grimstead should have been printed East Grinstead; and this, as your note correctly informs him, is in Wiltshire. I may add that your former correspondent was not correct in stating that the chapel of ease had been rebuilt by the Rev. F. Glossop, the rector of West Dean, that gentleman having in fact borne a share only of the expenses, which were defrayed by a subscription amongst the members of his family.—**F. H. POWNALL, the Architect.**

**RAGGED SCHOOL AT CHATHAM.** The Under-Secretary to the War Department having announced that Lord Panmure would provide a site 50 feet by 100 feet on Chatham Lines for a Ragged School, Colonel Savage, R.E. has staked it out, and handed it over to the committee, who have already nearly 3000 in hand, with many conditional promises. Mr. Charles Ford has undertaken to erect the building on liberal terms.

**MANUFACTURE OF IRON.**—Mr. C. Binks has obtained two more patents in connection with his process. He states that his invention consists in the employment of alkaline matter, in addition to, or in place of, lime, silica, or other flux. He prefers those ores which are freest from alumina and silica, such as good hematite, magnetic, specular, or sphatose iron ore, blackband runstone, &c. The alkaline matter he prefers is soda, by preference the carbonate, but potash or its carbonate may also be employed, or there may be used any other convenient materials that, under the conditions of the operations of a blast furnace, will yield an alkali, an alkaline carbonate, or a carburet. The quantity of soda used varies from 2 to 10 per cent. of the fuel, it being intended that there shall be sufficient of the alkaline base to retain all the impurities of the ore, without interfering with the combustion of the fuel.

**SLATES.**—In your journal of the 15th ult. you gave a paragraph on the names of slates. In order to form a correct statement, permit me to append the following. Before anything like a systematic working took place at the Bangor quarries, the slates from them and the neighbouring districts were sent from the quarries of various lengths and widths; but the greater number were from 6 inches to 18 inches long, and separated by the slater into sorts, the names of which you gave, and these continue in use in this neighbourhood to the present day, and cannot well be dispensed with. The later sorts of slates are different in every respect, being of an even surface, nearly square in shape, varying in name according to the size, but are always of one certain dimension. I may add, that about fifty years ago a considerable number from Llangollen were used, but as they have been found to last only thirty or forty years, they are not so much used as formerly.—**WM. RUSCOE.**

**DECAY OF THE REMAINS AT IONA.**—A correspondent of the *Scotsman* draws attention to the neglect and decay of the ruins on the isle of Iona, and suggests that something ought to be done to preserve them. The isle, we believe, is the property of the Duke of Argyll, whose attention, doubtless, only needs to be called to this subject to ensure the doing of all that is requisite.

**HINT TO BUILDERS.**—The freestone of the great quarries of Leckhampton, near Cheltenham, is nearly 110 feet in thickness, and some of the beds are remarkable for their treacherous disposition after a frost. Last winter the shivering and splitting of window sills constructed of this stone was universal in new buildings, and at Redmarley Church her Majesty lost her nose, and the Archbishop of Canterbury his big wig and chin, entirely through the corbels being cut from the "wet-stones" of this strata.—**Symonds's Stones of the Valley.**

**THE "GREAT EASTERN."**—The *Canadian News* states that this ship will be launched in the first spring tide of next month (October). The day is not, as yet, absolutely fixed, but this important event will probably take place on Monday, the 5th, the tides being highest on that day.

**LEWISHAM: HATCLIFFE'S CHARITY.**—The foundation stone of six new almshouses, was laid on Wednesday, the 26th ult. by the Hon. Mrs. Henry Legge. Five of the six will be built and endowed from the proceeds of the above charity, the sixth by subscriptions now in the course of collection. The design is by Messrs. Tinkler and Morphew, the former of whom, as we have elsewhere noted with regret, is since dead. The contract has been taken by Mr. William Miller.

**REMOVAL OF SEWAGE.**—A few days before I left Charleston, S.C. (United States), I saw at the Charleston Hotel a very ingenious contrivance for raising the contents of cesspools above the surface at a trifling expense, and without the usual unpleasantness on such occasions. An old boiler was set on trussels against a wall high enough for a cart to go underneath, and a pipe about 6 inches diameter went from the boiler into the cesspool, and a small lead pipe from the top of the boiler connected with the steam-engine of the establishment, and by letting the steam into the boiler for about ten minutes, then turning it off, it created a vacuum, and the boiler of 2,000 gallons would fill itself in about five minutes from the cesspool; then the cart, with a large barrel in it, would back underneath, and put a piece of hose-pipe, connected with the boiler, by a flange into the barrel, and carry off the load; the whole operation being done without any trouble or annoyance. Now, sir, could not this system be employed to advantage about large establishments in London, where there is steam on the premises? or would it not pay to have wells at the mouths of the large sewers, and raise the contents in this cheap and inodorous way for the purposes of manure, as there is no labour in raising, or filling the waggon.—**JAMES M CONKAY.**

## TENDERS.

For the Jews' Cemetery, Forest-gate, Essex. Mr. H. H. Collins, architect. Quantities supplied by Mr. Snell:—

	Mortuary House.	Lodges.	Roads, &c.	Total.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Longmoir and Burge . . . . .	1539 0 0	427 0 0	1079 0 0	3035 0 0
Birrell . . . . .	1320 0 0	130 0 0	878 0 0	3128 0 0
Wood . . . . .	1320 0 0	142 0 0	1033 0 0	3495 0 0
Tolley . . . . .	1365 10 0	107 17 8	836 0 0	2726 11 5
McLennan and Bird . . . . .	1488 0 0	433 0 0	706 0 0	2717 0 0
Walburton . . . . .	1188 0 0	456 0 0	777 0 0	2621 0 0
Pickard . . . . .	1371 0 0	450 0 0	703 0 0	2524 0 0
Doles . . . . .	1251 0 0	939 6 4	752 7 0	2316 3 1
Morter (accepted) . . . . .	1248 0 0	978 0 0	637 0 0	2363 0 0
Single . . . . .	1078 0 0	912 0 0	574 0 0	1896 0 0

For alterations and additions to the "Salle Robin," Tiebome-street, Haymarket. Same architect:—  
Messrs. Drunton ..... £1,425 0 0 || Pickard and Co. (accepted) ..... | 1,162 0 0 |

For building house and stable at Blackheath, for Mr. James Leing. Messrs. W. G. and E. Hebersohn, architects. Quantities supplied:—

Peteman .....	£3,183 0 0
Gorham .....	3,139 0 0
Rowland .....	3,680 0 0
Eyles .....	2,867 0 0
Tarrant .....	2,858 0 0
Purkiss .....	2,792 0 0
Todd .....	2,742 0 0

For additions to mews at Islington. Mr. James Tolley, architect. Quantities supplied:—

Hurst .....	£1,117 0 0
Gleyn .....	1,089 0 0
Pickard .....	1,087 0 0
Dennis .....	1,000 0 0
Williams (accepted) .....	987 0 0

For new church, Blackheath, Mr. Benjamin Ferrey, architect:—

George Smith .....	£4,240 0 0
Lee and Lavers .....	4,200 0 0
G. P. White .....	4,020 0 0
Lucas, Brothers .....	3,856 0 0
Dove, Brothers .....	3,745 0 0
J. and C. W. Todd .....	3,680 0 0
Geo. Myers .....	3,608 0 0
H. and R. Holland .....	3,467 0 0

For the erection of Croxton Hall, Lancashire, for J. R. de Trafford, Esq. Messrs. Pugin and Murray, architects. Quantities supplied:—

Holmes and Nichol, Liverpool .....	£7,600 0 0
Myers .....	6,000 0 0
Mullen, Liverpool .....	5,623 0 0
Yates, ditto .....	5,600 0 0

## TO CORRESPONDENTS.

*Measuring Tracing Paper.*—"Silvio" asks "to be informed of the best method of mounting tracing paper on linen or paper,—more particularly the latter."

H. W. (we are not aware if the reward be still recoverable. Our correspondent if wise, will not entertain an idea which has led many to poverty).—M. A. A. Friend to the *Builder* it would be waste of time to discuss incomplete report. J. S. D. W. Y. must look to the date at the head of the paper; not at the title-page of his book!—T. M.—J. F. F.—Centurion.—G. R. M.—Slane faces at fallacies.

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

"Books and Addresses."—We are forced to decline pointing out books or finding addresses.

## ADVERTISEMENTS.

**METROPOLITAN BOARD OF WORKS.** ELECTION OF DISTRICT SURVEYOR under the METROPOLITAN BUILDING ACT, 1855.—The Metropolitan Board of Works, in pursuance of the provisions of the said Act, will hold an ELECTION, on FRIDAY, the 2nd of OCTOBER next, at TWELVE O'CLOCK at noon, in the ELECTION ROOM, 1, CROOKED LANE, for a DISTRICT SURVEYOR for the District of St. George-in-the-East and St. Paul without Aldgate. Applications in writing, with certificates of competency, addressed to the Board, will be received at this office, No. 1, Crooked Lane, until THURSDAY, the 1st of SEPTEMBER next, at 4 O'CLOCK in the afternoon; and the candidates are requested to be in attendance at the meeting of the Board on the day of election.

J. H. WOOLRYCH, Clerk of the Board.  
1, Crooked Lane, 20th August, 1857.

**MANCHESTER CITY SURVEYOR.**—The City of Manchester has a vacant office of CITY SURVEYOR, and the gentleman appointed will be required to undertake the direction and management of the surveying and architectural business of the corporation, and to possess knowledge and experience as a civil engineer, and not to be directly or indirectly engaged in any other business, and to devote the whole of his time to the service of the corporation.—Seal of application, with testimonials, stating the age of the applicant, and the amount of salary required, and endorsed "Application for the office of City Surveyor," addressed to the Town-clerk, must be delivered at the Town Hall, Manchester, on or before MONDAY, the 14th day of SEPTEMBER next.—By order.  
JOSEPH HERON, Town-clerk.  
Town Hall, King-street, August 28 1857.

**CLERK OF WORKS,** capable of preparing Plans, Drawings, Estimates, and Superintending the Execution of Works, is WANTED. FURNISHED with a list of wages will be given, to one thoroughly acquainted with all particulars, with full particulars as to qualifications, terms, &c. to O. Essex Wharf, Strand, London, W.C.

**IN A SURVEYOR'S OFFICE.**—WANTED, A YOUTH, who can write a good plain hand, trace drawings, and is conversant with the use of a hand-writing, to D. J. BROWN, 27, St. George-street, Westminster.

**TO PLUMBERS.**—Notice is hereby given, that there is a VACANCY in the Office of BRADLEY, the Plumber, &c. Persons desirous to become Candidates, are requested to send their written applications for the same, with testimonials, to Mr. Laurence Bradley, at his residence, Cannon-street, City, on or before the 15th day of SEPTEMBER next, and to attend the Court, at Plumbers' Hall, B. B. Lane, Cannon-street, City, on the 21st day of SEPTEMBER next, at TWO O'CLOCK in the afternoon precisely.

**TO CARVERS.** WANTED immediately, a CARVER of good qualification, to execute sundry miscellaneous works; a portion of which are situated in the county of Lancaster; and of which the salary may be executed on the lowest scale.—Address, Mr. ORRILL, Architect, Leicester, stating where, and by whom, latterly employed.

**TO ORDNANCE SURVEYORS OUT OF EMPLOYMENT.** WANTED, for a short time, a first-class ORDNANCE SURVEYOR for Town work.—Apply, by letter, asking terms and references, to H. S. Office of "The Builder."

**WANTED, in a Builder's Office, a CLERK** used to keep accounts and take out quantities occasionally.—Apply to X. B. Office of "The Builder."

**WANTED, immediately, TWO or THREE** good MASONS.—Apply at the CHURCH, Braintree, Essex.

**TO BRICKLAYERS.** WANTED, a BRICKLAYER, to do the laying of the cement and chert houses, at per road and a half, south side, City of W. ST. JENKINSON, 1, Southampton-street, Strand, London, W.C.

**WANTED, in an Engineer's and Iron-founder's Office, a YOUTH, as JUNIOR CLERK.** He must have a good knowledge of architectural drawing. He will have to make himself generally useful.—Address, to A. B. care of Mr. Woodhall, 61, Poland-street, W.

**CARMAN AND ACTIVE LABOURER.** WANTED, a well-recommended Man, for a King's cart of his horse, and to drive one horse and cart, make himself useful, read and write. Age about 40; married; no incurable. Also a strong active Labourer, with respectable habits, from the country, as Gate-keeper; one that can pack hedges; one that can dig; one that can make a good road and write well; married. Wages about 15s. to commence with.—Apply by letter to T. O. Office of "The Builder."

**WANTED, by a Young Man, a SITUATION as BRICKLAYER, or Employment Can do painting.**—Address, W. B. S. Upper Boston-place, Dorset-square.

**TO BUILDERS, PLUMBERS, &c.** WANTED, by a well-experienced Young Man, EMPLOYMENT as PLUMBER; will fill in any other line, if required.—Address, H. B. 19, New-street, Bedford-row, W.C.



# The Builder.

VOL. XV.—No. 702.

**A**LTHOUGH we have already sufficiently indicated the conclusions arrived at by the late Commission, appointed by her Majesty, at the instance of the House of Commons, to consider and report upon the question of a new National Gallery, particularly as regards the site, and have also expressed some personal opinions on this subject, there are various interesting points in the evidence adduced before the Commission, to which it may be worth while briefly to refer.

The Commission, as we may here remind our readers, consisted of Lord Broughton, Dr. Milman (Dean of St. Paul's), and Messrs. Ford, Faraday, Cockerell, and Richmond. Mr. Ford, however, was unable from illness to act upon the Commission; whose report, moreover, so far as regarded the expression of collective opinion, was cramped by the requirement of the Royal warrant that five signatures should be affixed to it; so that the Commission were compelled, as they remark, to frame a statement to which all of them could agree, and which, therefore, could hardly contain much more than a summary of their proceedings, without the arguments and inferences usually to be found in similar documents.

The witnesses examined by the Commission were,—Sir C. L. Eastlake, P.R.A.; Sir Charles Barry, R.A.; Baron Marochetti; the Chancellor of the Exchequer (Sir G. C. Lewis); Sir E. Landseer, R.A.; and Messrs. H. Farrer, J. Nieuwenhuys, J. Bentley, J. P. Knight, R.A.; E. W. Cooke, A.R.A.; E. T. Parris, W. Mulready, R.A.; J. M. Smith, S. P. Denning, R. T. Smart, A. Panizzi, E. Hawkins, E. Oldfield, W. H. Carpenter, Sydney Smirke, R.A.; John Bell, R. Westmacott, R.A.; John Ruskin, F. Hurlstone, J. Fergusson, E. A. Bowring, John Doyle, A. J. B. Hope, J. F. Lewis, R.S.A.; H. Warren, T. L. Donaldson, and M. Digby Wyatt.

It was thought by many of the witnesses, even those who nevertheless declined recommending the Kensington Gore site, that Charing-cross was, to some extent, inferior to that site as regarded atmospheric impurities, at all events at present, and until the metropolis spread a little farther to the westward; but that there was a class even of atmospheric impurities in a picture-gallery which were probably more especially injurious to pictures, namely, those arising from crowds of human beings, and which were no more injurious on the present site than on any other.\*

The liability of smoke also to cover the pictures within metropolitan bounds was pretty generally admitted, although some who were conversant with the preservation of such artworks insisted that where pictures were lightly and carefully dusted, no injury whatever to their surface was occasioned either by the smoke or the dusting. As a complete remedy, however, for smoke, dust, and human vapours, the more general protection of the pictures by glass was strongly recommended by competent witnesses, as by Sir Charles Eastlake, and Messrs. Cooke, Mulready, Ruskin, and J. F. Lewis,

although, as observed by some, much has already been done to purify the metropolitan atmosphere by recent legislation, and more might yet be effected in a similar way.

The combination of painting with sculpture was recommended by the great majority of the witnesses, and particularly by Mr. Bell, Sir Charles Barry, Mr. Westmacott, Baron Marochetti, Mr. Ruskin, Mr. Fergusson, and Mr. J. F. Lewis. A proposal, however, made by Mr. Richmond, and seconded by Professor Faraday, to identify the commission with this very general opinion, was considered by the three other commissioners to be unnecessary.

In his evidence, Sir Charles Barry explained the comprehensive scheme which he recommended for the union of paintings with sculpture, &c. in the British Museum, at the same time admitting the general accuracy of our account of that scheme in the *Builder* (to which the Commission referred him), as the only publication of it (though not on his own authority) of which he knew. This comprehensive scheme, as our readers may recollect, was projected before the recent conversion of the central court or enclosure of the British Museum into a library and reading-room. In reference to a metropolitan site generally for the new National Gallery, Sir Charles stated his opinion to be, that the objections to such a site had been somewhat exaggerated.

Having now given some general idea of the prevailing evidence on important points, we may lightly turn over some of the voluminous pages of the minutes of evidence appended to the report of the commissioners, and note down a few of the more salient matters as they appear in the records of the evidence given by the respective witnesses.

Sir Charles Eastlake was the first witness examined. The first question asked him related to the injury which pictures were said to receive in a large city. Sir Charles was of opinion that in London pictures did suffer from smoke and crowds: there certainly was a state of the atmosphere produced by these crowds themselves, the consequences of which were that dust and smoke adhered more readily to the surfaces of the pictures; and even assuming the presence of damp, surfaces so affected more readily attracted dust. The crowds he referred to were those visiting the pictures, not the general population of the metropolis. Besides such reasons as these for covering pictures with glass, it was very desirable that those within reach of children, especially, should be so protected, as some of these (and even of their elders, he might have added) had a practice of touching with their finger the surfaces to which they pointed. A blow that would break the glass into a picture, was likely to do still more damage where there was no glass. There was an objection to glass in certain circumstances, however, as when the lights of the picture are low and the whole effect weak: mirrored objects (as from ladies' bright dresses) are then almost as distinct as the picture. Such circumstances and conditions ought to be taken into account in considering the expediency of protecting pictures with glass. For behoof of students the glass should be removable, except from cartoons and drawings. In the cleaning of pictures, Mr. Bentley did not touch the painted surface: of that he was certain: he only took off the surface dirt. Still the cleaning of a picture is always more or less dangerous. Some of Mr. Turner's pictures, now in the National Gallery premises, were astonishingly changed and much injured by his own neglect, and while they still remained in his house. Parts once white were now quite black, and the effect of the picture totally changed. Three or four appeared to be completely ruined; nevertheless, Mr. Bentley had restored the colours. The injurious influences which had operated on these

pictures appeared to have been damp, dust, and smoke: ordinary care would have prevented such injuries as those they had suffered.

Mr. Bentley was shortly afterwards examined. Mr. Turner's pictures, he said, were not injured by the London atmosphere, but by damp. The colours which ought to have been whites were now blacks. He had never seen any other pictures so affected as those of Turner. This arose from peculiarities in his manipulation. There is "a great mystery" in Turner's pictures. The whites contain much sugar of lead, and they sweated in the damp. On Dr. Faraday's suggestion he admitted that the whites were probably sulphuretted, although he had previously used the words "oxidated like an iron railing." Several of the pictures were exhibited to the Commissioners, and Mr. Richmond allowed that they were "skillfully restored." His process was a secret. As to pictures in general, Mr. Bentley admitted that they became a little brighter in the country, but he upheld the innocence of the London air from all special injuriousness of action on pictures: still, "after a certain time there is a sort of mucus upon the picture, the same as you find upon a looking-glass, which requires to be taken off. Now," he added, "I have kept pictures in London, and I believe that wiping them once in every two or three months would keep them in perfect condition, if it were for a century."

Mr. Parris gave some details as to his restoration of Sir James Thornhill's pictures in the dome of St. Paul's, and his own picture of London in the dome of the Colosseum at Regent's-park. In reference to the influence of smoke on pictures, he thought attention enough had not been paid to the vehicles used by different artists. There was a quality which he had found by long experience in drying oil that none of the resins possessed: it seemed to have a sort of liking for smoke, or whatever else was hovering about it, and imbibed it to a certain extent wherever it might be, whether in London or out of it; and he should say the smoke and dirt were as much in private houses as in public buildings. The dome painting in St. Paul's had not suffered from degradation caused by the London atmosphere.

Mr. Mulready, on being asked whether he considered that any permanent damage had been suffered by the pictures belonging to the Royal Academy from their residence in London, replied that he thought there might be any permanent damage: they were darker in colour. His own pictures kept in the London collection were also a great deal darker than when painted: whether that darkness might be removed without damage to the pictures he did not know. Simple washing might be very injurious to pictures painted on gypsum grounds: water may penetrate cracks and soften the gypsum and glue, and curl up the coating from the gesso ground, or even peel it off. Glass he should use as a protector of pictures when size and situation permitted.

Mr. Panizzi, examined chiefly on the subject of the British Museum, said he would wish the natural history collection removed from the Museum, as they had nothing to do with the rest of the collection; but the art collections he should not wish to be taken anywhere else. He could not in his mind detach a great national collection of antiquities from a great national library worthy of a great country. Asked whether, as things were at present, there was ground in the possession of the British Museum trustees on which galleries might be built for the reception of any accessions that might be made to the National Gallery, he said he thought not much, but he believed there were rooms in the building already existing that might be applied to antiquities without sending away any other collections.

\* Perhaps it might have been even fairly urged that these emanations, at least, were likelier to be neutralized in London, by the defecating or deodorizing carbon of smoke of the metropolis, than elsewhere.



Mr. Sydney Smirke, on being asked what opinion he had with regard to bringing the National Gallery of pictures to the British Museum, replied that it seemed to him an extremely proper thing: the upper gallery in its present height would not be perhaps sufficiently handsome for such a gallery; but a moderate addition to the height of the present rooms, or of a portion of the present rooms, and increasing the skylights, would render the upper floor, he thought, perfectly good, and well adapted for the purpose. Of course he did not contemplate, on this view, the retention of the natural history collection: that could not be done without enlarging the precincts of the Museum: he meant an exchange of natural history for pictures,—of science for art. He had heard his brother (the designer of the Museum) say, that the original intention, thirty years ago, was to put the public collection of pictures on that floor.

Mr. Bell was disposed to think that sculpture and painting should be under one roof, or in some way connected, in the same great national gallery. Drawings, too, by the old masters, if placed in the gallery, would be illustrative of certain points in study, and of the process of study generally.

Baron Marochetti considered it most important to combine works of sculpture and painting, as far as possible,—those sculptures in the British Museum, for example, with those pictures which are in the National Gallery. Three sides of the present gallery, he thought, were too much crowded with private houses. Marlborough-house, Gore-house, the museums in Brompton, were crowded in every way with works of art. A very large building would immediately be crowded. The public collections would soon be as important as any in Europe. Few people imagine what space they will want to place them in. He would put such sculptures as the Nineveh marbles under glass, as they were in alabaster, were quite flat, and suffered much from climate; but to cover statuary with glass, though a safe mode of preservation, would injure the effect. He much preferred Kensington-gore to Trafalgar-square as a site for a gallery. Whether a picture be kept in town to get dirty, or to be cleaned when dirtied, real injury was done to the picture beyond what it would be liable to out of town. People would not be prevented going to see the pictures: perhaps more go even to Hampton-court to see the pictures than to the National Gallery.

Mr. Ruskin thought it most essential that sculpture of all kinds should be united with paintings, if a national gallery was to be of service in teaching the course of art. His great hope respecting such a gallery was that it might become a perfectly consecutive chronological arrangement; and it seemed to him that it was one of the chief characteristics of a national gallery that it should be so. He approved of the protection of pictures by glass in every case, however large the picture might be. He thought that, independently of the preservation, the effect would be more beautiful, as glass gave an especial delicacy to light colours, and did little harm to dark ones. He should ask the ladies to stand aside a little with their bright dresses, and look one by one at the pictures. Glass is essential to the safety of pictures for twenty or thirty years in London. He had found his own pictures deteriorate in a couple of years when unprotected by glass; and when so deteriorated the work suffers for ever: you cannot get into the interstices, and no cleaning can restore it to what it was: the operation must scrape away some of the grains of paint. He would prefer two galleries, the true and head one at some little distance, so as to prevent the great access of persons to the really precious works there only preserved. The second, or more popular gallery would give, as it were, early lessons in art, or first studies. By selection of works it might be made an epitome of the grand gallery. In a National Gallery he would include what might be called the handicraft of a nation,—works for domestic use and ornament,—pots and pans, salt-cellars, knives, and everything that had any interesting art-element in it. In short, he would have a modern Pompeian gallery, and include all the iron work, china, pottery, and so on,—all works in metal,

all works in clay, all works in carved wood. Of course that involved much: it involved all coins: it involved an immense extent. There must be a distinction between the terms "museum" and "gallery," but "museum" he thought would be the right name of the whole building: a "gallery" was merely a room in a museum, adapted for the exhibition of works in a series, whose effect depends on their collateral showing forth. In course of his evidence, Mr. Ruskin spoke of the Vatican and Florence galleries, the Louvre, and others, as amongst those he had visited, but stated that he had not seen the Munich or the Dresden galleries, not having been in Germany for twenty years.

Mr. Hurlstone objected to the intermixture of sculpture and paintings under the same roof or in the same rooms. He had seen most of the national galleries of the western part of Europe, and should be decidedly averse to such a conjunction, as sculpture and paintings each required their own peculiar and nice adjustment of light. Sculpture had been injured by the union in instances within his experience. The same reasons which would urge the admission of sculpture united with painting, would equally, or even more urgently, demand the admission of numerous other departments of art, some more nearly allied to painting than sculpture; and why also should not the third sister art be represented by all the designs of architecture of different periods of the world, and casts from all the finest parts of architecture? He thought the same view of the object of a national gallery would equally demand that. Yet he saw no advantage in the juxtaposition of the three sister arts of painting, sculpture, and architecture, when it was essential that they should be kept perfectly distinct; and, under present circumstances, he should be very sorry to see those departments of art removed which were at the British Museum, where a gallery had been specially built for the purpose, and which was well adapted in so many respects for it. In short, he did not see any occasion to unite these different departments of art under one and the same roof, or any advantage in such union.

Mr. Fergusson was examined at considerably more than average length. The chairman, in the outset, mentioned that what they were at this moment more particularly inquiring into was the expediency of uniting the national sculpture with the national paintings. This, Mr. Fergusson said, he thought was extremely desirable. He had paid much attention to this subject and to the question of a site for a national repository of art. Such a repository, worthy of the nation, could only be had by a concentration of sculpture and paintings into one. His plan was to remove entirely the sculpture and the whole departments of arts from the British Museum, and either to build galleries for their reception in the rear of the present National Gallery, or to rebuild that institution on some other spot capable of providing accommodation not only for the pictures, but also for the statues of the nation, so as to join these two departments, and to make one great national repository of fine arts. He also suggested that the natural history department might be removed from the British Museum, and the mineralogical part of it sent to the Geological Museum at Piccadilly, while he would remove all the public records to the British Museum. The entire *litera scripta* of the nation would then be under one roof: grouped round that great reading-room, this would be the finest thing of its class in Europe. On the question of a site for the art repositories, the witness having had his attention pointed to Kensington-gore, said that in the scale of preference he put that fourth: he did not think it so good as either the Inner Circle of the Regent's-park, or St. James's Palace, or Trafalgar-square. The fifth site in his scale was Kensington Palace, but, like Kensington-gore, its increased distance counterbalanced its local advantages. The chief feature in the external aspect of such a building as he would suggest for the art-collections would be a ventilating tower for the purification of the internal atmosphere. He thought, however, that the injury inflicted upon works of art, and on paintings more particularly, by the metropolitan smoke and atmosphere, had been

very much exaggerated. As for the crowd, that was an element which must exist wherever you put the gallery—at Kensington-gore or elsewhere; and, if it be a cause of deterioration, you cannot eliminate it from the question; but, as far as the geographical site is concerned, the atmospheric influence of London was the point to be considered. As regarded his preference for Trafalgar-square, he would so far modify it as to say that, if it could be obtained, and supposing other objections to be waived, he considered the site where St. James's Palace and Marlborough House now stand a finer one. In this site he included the Ordnance-office, which is in the hands of the Government, and is to be removed at any rate. He would give the building four sides, which a great national edifice ought to have. He also thought there ought to be a street through from St. James's-square to the park, which would be a very great improvement.

Sir Edwin Landseer said he had felt a deep interest in the question of a site for the new National Gallery. He considered the present site, as the most central, to be preferable to any other, even indeed to that of the British Museum. Kensington-gore would be less convenient in every respect than the present site. He doubted the supposed advantage of a purer atmosphere at Kensington-gore: there were peculiar fogs which came up the flat there: he had had experience of the neighbourhood for years. He objected to the Regent's-park also, because there was a very heavy clay soil there. To the position of the present gallery he had no objection on the score of atmospheric influences, though it was certainly desirable to select such a site as should inflict as little dirt as possible upon the pictures. Those, however, at Buckingham Palace had, he thought, as dirty an atmosphere as any in London: the common cry there was that the ladies in waiting were always washing their hands,—that they never could keep anything clean for half an hour there; and in consequence they put veils over all the things that were precious; but, nevertheless, there are some of the most attractive pictures in the world there, which are as fresh and pure as ever. To prevent dust and smoke from accumulating was an easy process, which could be effected without any harm to pictures.

Professor Donaldson was of opinion that it was desirable to remove the National Gallery from Charing-cross, even from want of sufficient space, and including adjacent property. For pictures alone, portraits perhaps inclusive, there might be room, but, on account of the light, the site, though otherwise convenient, was not a good one, surrounded so much as it was by houses. The area requisite for a gallery alone would be about 1,000 feet by 500 feet, which would afford ample space for a central court. The site was a very fine one for a public monument, but not so particularly for a national gallery. The best position he considered, after thinking a good deal on the subject, to be Kensington-gore, which was certainly one of the best in the metropolis. The light, too, was much clearer there and less dense. Kensington Palace was an admirable site, but half a mile farther away. The inner circle, at Regent's-park, was a very bad site, as a clay soil produces damp, both on the surface and in the local atmosphere, and the clay there was 40 feet deep. Burlington House was a very fine position, but, like many others, too closely surrounded by houses. St. James's Palace and Marlborough House formed a very bad site, so low,—hardly above high-tide level. The Louvre, as recently improved, was the best example he could give of a gallery nearly perfect. He had not seen the Dresden or Munich galleries, and knew very little of Germany; but Bologna was the best picture gallery he saw in Italy. Florence was very good. There was a charming one at Venice, a circular one, like the Pantheon at Rome. The effect of the recent building at the Paris Exhibition was very pleasing: it was admirably disposed, and the light came in extremely well.

Mr. Digby Wyatt had thought a good deal about the question of site for the projected National Gallery, both at home and abroad. On general principles he decidedly preferred one in the heart of the population, for the educational purposes to which a National Gallery should be



made subservient. If the difficulties connected with the Trafalgar-square site could be wisely and effectually overcome, that would be the best the metropolis could possibly afford. The disposition of the new Dresden Gallery, which he had seen, could be well adapted to a site in London. Still the Dresden is not so good as that of the Pinacothec at Munich, the separation of cabinet and gallery pictures not being so judicious, nor the arrangement of the lighting quite so good. Kensington-gore is too far removed for convenient access to the lower and middle classes. He should be sorry to see glazing of pictures introduced: other means might be used to palliate the deleterious effects complained of, such as wire-gauze in the air ducts and ventilating valves, and open floors, on Sir Joseph Paxton's principle, frequent wiping of these floors with damp cloths, &c. The pictures might be covered with glass when not under exhibition, as by night, when gaseous vapours so much abound in the metropolis. The danger from breath and dust was no greater at Charing-cross than elsewhere. He wished to see the new National Gallery erected in the midst of London for another reason than those to which he had already referred, namely, that our metropolis is defective in fine buildings and pictorial effects, and we should rather have a noble building in the place of a number of mean houses than leave these in the heart of the population, and put our noble building, as it were, "outside the walls." He would rather expend a large sum for a limited site in the metropolis (though 50,000*l.* an acre was rather an exaggerated estimate), than give the same sum for a large estate out of town. Trafalgar-square, as a site, he regarded as No. 1. Next he would take Devonshire House: it was reasonably accessible and beautifully open, and had many decided advantages.

In an Appendix to the Report and Minutes of Evidence, there are various letters, reports, returns, and plans connected with the main subjects of inquiry and consideration; and, in the minutes of meetings of the Commission itself, there is a paper put in by Professor Cockerell, stating the number of superficial feet occupied by the National Galleries of London, Berlin, Dresden, Munich, and Paris. The following is a copy of this document:—

London .....	9,720 feet superficial.
Berlin .....	24,200 "
Dresden .....	34,500 "
Munich .....	48,000 "
Paris .....	82,000 "

#### VISITS TO THE BROMPTON MUSEUM.\* COLLECTION OF ANIMAL PRODUCTS AND THEIR APPLICATION TO INDUSTRIAL PURPOSES.

DURING the year of the Exhibition of 1851, it was the wish of the Royal Commissioners to form a permanent collection of matters connected with trade and manufactures, which would serve as a means of reference for commercial, scientific, and artistic purposes; and so cordially was this idea approved of, and so many specimens of various kinds were offered, that it was proposed that the collection should be extended to all imports and exports of the world, so that men of business might have the opportunity of examining and practically testing samples of the articles in which they traded. It is to be regretted that various circumstances prevented this scheme from being carried into execution.

For six years the mass of materials which were presented for the above-mentioned purposes, had remained unpacked in the rooms of Kensington Palace. On careful consideration, it was determined for the present to make perfect one department of the trade collection, and that which heads the present article having been selected, the specimens have been arranged in the east gallery of the Brompton Museum by Mr. H. F. Read, under the valuable guidance of Professor Playfair.

In order that the large remaining portion might not be lost, the minerals, &c. have been gathered together, and liberally supplied to the scientific institutions of many foreign countries, and to numerous free museums and educational establishments at home; and it should be generally known, that the stock of specimens for distribution is still very large, and that they may be had on application by societies, which have for their object the advancement of general knowledge.

The arrangement of animal products, to which we

have already had occasion to refer, is excellent, and the full descriptions which are written upon the objects render them not only very useful, but also of much interest to the ordinary visitors. This museum is divided into various compartments, arranged systematically; and in order to give our readers an idea of the plan adopted, we will commence with Wool.

By means of a clearly-printed placard, headed "Wool and its Products—Class I. Textile manufactures and clothing—division first—Wool,"—we are told that "Wool is modified hair; most quadrupeds possess a woolly hair as an underclothing, hidden generally by the outer course hair. In the wild sheep there is much of the woolly hair, and in the domesticated breed the fleece is modified by crossing, climate, and pasture." \* \* \* Within a certain space are the heads of the various wool-producing sheep, and the fleeces of the animals from various parts of the United Kingdom, as well as from Spain and Portugal, Russia, America, Van Diemen's Land, Egypt, &c. A fine fleece of a sheep of the Leicester breed from the latter place, is remarkable for showing the marked improvement in the quality of the wool which has been made by the transportation of the animals to a different climate.

The various fleeces are ranged side by side, so that it is easy to compare them with each other, and observe the effect of cross breeding, &c. The weight of each fleece, the ages of the sheep at the time of shearing, and other particulars, are marked. From the raw materials we can pass to the varied stages of the manufacture of the finest and other sorts of wool in cloth. Here are specimens of the *Teasel*, that well-known prickly plant, so useful in preparing the wool, which many Londoners have heard of, but few seen. Many attempts have been made to provide a substitute for this natural implement, but hitherto without success—the best Teasels are imported from France. Close by the numerous specimens of the raw materials are the woollen cloths, produced at home and abroad. Amongst these we noticed a strong useful kind of plaid, produced at the Cascades establishment, Van Diemen's Land. The rougher materials for blankets, &c. are in like manner collected.

From wool we turn our attention to *silk*, and first notice the large number of moths from all parts of the world which (in different degrees of value) produce the raw material of this useful fabric,—near each moth is the silk which it produces. Some of these specimens are of large size, and so gaily ornamented with rich forms and colours, that many would pass over without notice the small homely-looking, but much more useful creature, the "*Bombyx Mori*," which is the chief silk producer. Properly arranged are the various silks of India, China, Turkey, Egypt, Cape of Good Hope, Russia, France, Italy, England, Norway, &c. In the last-named country considerable quantities of silk of a fine quality have been lately produced, and this has suggested the idea that raw silk in great quantities might be profitably produced in England, Ireland, and parts of Scotland; for it is now known by experience that the silkworm thrives in Norway, where the climate is much colder than with us. We should like to see the mulberry-tree more extensively cultivated, and the experiment fairly tried. The culture of the silkworm might be made at little trouble to add considerably to the income of many of the British cottagers.

In order to make this department of the Brompton Museum as explanatory as possible to the general visitor, a case of silkworms is placed here with the caterpillars actually at work, and ranged round in the same manner as the wool of the manufactured articles, dyes, &c.

Next we come to mixed fabrics of silk and other animal materials; then to the raw materials and preparations for carpets. After that to the different kinds of alpaca—black, white, brown, fawn, and grey, and the manner of its manufacture. Close by are the marketable goods of mohair; and adjoining are representations of the animals from which the materials are obtained.

Next is camels'-hair, some from Russian villages. From this a very expensive material for dress is made, which is remarkable for its pliancy and the small space into which it can be folded. From this we pass to horse-hair, from America and other places—some rough, other kinds drawn in lengths and coloured, and adjoining are beautiful personal ornaments, cloths, brushes, crinolines, and so forth. \* We then come to human hair, which we are told is an important article of commerce. Here we note the material as brought from parts of France, Flanders, Germany, &c.; and examine the stages of its manufacture, and the manner in which it is made into cunningly-devised head coverings for both sexes. We must, however, move on, after observing that the various products which we have already mentioned are obtained from the animals during their life. We now turn to others, which are gathered after death.

Whalebone is well illustrated, and the visitor is told that this important article of commerce, cannot properly be called bone, but is actually a description of hair—coarse certainly in fibre, but still hair, and this is shown by microscopic drawings of parts, immensely magnified; and we may here mention that there are similar drawings adjoining most of the other fabrics. It will surprise many to see the numerous uses to which whalebone is applied. Amongst them may be noticed coloured cockades, which look like ribbon, but are far more durable, which deck the heads of carriage-horses on state occasions.

Her Majesty has sent several fine specimens of the ivory of the elephant, hippopotamus, narwhal, walrus, and sperm whale, some of which are cut into sections. Below are numerous examples of manufactured articles.

Horns of the buffalo, ox, rhinoceros, &c. &c. with manufactured articles from them, are also exhibited and explained. Amongst the latter are old drinking-horns, lanterns, spoons, and other articles of domestic use, which are getting rare.

The plumage of birds has not been omitted. Here are cocks' feathers, dyed and arranged, for decking the head-coverings of the military. The skins of sea-birds are curiously formed into ladies' muffs. Amongst the objects, a large group of flowers, by W. J. Maguire, is well worthy of notice, in consequence of the wonderful copy of nature which he has been enabled to make with such a material.

Oil, tallow, lard, &c. are duly represented, but we must pass on to leather, a most important article of English manufacture and consumption.

To enter into anything like adequate details of the fine collection of tanned skins which are here displayed, would require much more space than we can spare; it must, however, be mentioned, that they are clearly arranged, and named, both in Latin and English; for instance, the quadruped (four hands), the plantigrade (two walkers), &c. Here are the ermine, beaver, &c. some small skins of the Cape beaver being worth from twenty-five to thirty guineas; and it should be stated that this department is greatly indebted to Messrs. Nicholas and Son, and also to Mr. E. B. Roberts, for very extensive contributions. We are tempted to linger amongst the skins of lions and tigers, which are here both in a natural state and also made into various kinds of dress; but must move on, and notice the ingenious means which have been devised by Mr. Read, for showing the wet processes of tanning. Amongst the oily matters may be noticed a case of transparent liquid, called glycerine, an article which during the last three or four years has come into considerable notice for its use in medicine, and as a cosmetic. One of its properties is that of preserving any animal substance from putrefaction; and Mr. Read having found, by experience, that fish, &c. might be kept in this material for years without change, he has had the different wet processes of tanning shown in glass cases containing glycerine. In addition to the above are skins too numerous to mention, in different stages of tanning and currying. Amongst the most curious are some hides tanned in Egypt, with salt; excellent leather made from seal-skins. The skin of the porpoise has also been tanned and bleached, and many are surprised at the fine grain and tough quality of the leather.

We must pass over with a brief notice the collection of shells, the application of mother-of-pearl to manufactures, specimens showing the artificial production of pearls by the Chinese, and other matters.

As goldbeaters' skin is such an important substance in the ornamental arts, we must not omit to mention that it consists of the prepared membrane which covers the gut of the ox. Dried and withered specimens fail to give any idea of this material. By means of immersion in glycerine its nature and the process of its manufacture is clearly shown.

Many visitors stop to examine the case which contains the twenty different processes required to complete the manufacture of a beaver hat. We have, however, almost exceeded our limits, yet we feel we have, even now, but glanced at this valuable collection. We have omitted notice of the manufacture of vellum and parchment, the animal dyes, the large variety of laces, glues, book binding, binding, embossed and decorated leather, glove-making, and fifty other matters. We must not, however, neglect to mention valuable specimens of the various kinds of guano and other manures, both natural and manufactured, and also the fossil guanos of Kent. We can here trace the processes by which bone is converted into phosphorus, ammonia, the conversion of waste wool, &c. into Prussic blue.

This well-arranged collection, when more generally known, will be the means of diffusing much useful knowledge, and we trust that we have said enough to induce many to resort to it as a means of instructing the youth under their care in the origin and use of those common things which are so valuable; visitors of graver years will also find much to learn.

\* See p. 406, ante, &c.



## THE BRITISH ARCHAEOLOGICAL ASSOCIATION IN NORFOLK.

We left the members of this association thoroughly tired out by their excursion to King's Lynn.\* I now remain for us to resume the narrative of their proceedings on their visit to Great Yarmouth and the neighbourhood. A special train left Norwich with the party at ten o'clock on the Thursday morning (Aug. 27), and the visitors arrived at the town-hall about eleven, where they were received by the mayor (Mr. C. C. Aldred) and other local residents. The mayor deputed the task of conducting the association about the town to Mr. C. J. Palmer, the deputy mayor, and the well-known house occupied by this gentleman—No. 1, South Quay—was first inspected. This mansion was stated in some printed particulars, supplied, to have been built in 1596, by Benjamin Cowper, esq. The date and initials of Mr. Cowper's name are carved on the dining-room chimney-piece. The house passed afterwards into the possession of Mr. John Carter, whose son, Benjamin Carter, married Mary, daughter of General Ireton, by his wife Bridget, eldest daughter of Oliver Cromwell. Bridget, another daughter of Ireton, married Thomas Bendish, esq. of Yarmouth. Carter took a leading part in political affairs, and was one of the bailiffs when, in 1642, the town declared in favour of the Parliament; and he promoted a subscription in money and plate for the defence of the place. In 1648 he signed the "National Covenant," and after the execution of Charles I. he took the engagement to the Commonwealth. According to Clarendon, on the authority of officers who had been present, there were "many consultations what to do with the king" previous to bringing him to trial; and if we may believe tradition, the final meeting for that purpose took place in a large chamber of this house, now used as a with-drawing-room. The story is told by Mr. Hewling Luson, who was connected with the Cromwell family, in a communication addressed by him to Dr. Brooke, of Norwich, in 1773, published in "Hughes's Letters," vol. iii. p. 168, and in "Noble's Memoirs of the Protectoral House of Cromwell," vol. ii. p. 340. He says:—"When I was a boy, they used to show a large chamber in the house of Mr. Carter, which had also been the house of his father, in which, as the tradition went, the infamous murder of Charles I. on the scaffold was finally determined. A meeting of the principal officers of the army was held in this chamber: they chose to be above-stairs, for the privacy of their conference: they strictly commanded that no person should come near the room except a man appointed to attend: their dinner, which was ordered at four o'clock, was put off from time to time till past eleven at night: they then came down to a very short repast, and immediately all set off post, many for London, and some for the quarters of the army." Mr. Nathaniel Carter died in 1722, aged 88. He must, therefore, have been about fourteen years of age when the meeting took place in his father's house. A considerable personal intimacy seems to have existed between those who compassed the king's death, and the leading inhabitants, who were thorough Independents, so that there is nothing improbable in the selection of Yarmouth for such a conference. A profusion of paintings is scattered through the house, and the visitors having examined them, Mr. Palmer directed their attention to some merchants' marks on a building near at hand, and also to the moulded ceilings in some of the other houses on the quay.

The party having traced the walls which formerly protected the town, next proceeded to the Toll-house Hall, the scene of many municipal and legal wrangles. Here a number of old charters granted to the town were exhibited. The first of these was granted by King John, who erected the place into a free borough, on condition of its paying a fee-farm rent of 55*l.* annually for ever. Other charters of confirmation were granted by Henry VIII., Edward VI., Mary, Elizabeth, James I., Charles II., and Anne. One of the charters granted by that "merry monarch" was highly illuminated, and had an oil portrait of the king. Other charters were also illuminated, and one of the most ancient—a decision between the Baron of the Cinque Ports and the burgesses of Yarmouth—had been patched and mended, the patches themselves being more than 400 years old. Another curious document was a judgment relating to some alleged contraband herrings which had been seized, as having been brought from abroad, but which the fishermen of Yarmouth successfully contended had been taken within the limits of their liberties. Mr. W. H. Black rendered his usual valuable assistance in deciphering these venerable and rusty documents. The church of St. Nicholas was next visited, and Mr. Palmer offered some remarks on the fine old structure which was restored in 1848. This church was erected by the

indefatigable Herbert de Losinga in 1123, and was greatly enlarged in 1250, when it boasted seventeen chapels or oratories, each supported by a guild. At present the church consists of a nave, two aisles, and a transept. It affords sittings for a vast congregation and very large numbers take part in the Sunday and daily services. The extensive graveyard, where the "rude forefathers of the hamlet sleep," is thickly covered with a wily mouldering tributes in memory of preceding generations.

But there is not much opportunity for moralizing in archaeological excursions: inexorable time is ever "moving on," and the word is ever "forward." Forward, accordingly, we go to the ruins of Caistor Castle, about three miles from Yarmouth. This was a castellated mansion, formerly a residence of Sir John Fastolf, and, according to tradition, it was finished by Sir John with a part of the money which he received for the ransom of John II. king of France, whom he took prisoner at the battle of Verneuil, in 1424. The ruins give indications of a mansion at once large and strong. The house is supposed to have formed a rectangular parallel gram, the south and north sides being larger than the east and west. An embattled brick tower at the north-west corner, 100 feet in height, is still standing, and adjoining this tower was a dining-parlour, 59 feet long and 28 feet broad, the great fire place of which has been observed. The west and north walls also remain, but here and there modern industry has converted the old remains into part of a cart-shed, or some other agricultural building. The dull waters of the moat have been deprived of their original limits, and the glory has departed from a spot which was represented in a paper read by Mr. Pettigrew to have once been a scene of unusual splendour.

From Caistor the company passed on to the neighbouring Roman encampment at Burgh, about four miles W.S.W. of Yarmouth. The property on which the remains stand has recently passed into the possession of Sir J. Boileau, the president of the Norfolk and Norwich Archaeological Association. Mr. Pettigrew read a paper on the remains, which include some massive walls, built for the protection of the encampment, and still in a tolerable state of preservation. The space enclosed is nearly quadrangular, and three walls, which have suffered here and there in the progress of time, still remain as monuments of Roman industry. Sir John Boileau stated that excavations had discovered a fourth wall, but on this point some discussion took place, Mr. Vere Irving expressing an opinion that there might have been a quay wall extending to the river, but that no defensive fourth wall had ever been erected. There was, however, a general concurrence in the belief that the spot was once one of the most important Roman stations in the kingdom. We have before now spoken of it.

The proceedings of the day were concluded with a dinner at the Yarmouth town-hall (at which the mayor presided), and a conversation at the house of Mr. Palmer. It was midnight before the members were conveyed back to Norwich.

On Friday, the attractions of West Norfolk again lured them away from the old city. The Norfolk Railway conveyed them to the extreme limits of the "system" at Fakenham; and from this place the excursionists proceeded in various vehicles to Little Snoring, Great Snoring, Binham, Walsingham, and East Barsham. A visit to East Dereham Church—where the poet Cowper "sleeps well,"—was also put down in the programme, but the arrangement was abandoned on the ground that the pressure of time rendered it impossible. Mr. C. E. Davis examined the church at Little Snoring, and stated that the whole of the tower was Early English, and that though it was now separate from the rest of the church, it was once the west-end tower of a building which formerly existed. The church itself was of a rather later date. At Great Snoring the party inspected the rectory, which is a fine specimen of ornamental brickwork, erected by the Shelton family. They next proceeded to the church, which is generally in the Perpendicular style, and the chancel entirely so. At Binham the company devoted an hour to an examination of the ruins of the Priory. With the exception of the west front, the whole of this building is supposed to have been in the Early Norman style. The original structure was erected in the reign of Henry I. The nave and north aisle have been used as the parish church. The pointed style was adopted in the exterior of the western front, which contained, in the lower part, a great central and two side doorways, with blank arcades between them, a large centre, ornamented with mullions and tracery, being over the former. The company then passed on to Walsingham. On the way, one of the "frys," which was occupied inside by Mrs. Prest, of London; Mrs. Grison, of Wingham; Miss Beever, and the Rev. Mr. Fisher; and outside by Sir T. Beever and the Rev. W. Grison, cipsized against a bank. Sir T. Beever seized the horses' heads before any further mischief could be done; and the frightened

occupants of the vehicle were extricated after having sustained no injuries besides a few bruises. At Walsingham, the party received considerable additions, being joined by Sir Willoughby Jones, the Rev. D. Lee Warner, the Rev. J. Lee Warner, the Rev. G. Brydges Lee Warner, the Rev. Septimus Lee Warner, Mr. H. Lee Warner, the Hon. and Rev. D. Astley, and other gentlemen and ladies. Papers on the beautiful Ruins of the Priory, were read by Mr. Pettigrew and the Rev. J. Lee Warner. The place must have been one of very great importance in old times, for the celebrated Erasmus, who visited it in 1511, declares its magnificence to have surpassed everything he had before seen. *Divorum sedes! adeo gemmis, auro argenteoque nitent omnia!*

The Rev. J. Lee Warner, in a paper read before the Archaeological Institute at Cambridge, refers to a ballad in the Popsyan Library, which gives a relation of the history of the Priory. It was founded by Richolde, mother of Sir Geoffery de Favrachas, and its establishment is ascribed to the twelfth century, as the principal gifts were made to it in the reign of William Turbus, Bishop of Norwich, from 1140 to 1174. Richard Vowel was the thirteenth and last prior, the Priory being surrendered in August, 1538, to Sir William Petre, commissioner for the visitation of monasteries. Portions of the Priory are attributed respectively to the Norman, Early English, Decorated, and Perpendicular styles. Of the earlier or Norman period but little now remains, and it consists of a passage at the south-east corner of the cloisters. In the "Perigrinatio" of Erasmus, it is stated that a chapel stood apart from the church for the worship of the Virgin; but remains of this chapel have been sought in vain. Having discussed the architectural features of the remains, the company proceeded to the discussion of a cold collation, provided by the hospitality of the proprietor of the estate, the Rev. D. Lee Warner.

The Rev. G. Brydges Lee Warner occupied the chair, and justice having been done to the good cheer set before the party, a few pleasant speeches of a complimentary character were made, the healths of the hospitable host and other members of the amiable Lee Warner family being, of course, duly honoured. After a hurried visit to the church—which contains a font of an octagonal shape, covered with sculpture representing buttresses, pinnacles, niches, crocketed pediments, figures in basso rilievo, &c. and elevated on a plinth of four steps, the exterior faces of which are also decorated with mouldings, &c.—the company returned to Fakenham, stopping on their way at East Banham Hall, a very fine specimen of ancient brick architecture. Blomfield assigns the erection of this interesting hall to the time of Henry VIII.; but it is probably anterior to that period. The lower entrance or porter's lodge offers remains of Henry VII. The hall is now appropriated as a farm-house. After devoting about ten minutes to an examination of its attractions, the party passed on for Fakenham, and the railway carried them back to Norwich.

In the evening Mr. Wright read some extracts from the records of the corporation of Norwich; Mr. Pettigrew made some comments on the history of Sir John Fastolf, the original owner of Caistor Castle; and Mr. Vere Irving, unable to enter into the subject of "Treasure-trove," as he had not his notes with him, offered a few observations on the remains which Norfolk possesses of ancient Roman camps and stations. Mr. Pettigrew closed the proceedings of the Association in Norwich by expressing the members' thanks for the kindness they had experienced in the city.

Saturday morning witnessed the Association en route for Ely. The remains of the Abbey at Thetford were set down in the original programme as objects to be examined, but from various causes it was deemed advisable to devote the whole day to Ely Cathedral. The sacred edifice was reached about two o'clock. Mr. C. E. Davis had prepared a paper upon the salient features of the fabric, but he preferred to give his explanations *visu voce*, and at various points. As we shall probably print the paper in *extenso*, on another occasion, we pass over his observations, and in lieu we will quote a few extracts from a communication which appeared recently in the *Cambridge Chronicle* (a pleasant county journal), on the progress made in filling the eight lancets of the great east window with painted glass, an object for which the late Bishop Sparke gave 1,500*l.* stock in Reduced Three per Cents. "The eastern lancets," says the *Chronicle*, "are now completed by Mr. Wallis, and the representatives of the founder have good reason to be satisfied with their prudent resolution to defer the execution of this great work until they were fully satisfied it would be such as would make it a monument worthy of the conspicuous and important position which it occupies. The general effect produced by it is magnificent: the three lower lancets in particular present that happy combination of sparkling brilliancy of colour with that somewhat

\* See p. 503, ante.







## NOOKS IN THE TEMPLE, LONDON.



Inner Temple-lane, "Dr. Johnson's Staircase."



Harc-court.

parts the original lead glazing remains, but in most instances it has been replaced by the unsightly window-sashes of about a century back, which show that timber at that time was of less consideration than glass: some of the bars are from  $1\frac{1}{2}$  inch to 2 inches in width.

The hall of the Inner Temple is a modern structure, in imitation of the Gothic, which does not, however, bear a contrast with the building of 1570. In the hall, and some other apartments of this inn, are portraits of Queen Anne, George II. and his queen; the latter has a charming face. There are also several legal worthies; amongst them, Selden, Denman, and Ellenborough. In the Parliament-chamber, as a large and elegantly fitted room in the building is called, there is a large collection of books, which contain the records of Parliament during a number of reigns: some of these are as old as the time of Richard II. These books were in wooden and parchment covers, very much decayed, but they have been substantially rebound.

Returning for an instant to the church, there is, on the north side of it, a small burial-ground, in which many interments have taken place. The level has been raised to a considerable height; and a flight of steps leads down to a chamber, now used as the vestry. In this yard are several memorials, and amongst them is one which records that Oliver Goldsmith lies buried close by. No stone or other object marks his resting-place: in fact, all the graves are levelled, and the ground has a somewhat neglected appearance, which forms a contrast with other places within the precincts. Those who are anxious to know the spot where one of the most truthful and kindly-hearted of our writers rests, would seek in vain. As we understand, however, Goldsmith's grave is at a short distance from the brick wall which surrounds the ground, directly in front of the steps of the vestry. Formerly a tree shaded the place: there is, however, none there now. Let us suggest that some indication be set up by which the admirers of the author of the "Vicar of Wakefield" and "The Traveller" may be able to recognise his last home.

To end as we began: an old house, which serves to recall to mind great men who have passed away, and gives both the heart and the head something to do, is not rubbish.

## DOMESTIC ARCHITECTURE IN ROUEN.

ROUEN, the capital of Normandy, is one of those towns of France in which can be seen many remarkable examples of domestic architecture; though there are not to be found here so many of those interesting houses, more *Romano*, of the eleventh and twelfth centuries as there are at Auvergne, in the south of France, and especially at Cluny; in the midst of which latter stands the colossus of all Christian monuments, the ruins of the ancient abbey of Cluny.

If there were formerly many examples in Rouen of houses of this period, they have disappeared. We still find houses of the fourteenth and fifteenth centuries which fall day after day into the hands of the demolishers. The houses of this period have the upper stories overhanging the lower; the face of the walls being covered with devices, either arranged lozenge-wise or as trefoils, stars, leaves, or shells. The gable end next the street is always elegantly decorated.

De la Guerière's "Description des Maisons de Rouen;" "L'Histoire de la Ville de Rouen," by M. Faïn; Pugin's "Series of Ornamental Timber Gables;" and "Les Edifices de Rouen, tels qu'ils étaient au XVI. Siècle," by D. Jolimon, may be usefully consulted by those who would study the subject.

The old houses, as we have said, are daily disappearing: they fall into ruin for want of repairing and attention, and are made to give place to modern structures, which, so far as regards the general disposition and the comfort of the interiors, more fully meet the requirements of the occupiers, but which in point of art will furnish little for the admiration of the next generation. By way of consolation, however, to the lovers of architectural antiquity, let us say, that since the formation of the Archaeological Museum at Rouen, through the care of M. Beville, a well-informed antiquary, all the remains of the Middle Ages, not only of the town itself, but of the department generally, are preserved in the Museum as in their original position. This small museum has become as valuable, pertaining to the Middle Ages, as the museum at Naples, which shows us in so instructive a manner the domestic antiquities of Herculaneum and of Pompeii.

To the sixteenth century, a large number of the wooden houses gave place to elegant structures in stone, raised in consequence of the increasing prosperity of the old and industrious inhabitants of the town. The Hôtel du Bourgtheronde, and some of the interior courts of private mansions, bear witness even now to the taste of the architects of that period; and those examples that we shall successively give of the architecture of the first half of the eighteenth century, examples chosen amongst the most beautiful specimens of the period which exist at Rouen,—show that the artist had not been, as is too often the case in our day, a stranger to their production. Of Rouen Medieval, we have already given many fine examples. On the present occasion we select the works of a more modern period.

## A House in the Rue de la Grosse Horloge. No. 38.

This house, one of the most elegant in the town, is of the period of the seventeenth century, and is remarkable for the varied disposition of the windows in its two stories. It recalls the architecture of the Renaissance and Philibert de l'Orme, Jean Bullant, Pierre Lescoq, and others. Unfortunately the roof of the house is wanting, whereby the edifice loses much of its effect. The Museum of Antiquities, of which mention has already been made, has preserved in its court a small *girouette* in lead, which terminated the gable of the house. The arrangement of the tablet at the foot of the window in the middle of the second story, shows a certain amount of study. The house bears date 1620.

## House in the Rue Percière, near the new Market.

This house, of which we regret not having been able to see the interior, as it contains, they told us, a very fine staircase, bears date 1598, and is remarkable for the finish of its ornaments. Upon the raised part of the middle of the façade of the first story there is sculptured a vase, from which a floral decoration is continued through the whole height of the panel. In general, in houses of this period, the mouldings are very simple.

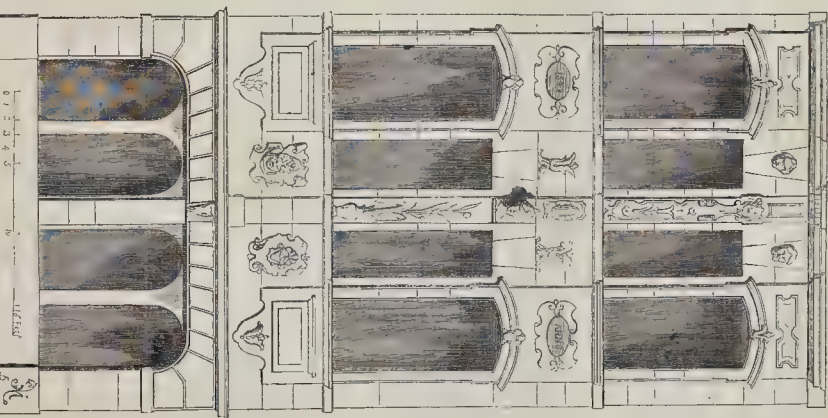
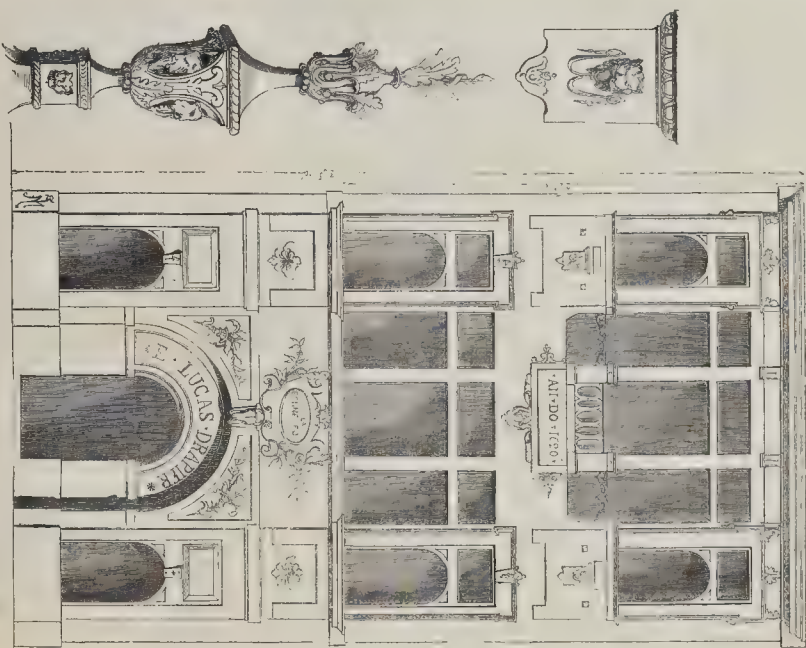
IMPROVEMENTS IN PAINTERS' BRUSHES.—Messrs. Greenslade, of Bristol, brushmakers, have specified a patent for improvements in painters' brushes. The important features in this invention are considered to be the saw cuts, or openings, conjoined with the plates, whereby the handle may be firmly wedged and secured to the brush part.



DOMESTIC ARCHITECTURE IN ROUEN.

**Rouen**

*House of the XVII<sup>th</sup> Century.  
Rue Ponce*



**ROUEN.** HOUSE OF THE XVII<sup>th</sup> CENTURY. 2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



## CHURCH-BUILDING NEWS.

**Caversham.**—The parish church of Caversham is about to be reopened. The huge old pews, which disfigure so many of our rural churches, have been swept away, and uniform ranges of benches, of moderate height, now give accommodation to one-third more than the church used to hold. The gallery in the north-west corner has been removed, admitting light and air to the seats beneath; and the organ is partially in recess on the north side. A small vestry has been erected on the same side, to which admission is gained by a flight of stone steps. The improvements have been from designs by Mr. A. Billing, and the work has been carried out by Mr. Jas. Matthews, builder.

**Etchingham.**—The restoration of Etchingham church, from designs furnished by Mr. W. Slater, of London, being completed, the edifice was reopened on the 27th ult. The large east window has been filled with stained glass by Mr. J. R. Clayton, of London, the treatment comprising subjects and angels in canopied and other medallions, on a groundwork of floreated ornament and grisaille. The pieces of ancient glass retained in the various windows of the church were restored by Mr. Miller, of London. The builder by whom the general works were executed is Mr. Norris, of London, and the carved *bas-relief* on the front of the pulpit, representing St. John preaching, was executed by Mr. James Foreyth, likewise of London.

**Landfield.**—Difficulties with respect to the site of the new chapel, according to the *Brighton Gazette*, have been set at rest, and the spot selected is where the present chapel stands, with an additional piece of ground adjoining. The contract is taken by Mr. Jas. King, builder, who has commenced taking down the present chapel. The design of the new chapel is Modern English, and, when finished, it will afford sufficient room for the accommodation of 500 hearers, some 200 more than the present one.

**Coleorton.**—The Leicester Advertiser announces the consecration of the new cemetery at Coleorton. The chapel is of the Decorated order; all the windows and dressings are of freestone, and the other parts of granite. The roof is truss rafters, covered with tiles. The arches over the windows are red and white stone in alternate courses, the red stone being procured from Alton Towers. The ground is enclosed by a wall. The timber, stone, &c. as well as the ground, were given by Sir G. H. Beaumont, Bart. The builders were Mr. Elliott, of Ashby, and Mr. Walker, formerly of Coleorton. The drawings were furnished by Sir G. Beaumont and Mr. Heward.

**Belgrave.**—The parish church of Belgrave has been restored and re-opened. The old singing-gallery has been removed, and its removal has brought to view the ancient Early English tower arch, which has been restored, and two carved corbels added at the springing. A new organ, by Walker and Son, of London, has been erected. The pillars and arches of the nave, the pilinths and bases of which had been sadly cut and mutilated for the insertion of parts of the unsightly pews, have also been cleaned and restored. The plastering, where it had gone to decay, has been taken off the interior walls, and replaced with new stucco work. The floors have been relaid with ancient gravestones, excepting the middle aisle and nave, which have been laid with Staffordshire quarries. The font, coeval with the church itself, has been restored to its original character. The old wooden pulpit has been replaced by a carved stone one. The restorations have been carried out under the superintendence of Messrs. Lindley and Firth, of Leicester. The church has also been re-seated with open sittings by Mr. Hobson, of Belgrave.

**Doncaster.**—The contract for the erection of St. James's Church for the accommodation of the workmen of the Great Northern Plant in this town has been given to Mr. Wilson, of Grantham, builder. It is intended to lay the foundation-stone during the visit of the Yorkshire and Lincolnshire Architectural Society, on the 22nd or 23rd instant.

**Blackburn.**—A mortuary chapel to St. Alban's Roman Catholic Church here has been recently erected and opened for service. The dimensions of the chapel internally are, 30 feet long, 15 feet wide, and 25 feet 6 inches to the ridge tree. The style is Early Decorated. Each end of the chapel has a three-light window with tracery head. The side windows are of two lights each, and all of double tracery. The one nearest the altar is filled with stained glass, as a memorial window to the Right Rev. Dr. Sharples, who for eleven years was pastor of the congregation. The east window is to be filled with stained glass to the memory of the late Rev. Peter Kye, about ten years parish priest of St. Alban's, as well as first rector of that place. The idea of a mortuary chapel was suggested by his death. The chapel being placed parallel with St. Alban's Church, and the whole of one side being open, all persons sitting in it have a

full view of the sanctuary in St. Alban's. The side wall of the old chapel has an arcade of three arches, the centre one being occupied by a carved Caen-stone screen, and the two sides by low metal-foiled rails with vine branches in the spandrels. The roof is boarded diagonally, and is carried by two principals, filled with tracery in the spandrels. These rest upon pillars supported by carved corbels in the side walls. The altar is of Caen stone: the table is supported by two pillars of black marble, and the span underneath is occupied by the figure of the dead Christ. The recess is divided by foliated arches, supported by black marble pillars, into three compartments, filled with monograms: the spandrels above are filled with quatrefoil diaper. The floor of the sanctuary is laid with Minion's ornamental tiles; the centre aisle with plain tiles by the same maker. Immediately before the sanctuary is placed an ornamental rail of twisted brass, borne upon iron pillars, from the tops of which spring vine branches and leaves of polished brass work. The architects were Messrs. Harrison and Hughes, of Preston. Mr. Armistead, of Preston, was the contractor for the entire work, except the stained glass and the figure, which were supplied, the former by Messrs. Pilkington, of St. Helen's, and the latter by Messrs. Barff and Co. of Preston. The brass and metal ornaments were made by Messrs. Seward, of Preston.

**Margton.**—We understand, says the *Montrose Review*, that it has now been finally decided to take down the Free Church here, which has proved a most unsuccessful piece of architecture, having neither beauty to attract nor solidity to compensate for deformity. Notwithstanding all the difficulties the congregation have had to contend with, they have resolved to proceed with the erection of a new church, being greatly encouraged by the liberality of the Earl of Southesk, through whom they have received plans from Mr. Bryce, of Edinburgh. The church to be erected is in the Gothic style, with a spire of from 70 to 80 feet in height. A gallery is to be placed in one end of the building, and a vestry upon the north-east corner. The manse is now in course of erection.

**Quedgely (Gloucestershire).**—In the account of the opening of the new church here, the names of the architect and the builder were not mentioned. The former was Mr. H. Goodyer, of Guildford, and the latter Messrs. W. Wingate and Son, of Gloucester.

## CHURCH RESTORATIONS.

**Newbourn, Woodbridge, Suffolk.**—This church is being restored throughout. The perpendicular hammer-beam nave roof has been repaired and reinstated; the chancel roof, formerly hidden up by a plaster ceiling, open and restored; the church benches throughout in the style of some few old benches that were still remaining, with tracery and buttressed ends. A new three-light perpendicular west window is about to be fixed, and the remainder of the windows, doors, &c. cleaned down, and the stonework of them, where perished, restored. The external rough cast is being scraped off, and the rubble walling under it pointed up and made good. The interior walls of the church are being re-stuccoed. A new pulpit and reading-desk will be added as soon as funds will permit. Messrs. Morgan and Phipson are the architects; and Mr. Ringham, of Ipswich, is executing the work.

**St. Lawrence, Ipswich.**—The chancel of this church is about to be partly rebuilt and otherwise restored, under the superintendence of the same architects. The east wall and buttresses have become so dilapidated as to involve their being entirely pulled down and rebuilt. A new four-light Perpendicular window, of rather elaborate tracery, similar in design to the original window, will be inserted. An unsightly gallery that now obtrudes itself across the chancel arch will be entirely swept away, and the chancel arch will be entirely swept away, and the chancel benches with oak benching running east and west.

**Winston, Debenham, Suffolk.**—The chancel of this church having become somewhat out of repair, the Dean and Chapter of Ely, who are appropriators of the rectory, have urged upon the lessee of the great tithes (Mr. Thomas Pettit) not only to put it in a good and sound state, but to restore it in a proper and ecclesiastical manner, and have promised to bear some portion of the expenses in the event of his doing so. Mr. Pettit has therefore resolved to meet their wishes, and has had plans and specifications prepared by Messrs. Morgan and Phipson. The works will consist in partly rebuilding the east end, now brick-work, and putting in a new four-light window; easing the outside walls and buttresses with flint-work; and repairing the side-windows, priest's door, &c.; restoring tie-beam roof and old oak benches and flooring. A new oak altar-railing also forms part of the work. The whole will be executed by Mr. Ringham. After the chancel is completed, it is to be hoped that the good example set will induce the parishioners to bestir themselves about the nave, which is in a sad state of dilapidation.

## THE PUBLIC OFFICES COMPETITION.

## THE PARKS.

NOTWITHSTANDING the imposing announcement of last year, and the extraordinary display in Westminster Hall arising therefrom, the nature of the instruction has marred all,—the year is lost, the money to be paid for premiums lost, and the patience and valuable time of the profession wasted—added to which, the urgent wants of the Government are altogether thrown over. If, as is now supposed, the matter is to be taken up *de novo*, it is to be hoped that the experience purchased will not be thrown away. Had the Chief Commissioner sought for block plans only this year, he would not have proceeded with quite the despatch he proposed to himself, but certainly with a better chance of success. The error in the present attempt cannot be better shown than by the fact that although in each of the three selected block plans the side of Westminster-bridge is changed, the very first proposal of the Chief Commissioner is to keep it where it is. Now, for what are we to pay the authors of the three approved block plans so unceremoniously thrown overboard? It is alike unfair to the public who pay and the competitors who receive.

To Sir Benjamin Hall great credit is due for the manner in which he has endeavoured to shake off the trammels of routine, and he has much cause for dissatisfaction at the manner in which he has been supported by the Metropolitan members, more particularly in the case of the improvements in St. James's Park. To hear members representing small constituencies condemning the great benefits conferred by these improvements is really sickening, more particularly since it has succeeded in postponing for an indefinite period the same salutary improvement in Hyde Park, &c.

When it is recollected that London and its environs comprise about one-eighth of the whole population of England, and of course contribute in the same ratio to its expenditure, surely something like a generous sympathy from those not doomed to pass the whole year in its crowded neighbourhood might be expected, and something like a nobler feeling towards the individual anxious to carry out not only salutary improvement but the long-required embellishment of the first city of the first country in the world. It is much to be hoped that during the recess Sir Benjamin will himself devote his abilities to the work, and be prepared, when Parliament again assembles, to lay before the public a general comprehensive plan, with all needful details and estimate of expense, and thereby secure the support of the House of Commons, and hand his name down as, and in reality he would be, the first Commissioner of Public Works.

LOOKER ON.

## FALL OF TWO HOUSES NEAR BISHOPS-GATE-STREET.

ON Sunday night last the greater part of two houses in Artillery-passage, at the back of Artillery-street, Bishopsgate-street, Nos. 4 and 5, fell to the ground, burying in the ruins the occupier of one of them and his wife, but who were eventually rescued. The inhabitants of the other house had contrived to escape in time. The front wall has not fallen, and to the eye does not give the same evidence of danger as that of many houses in the metropolis does. It seems that both these houses were condemned some time ago, but were patched up and allowed to stand. The passage is not above 10 feet wide, and it is extraordinary that the houses opposite were not injured. Several houses in the neighbourhood have since been condemned by the assistant surveyor to the Commissioners of Police.

## VENTILATION OF ST. STEPHEN'S PALACE.

THE notoriously bad quality of the atmosphere surrounding the Houses of Parliament, tainting as it does the British constitutions of the assembled legislators, having caused many complaints from the M.P. as expressed in the House (and many more, which have been imparted only to their medical advisers), I am induced to suggest, for the consideration of the pneumatic engineers and purveyors of storm to the Lords and Commons, a crotchet of my own for a better supply of the pure element.

It is manifest that, throughout the whole precincts of the Palace, the miasma of the reeking Thames pollute the element of life, and that the foul neighbourhood, as far as Millbank, with its festering sewers and crowded slums, superadds pollutions which are noxious to an extent only secondary to the river itself; therefore, pump, fan, ventilate as you will, whatever varieties of stercor are produced, the air is no purer.

Now it occurs to me that as water, so air, may be drawn from a distance. Good water is and ever has been conducted many miles for the supply of cities; but then a gallon of the former suffices for the supply of a single individual, whereas a great many thousand



cubic feet of the letter are required for the sustentation of one day's existence. Dr. Anybody could doubtless compute the quantity of atmosphere that 640 commoners, and a given number of peers, might consume. (This done, lay down a tube, after Samuda's principle (the pneumatic railway): let it start from the floor of the House, and on that terminus erect an engine for the purpose of exhausting or drawing out the supplies: perhaps the sitting M.P.s might supply the mechanism required. The other end might be conducted to some point sufficiently distant from London fog to insure a pure country breeze. Hampstead would never do: the Epsom downs might. A three-foot pipe would give a brisk gale; a six-foot tube, a hurricane! Well, here you have a remedy, far-fetched, certainly, but one that might be worth the carriage. It would be a pity that a building which, before it is finished, must cost the nation *five millions*, should be worse than useless for the want of some popular airs.

If sea-air were deemed better or more national, the Brighton line offers a ready channel for a duct, which might be set on the high cliff. EOLUS.

#### ORGANS.

WITH regard to several of the City church organs, built by Mr. Schmidt, they have been very extensively repaired, enlarged, improved, and several new stops added. The organ at Christ Church, Spitalfields parish church, has been very much improved, enlarged, new stops, and several hundred new pipes added; it has also a tremulant movement introduced to act upon the swell organ, so that it is now one of the most powerful organs in this kingdom. The organ was partly burnt when the fire happened in the steeple of this church. Improved by Gray and Davison, this organ I believe was one of Mr. Schmidt's; now I believe there is not a great deal of the original organ left. Mr. Schmidt's organ in the Temple Church, Fleet-street, has given place to a new one, built by Mr. Robson, of St. Martin's-lane; it will contain fifty-three stops when all completed. The organ, said to have been built by Mr. Schmidt in St. Giles-in-the-Fields Church, when first built, was no doubt a very fine instrument; but for many years it had been very much neglected, when Mr. Kimball, father I believe of the present Dr. Kimball, a few years ago caused it to be very much repaired and improved, and pedals added, &c.; but afterwards the machinery was completely worn out, and it would have cost the parish a large sum to repair it; in addition to that they would then only have had an old instrument that would, in course of time, cost them more than a new one, it was determined to erect a new one at a cost of 500*l.*; the old organ-case being retained for the new works in the organ. The present organ, built by Messrs. Gray and Davison, contains thirty-eight stops and three sets of manuals, or three rows of keys. It is a very fine instrument. The organ in St. Clement Dane's Church, Strand, built by Mr. Schmidt, did not contain more than about twenty-two or twenty-seven stops. I am very glad it is undergoing a reparation—not before it wanted it; one or two of the stops was very much out of order. I hope they will add some new stops.—W. V.

#### ARCHITECTURAL UNION COMPANY.

At a meeting of the directors, held last month (Sir Charles Barry, R.A. in the chair), it was resolved to circulate a statement of the present position of this company, in order that all those who may intend to come forward with assistance may see the necessity of *at once* declaring their determination without further hesitation. In this we gladly assist.

Shares to the amount of 6,000*l.* have already been taken; besides which the directors have received numerous written offers of assistance from many other quarters, which offers, however, they cannot properly estimate unless an allotment of shares is applied for in the usual way.

They consider that there ought to be no necessity to borrow any portion of so small a capital, and that it will be better on every account that the full number of shares shall be allotted; and, if so, a part only of each 10*l.* will be required, as the expenditure will not exceed 11,000*l.* or 12,000*l.* In the present position of matters the directors are prevented entering into a formal contract to purchase the premises in Conduit-street, and are compelled to trespass longer than they would wish upon Lord Maclesfield's forbearance; besides which they cannot expect his Lordship much longer to refuse other applications in deference to them.

They have, therefore, determined at once to canvass their own personal friends, and beg all those who are shareholders to make similar efforts; and if all who desire to assist will be kind enough to do so without delay, a very few days will be sufficient to bring

together such an amount of support as will enable the directors to take immediate and vigorous steps for carrying out the objects of the company, and to secure the premises in question.

The directors have already received offers of rental, we understand, which would secure the greater part of the income they have estimated, and have no doubt that, commercially, the undertaking will realise all that is promised in the prospectus.

It is to be regretted they did not hit on a less objectionable name: "Architectural Galleries Company" would have been better. The objection to this, that it would seem to apply more to the "Exhibition" than to the "Institute," does not appear to us a sound one.

#### FOREIGN INTELLIGENCE.

*Weimar.—Goethe and Carl August.*—On the 3rd of September, being the anniversary of the birth of Carl August of Saxe-Weimar, the foundation-stone of a monument for that great man was laid. On the 4th, the statues of Goethe and Schiller by Ritschel, and the statue of Wieland by Gasser, were to be unveiled. Great national festivals will take place on the same days, viz. a visit to the restorations going on at the Wartburg, near Eisenach; a concert led by Dr. Liszt, &c. The so-called Poet's Rooms in the Grand Ducal residence at Weimar, the houses of Goethe and Schiller, the library, and the art collections, will be open to inspection. For the excursion to the Wartburg, the Grand Duke has directed free railway tickets to be presented to foreign visitors.

*Paris.—Kiosques Lumineux.*—A company has been formed here to substitute little elegant lighted pavilions, instead of the unsightly news-vendors' shops hitherto in use. On this occasion the following historical data have come to light. The first vendors of newspapers in Paris had only the privilege to sell them to passers-by, but not to lend them for reading. In succession some one extemporised a chair, at the place where this traffic was most active. There the *marchand* took his meals, &c. By and by, during rainy weather, a few boards were placed under a tree; and then, in succession, a number of little ugly barracks sprang up along the Boulevards. The above company have now supplanted these *chemins* by smart octagonal pavilions, brilliantly lighted. The walls of these *kiosques lumineux* are of glass, on which advertisements are painted in various colours. Some parts of the Boulevards look very gay by these seemingly trifling progresses of the times.

*Stuttgart German General Art Congress.*—The *Wartemberg Montieur* gives the following programme of the business and discussions of the forthcoming Art Congress in the above city:—1. General exhibition of German art. 2. Petition to the German Diet (Parliament) relative to the protection of mind's property. 3. Relation of artists to the art-unions. 4. The establishment of a general fund for widows and orphans of artists.

#### THE DWELLING REFORM MOVEMENT ABROAD.

To this vital question of the times our continental neighbours pay a marked attention, and the press of Germany and France discusses the subject in a fearless and open manner. The *Cité ouvrière*, Rue Rochecourty, Paris, is the most extensive example, as 200 families are there housed; and a bath, a laundry, and a *Kinder Garten* are annexed to it. More ideal are the houses of Mühlhausen, because a man of great tact and enthusiasm (M. Müller) is at their head. There a number of workmasters have erected dwellings for 300 families, two and four being respectively under one roof; but there, besides the adjuncts of the *Cité ouvrière*, the dwellings have separate entrances, and little gardens; there, moreover, a bakehouse and a *restaurant* have been added to the plan. All, however, done now in France, becomes centralised,—governmentised, or, if one likes, socialised. A *société en commandite* (firm Aublet and Clark) has started with a capital of 12,000,000 of francs, and has obtained the promise of State subsidies, which may be as much as 10,000,000 of francs. The society has entered an obligation to erect at least 6,000 new dwellings for the labouring classes in Paris alone, and it has also purchased the block of the lodgings, Rue Montorgueil, which contains 400 berths. Sets of furnished lodgings have also been made up, much liked by the workmen. The questions, whether these dwellings ought to be isolated, semi-isolated, or contiguous and barrack-like; what rate of interest the shareholders shall be allowed to receive; whether the occupiers of such dwellings should have the right of purchase by instalments, &c., have all been discussed in books and journals. Still, there is nought practical resulting from so much discussion. In one place one system will work well, while in others another will better answer the purpose, and it is always the *genius* of one man who will hit upon what is best. In speaking of

a high pitch of mind, everything else is given; as no such man will descend to jobbing, collusion, bribery, &c.—banes which destroy most of the well-projected (thought) plans of the present day.—*German Quarterly.*

#### HERTFORD.

THIS quiet town has for some time past been the scene of bustle, through the works which are being carried out by the New River Company, for the purpose of improving the quality of their water-supply to the metropolis. The company have, at their own expense, we are told, drained the streets and lanes of the town with brick sewers, under a London contractor—concentrating the sewers into their new deodorizing beds, now in course of construction by Messrs. Lee and Lavers, contractors, where all the foul sewage water from the town will be filtered and passed off into the Lee Trust, in a clear state. The River Lee Trust has been closed for some time past for the annual repairs; and we understand that some difficulty has been found in putting in the new look at Ware, in consequence of the springs, which are very abundant in this neighbourhood. We are glad to hear that the town of Hertford is being improved by the erection of some good houses.

#### MEMS.

THE committee of the inhabitants of the parish of St. Sepulchre, and others interested in the appropriation of Smithfield as a dead meat and poultry market, have caused a plan to be prepared and submitted to the Chancellor of the Exchequer, who, it is said, has approved of it, and transmitted a copy of it to the City authorities for their consideration. It is proposed to preserve all the space which comes in a line with the north part of Long-lane, and in order to provide a sufficient area, it is proposed to remove the property towards Charterhouse-square and lane, and to Greenhill-rents and Durham-yard: this would give an area for the proposed market of about twice that of Newgate-market.

Amongst the various complaints of nuisances brought before the attention of the Metropolitan magistrates, the following is of a somewhat novel character, and shows the advancement of science in rendering what were once considered waste matters of utility. It is, however, unfortunate that this improved knowledge does not prevent the manufacture of artificial guano, in improper places. The case which we wish to mention is as follows:—From time to time, particularly in the summer, large quantities of fish, from being too late for the Billingsgate-market, or from other causes, are condemned as being unfit for human food. Once upon a time these would have been taken to a distance and shot into the Thames: the bad fish are now, however, carried away by a manufacturer to some building on Bow-creek, and there converted into manure. The terrible smells arising from this manufacture were described, and much amusement was caused by the principal complainant pressing inviting the magistrate to kindly proceed to the place and take "just one sniff," which he considered would be sufficient to decide the question. As is usual in such cases, the proprietor of the place argued that it was perfectly wholesome, although it was admitted that on one occasion so large was the quantity of putrid fish which arrived at one time that there was not sufficient convenience for its immediate manufacture, and that a mass of putridity was allowed to remain for two or three days, to the great danger of the health of the neighbourhood. It was shown in the evidence that the steeping of the fish in sulphuric acid removed unpleasant atmospheric effect. It appears that it is the practice to convey the fish from the market to the manufactory in tanks placed in carts, to the great annoyance of those living in the thoroughfares. It was suggested that the matter complained of should be carried at night: this, we fear, would do away with the evil, for, supposing the houses to be properly ventilated, the bad gases from the tanks would find entrance by night as well as by day: a better plan was proposed, that of closing the tanks.

An instance, which clearly shows the necessity for the inspection of dwellings which are let out in tenements, was brought before the notice of the public the other day. In Henrietta-street, Manchester-square (a portion of the cholera district in 1854), a child died after a short illness. It transpired that the death took place in a small room at the bottom of the house, into which there was no ventilation except by the door: the place was nearly dark, and of very small dimensions, and the atmosphere was scarcely to be borne by those strangers who visited the place. In this unnatural darkness a family, consisting of parents and six children, had for some time been up-living. It appears that in the house there were upwards of forty residents. A nice nursery of nice things.

The reporter at the Marlborough-street Police-



court has drawn attention to the bad condition of the cells of the police-stations and the court. Some of these places of confinement are situated underground—the doors lower than the drainage, which would seem to be imperfect, for unpleasant matters ooze through the floors. All these places require to be carefully examined; for it should be borne in mind that a large number of those who are confined there are not convicted of crime; and at times they are obliged to remain in places not much larger than coffins from Saturday evening until Monday morning. The confinement of a number of persons in these ill-ventilated vaults must spoil the air of the rooms above.

It is said that there has been much illness amongst the crews of the ships in the river, a circumstance not to be wondered at, for nothing can be worse than the condition of some of the old cellars for the purposes of health; in many instances a quantity of "bilge water," of a poisonous description, is down below; and, in too many instances, the sleeping-places are not very clean, and so small and confined that it is wonderful the seamen can exist at all.

#### DECORATION OF COATS OF ARMS.

Would you allow me, through the medium of your journal, to make a suggestion or two to those who mount the "Royal coat of arms," or who may hereafter do so? for an alteration which I believe would materially increase the attractiveness of their respective establishments. I have observed that generally the arms are mounted on a base: in cases where they are not it would be necessary to have one. The front of this base I propose to glaze with stained or coloured glass, with lettering as may be desired: this should be illuminated by a line of gas jets at the back, which will, I think, present a very pretty transparency. An illustration may be seen at Messrs. Horne and Thornthwaite's, who had the alteration made in the one which they have just erected at their premises in Newgate-street. But to those who are prepared to go further, I would propose the making of the shield in skeleton or frame-work: this I would glaze with stained glass with the usual devices painted thereon: the sides could also be glazed in the same way, and in such a manner that a rich and appropriate bloom of colour could be thrown on to the lion and unicorn at the sides. The effect, I cannot but think, would be exceedingly pleasing, novel, and of a superior character. J. CLARKE.

#### SUB-ARCHES FOR LONDON.

Sir,—One of the largest new and important buildings in London is not yet commenced, the extent of which will employ the builders in bricks and mortar for years to come. The work has great demands and strong claims upon the trade for its usefulness and necessity, which will produce the most beneficial effects in our streets, in an efficient and permanent manner.

Some indirect attempts to begin such a work have been made, but, as they began in wrong doing, so they have not succeeded in the accomplishment of their designs.

The downfall of the Metropolitan Railway, as announced in their own report lately, is an event long expected, as it was got up in cunning artifice, in connection with the defunct Central Terminus.

Both of these were based and took their origin from the valuable and useful invention of sub-arches in streets, which was brought before the public many years ago, but which these two were intended to supersede under other names.

Brick sub-arches in the streets of London, for passengers in carriages upon trucks, will make plenty of room in the leading thoroughfares, without any crowd.

Sub-arches, as light as day, and as full of atmospheric air as the open streets, by the means of iron grating on the top, will have a double line of rails for carriages of every description, in a grand trunk line through the centre of London, which will be entered upon inclined planes from the back streets, so that no stoppages will ever occur.

This advantage of clearing the streets from the crowds of carriages and passengers the Metropolitan Railway could not effect, any more than its companion, the Central Terminus. Therefore they have come to nothing, having nothing done.

But should the streets continue to be so full and overcrowded? Is there no remedy? Has more than a million of money been subscribed for upon the bare proposal of a plan to get more street room even at the outskirts of the metropolis, however fallacious that plan has been, and shall the leading thoroughfares be blocked up for ever?

There is a remedy, a complete remedy, in these sub-ways, which has been laid before the Metropolitan Board of Works, who are authorised by Parliament to improve the streets of London.

This Board have offered rewards for new streets,

to ascertain by public advertisement the possibility of doing without sub-ways.

The three months' notice has expired for these new street plans, and very few, if any, have come to that Board!

There now remains no plan for the permanent improvement of the streets of London but my sub-ways in brick arches, which will produce a perfection in them unheard of and unknown before.

It will also become not a mere City terminus, or a Westminster terminus, but a general terminus for all the railways entering London.

This work is now wanted to be commenced and carried on without further delay.

JOHN WILLIAMS.

#### TIMBER SCAFFOLDING AT HOUSES OF PARLIAMENT.

I HAVE been much pleased in perusing the interesting paper read by Mr. Charles Barry, at the Architects' Institute, some short time since, on the subject of the timber scaffolding and travelling cranes used in the erection of the new Houses of Parliament, but he has fallen into a slight inadvertence in attributing the first use of timber scaffolding to his respected father, Sir Charles Barry. I may be excused for correcting his paper in this particular, when I state what I believe to be the fact, that the first use of the movable cranes and scaffolding in this country was by a Mr. Tomkinson, in his stone quarries, at Runcorn, near Liverpool. It was here that I first got the idea, and also from the timber scaffolding used in the erection of the Arc d'Etoile, in Paris. It was in consequence adopted at the Reform Club-house, the Nelson Column, and at the new Houses of Parliament. I may add, that I gave a paper on the subject, with a model, some years since, to the Institution of Civil Engineers, and that I attribute the credit of the scaffolding used at the new Houses of Parliament mainly to two of my foremen of masons, Messrs. Allen and Baker, who on my behalf made the original sketches for it, and took great interest in it, and in its adaptation to the towers and other portions of the building. My friend, Mr. Barry, will, I am sure, excuse me for correcting his paper in this respect, it being but fair that the humble builders and masons (without whose aid architects would occasionally experience difficulty in carrying out some of their designs), should not be altogether overlooked. T. GRISSELL.

Norbury-park.

#### PROVINCIAL NEWS.

**Banbury.**—The contracts for the water-works are now taken. The engineer is Mr. J. H. Jones, of Westminster. The tenders were made out on quantities taken out by a surveyor nominated by the contractors.

**Wendesbury.**—A new theatre has been erected here. The interior is 40 feet by 80 feet, and the height 45 feet. The front is of brick, with stone dressings, and in the Roman style. The architect was Mr. B. Dawes, of Wendesbury. The cost of the building will be 1,500*l*.

**Dudley.**—The foundation-stone of the new Wesleyan schools, in King-street, Dudley, was laid on the 27th ult. by Mr. Thomas Davis. The site selected for the new building is at the back of the Wesleyan Chapel, recently known as Alma-place. The school is to be upwards of 70 feet long, by about 25 feet in width. The architect is Mr. George B. Nichols, of West Bromwich, and the builders are Messrs. William Holland and Son, of Dudley.

**Plymouth.**—The foundation-stone of a new building, in Old Towa-street, Plymouth, for a commercial hotel, was laid on the 28th ult. by Miss Adams. The contractors are Messrs. Call and Pethick. The new building, which is designed by Mr. O. C. Arthur, architect, will be in the Anglo-Italian style, and will comprise five stories, 60 feet in height and 56 feet in width.

**Chester.**—The four marble drinking-fountains already presented to Chester, says the *Local Chronicle*, will receive an addition of other four, and the following sites have been suggested,—one at each of the four city gates, one at the Cross, one at the corner of Abbey-square, one near the end of Seller-street, and one at Frodsham-street-bridge.

**Nantwich.**—The following estimates have been sent in for the erection of the Town-hall and Corn-exchange, on the plot of land called Snow-hill, in Nantwich:—Messrs. Denton and Andrews, Chester, 2,800*l*.; J. B. Latham, Nantwich, 2,035*l*.; Thomas Bowker, ditto, 1,990*l*.; Joseph Wood, ditto, 1,915*l*.; 10*s*.; Richard Boucher, ditto, 1,770*l*.; Henry Ray, ditto, 1,695*l*.; Edward Fay, Birmingham, 1,489*l*. 16*s*. The architect is Mr. James Crauston, of Birmingham.

**Liverpool.**—A new court-house for the county magistrates has been erected here, and is now nearly completed. The site is on the east side of Basnett-

street, near its junction with Williamson-square. Externally it presents few features of interest. The lower or street floor is occupied by two shops, above which is a set of offices for the magistrates' clerks. In rear of these offices, and having a direct communication with them, is a small consulting-room, to be used by the magistrates when required; and immediately beyond this, but having a separate stair of entrance, is the court-hall, measuring 58 feet 8 inches long, by 24 feet wide. It is lighted from the roof, and means have been adopted for its ventilation. The architect is Mr. Sheldarline. The contractors are Mr. Tomkinson, bricklayer; Mr. Wells, mason; Mr. Pollock, carpenter; Mr. Jones, plasterer; and Mr. Holt, painter.

#### SMOKY CHIMNEYS.

PERMIT me once more in your columns to suggest a remedy whereby unsightly and unsafe zinc tubes and pots of every conceivable form and size that at present disfigure our edifices, public and private, may be altogether superseded.

It is simply by the formation of horizontal apertures or side flues, and covering in the top of the flues with 2-inch York sailing over some 3 or 4 inches on either side, a practice long in vogue in the south-west and other districts of England.

The points gained are the stoppage of down draught, the creation of an upward current, the keeping of the flues "dry," the prevention of damage to cooking and the stoves. In places where one building is commanded by another, and an eddy thus formed, the advantages are too evident to require comment.

AN ARCHITECT.

#### AGENTS.

##### CLAIM AGAINST A BUILDER.

**HYMNEN, SALISBURY.**—This was an action brought by Mr. Hymen, in the Salisbury County Court, to recover 5*l*. from Mr. Salisbury, a builder, and dealer in building materials. On the occasion of the sale of the old building materials of the late Italian Opera, Covent-garden, the defendant was present, and made large purchases of bricks. The plaintiff, who is a sort of agent for the sale of building materials and other things, pressed the defendant to allow him to sell the bricks for him, alleging that he had a customer at the time for 100,000. This statement was admitted to be untrue in the cross-examination of the plaintiff. The plaintiff further alleged that the defendant agreed to give him a commission of 1*s*. per thousand for all he could sell. This was denied by the defendant, who being pressed by the plaintiff, and several other agents of the same class, said, "Well, if you know anybody who wants any bricks, you know I have some." But he never made any agreement with them, or authorised them to sell, as he could sell his own bricks himself, and had his own man for the express purpose of doing so. It appeared that the plaintiff subsequently went to a Mr. Armstrong, and without authority from the plaintiff, said he could sell him 100,000 bricks. Mr. Armstrong came down to see them, and the defendant's foreman, after showing the bricks to that gentleman, called his master, and an agreement was drawn up and signed between them, by which, on a given day, Mr. Armstrong was to pay 12*s*. per thousand, the plaintiff being present at the time. A day or two after the defendant saw the plaintiff, and in reference to the trouble he had had, offered him 30*s*. as compensation. The plaintiff declined that sum, and set up a claim for 5*l*. being a commission of 1*s*. per thousand. Mr. Hymen (the judge), said the primary statement of the plaintiff, that he had a customer at the time he alleged he spoke to the defendant, and the defendant agreed to give him a commission of 1*s*. per thousand, was untrue. His statement was denied by the defendant, and the account he gave was, in his opinion, the true one. The plaintiff had been offered 30*s*. which he had declined: that being the case, he could not but be entitled to anything, and his judgment was for the defendant.

#### THE MARYLEBONE FREE LIBRARY.

In regretting to your correspondent the failure of the above library, allow me to state that placards were widely distributed, announcing the closing of the library, and that the books would be returned to the donors. The Fitzroy Teetotal Association, Little Portland-street, Oxford-market, having a free library for the use of its members, thought it an opportunity not to be let slip for increasing the same. Application was therefore made to many of the contributors, which was responded to with a cheerfulness and promptitude that was very encouraging to the committee. Our library is therefore enriched with many a valuable work that it would not have been in our power to purchase, and which we have no doubt will be duly appreciated by the members.

ONE OF THE COMMITTEE.

#### TO MOUNT TRACINGS.

As an answer to your correspondent "Silvio," I beg to describe my methods of mounting tracings—paper upon paper and linen as follows:—

Firstly, to mount on paper; and assuming the paper not to be sufficiently flat to make a neat job; I damp the paper with a sponge and water upon a board with a frame, on which I stretch it. If I have not a board with a frame to spare, I paste the edges of the paper down on any ordinary drawing-board large enough for the purpose, after having given the water time to expand the paper; then, when it has stretched flat, I rub on its surface with a painter's brush the ordinary flour paste; upon that I lay the tracing; and I have generally an old newspaper at



hand with which I cover the tracing immediately I have laid it on to the paste. I then commence rubbing it with a cloth, rubbing from the centre to the outer edge, to exclude air, until I have got an even surface. When dry, I always find a mounted tracing with as smooth a surface as can possibly be had. If the tracing be small, I use common cartridge paper, which, owing to its flatness, does not require any stretching, but simply moistening preparatory to receiving the paste. I do not in any case damp or paste the back of the tracing, as is usual with many. Secondly, to mount on linen: I damp it as I do the paper in the process already described. I then stretch it on the back of a drawing-board by securing the edges with small tacks, and when dry and flat, proceed to paste and lay on the tracing in the same way as described for mounting on paper.

JOSEPH GORDON.

### THE NEW FINE ARTS ACADEMY, BRISTOL.

THIS new structure, near the Victoria Rooms, will soon be completed. It consists of three principal stories, the uppermost or principal floor containing the exhibition-rooms. This floor is reached by a flight of steps from the exterior. Passing across an arcade at the top of the steps is the entrance-hall, 23 feet by 16 feet, which is intended for the exhibition of sculpture. Directly opposite the main entrance is the exhibition-room for oil paintings, 50 feet long by 30 feet broad; the height of the walls to the cornice, or hanging space, being about 20 feet. The ceiling will be semicircular, and the room amply lighted by a continuous skylight. On this floor will be also two other exhibition-rooms, 34 feet by 19 feet; one being intended for water colours, the other for architectural drawings. In addition to those named, on this floor are suitable rooms for the accommodation of visitors on public occasions. The rooms are *en suite*. To the right of the hall, an interior stone staircase leads to a room extending over the entrance-hall and colonnade, where the pictures bequeathed to the academy by Mrs. Sharpley will be exhibited. The middle floor, on a level with Queen's-road, is devoted entirely to the school of practical art, which has provided one large room for drawing, 50 feet by 30 feet, one secondary ditto, 29 feet by 19 feet, with separate rooms for the masters, ladies' room, &c. The entrance to this floor will be by a doorway directly under the centre of the main entrance steps. The whole of the rooms will be 18 feet high, and be lighted by numerous windows to the north and east. The lowest floor will be devoted entirely to the purposes of the academy. This floor will be also 18 feet high, and will contain a large room, 50 feet by 30 feet, for drawing from the life, lectures, &c.; a students' model-room, with collection of casts, entrance-hall, staircase leading to the exhibition-rooms, artists' retiring-rooms, with porter's residence, and numerous rooms obtained under the main entrance flight of steps, for packing and unpacking pictures. The principal façade towards Queen's-road, with the return angle, is faced with freestone. The flight of steps before mentioned as leading to the upper or exhibition-floor, forms a leading feature in the design, being 26 feet wide in front of the entrance-door, dividing before reaching the street level into two flights, right and left. The sides of the steps will have stone balustrades, surmounted by vases, &c. The front of the building is divided into three portions, a centre and two wings. The centre consists of an arcade of five arches, separated by three quarter columns, surmounted by Corinthian capitals and entablature, three of which are entered from the main flight of steps, the other two having balustrades. The niches at the ends of the arcade are proposed to be filled with statues. Over this arcade is an upper story (Sharpley's gallery), which presents a series of semicircular lunettes, which are filled with exquisite pieces of sculpture. The attic is surmounted by a balustrade, in the centre of which, crowning the whole façade, is an allegorical group of figures, 9 feet high, representing Architecture, Painting, and Sculpture. The two wings have pilaster with Corinthian capitals, entablature, balustrades, &c. In continuation of those of the centre portion. In the centre of each wing are large niches: one will be filled with the statue of Sir Joshua Reynolds, the painter; the other is to hold the statue of Flaxman, the sculptor. The niches before mentioned, at the ends of the arcade, are proposed to contain statues of Sir C. Wren, the architect, and Graving Gibbons, the wood-carver. The whole of the sculpture is by Mr. John Thomas. The architects are Messrs. C. Underwood, and J. H. Hirst, M.I.B.A., whose services are gratuitous. According to the *Bristol Mirror*, the designs were selected by the architects of Bristol, who, as members of the Fine Arts Academy, instituted amongst themselves a friendly competition, the result of which was the selection of Messrs. Underwood and Hirst's designs. The committee of management of the Fine Arts Academy adopted the exterior designed

by Mr. Hirst, and requested Mr. Underwood to adapt his arrangement of the interior so as to accord. This being done, both architects were invited to superintend the execution of their designs, the division of labour into the practical and æsthetic departments being throughout maintained. The whole cost of the building (exclusive of site, and of the sculptures for which subscriptions are being obtained), will be under 5,000/.

### THE HEALTH OF THE JEWS OF LONDON.

It is noticeable that in poor neighbourhoods which have been attacked by cholera, fever, small-pox, and similar diseases, the Jews living there have in an extraordinary manner escaped visitation. The apparent causes of this sanitary fact are worthy of attention.

1st. As regards food, it seems that even the poorer Jews are most particular in the food they eat. In obedience to the law of Moses, they use none of the blood or offal of animals: they are also particular in the choice of fish, and avoid both animals and fowls which are grossly or unwholesomely fed.

2nd. Intemperance in drink is rare amongst them; and even the very poor Jews are remarkable for their attention to moral family ties. There are, of course, exceptions, but this general characteristic is certain.

3rd. Their religion directs them to use great personal cleanliness. Ablutions are made before visiting the synagogues and on other occasions. Their houses are also thoroughly cleaned at certain periods from top to bottom.

All the above acts are important to health, and the good effect of attention to them is evident. The rules are so simple, that they might be readily observed by the chief parts of the masses of people in the large towns, amongst whom this ancient race are scattered. In the course of investigation of the neighbourhoods in which the Jews reside, we have generally found them to be very sensible of the advantages of proper sanitary conditions. It is worthy of notice that few have seen a London Jew begging, although some of them are very poor, and we believe that they seldom apply for parochial assistance. Large sums, however, are distributed by the more affluent of their creed to those who need assistance.

### NOTES UPON IRON.

THERE continues a good home demand for iron, of a quality that it is supposed can be relied upon; and for sheets, some houses have in the past few days been obliged to refuse orders. At the same time we know of instances in which large quantities of these have been made, sheared to the sizes most likely to be in demand, and stocked, in order that the works producing them may be kept fully on. There are other cases that we know of in which puddled bars have been made and sold to makers having a large demand for merchant iron, at rates as productive of profit to the latter as the buying of pig iron, and using their own puddling furnaces. These facts are clearly indicative of a varied experience in the trade. The variation, however, is not so marked as to occasion complaint; and the indications of the different experience in the trade which we have pointed out, are not patent. Almost every maker will tell you that he has got enough to do, and the greater number really are working full time. Contemporary with the home inquiry, the United States advances are inducing activity where without them there would be partial languor. This is so in particular in two or more instances where the demands of the American market in regard to prices have been partially cancelled. There can be no doubt but a reduction of 20s. per ton upon the prevailing prices would create a very large demand from America.

### THE PROPOSED LONDONDERRY BRIDGE.

#### THE BRITISH ASSOCIATION.

At a meeting of the section for Mechanical Science, a paper by Mr. P. W. Barlow, "On the Mechanical Effect of combining Girders and Suspension Chains," was read. As reported in the *Athenæum*, the author states that his attention had been directed to the subject from having, as engineer to the Londonderry and Enniskillen and Londonderry and Coleraine Railways, been required to consider how a junction of the lines, combined with an improved road communication, could best be carried out. The design had been approved by Sir William Cubitt, the consulting engineer of the road commissioners; but some doubt having been expressed as to the accuracy of the calculation of the weight of metal required in a suspension girder, he caused a series of experiments to be made, the results of which completely confirmed his calculation; and, being of great practical importance, he laid them before the British Association, in order that the simple mechanical question of the effect of combining a girder and chain, on which no difference of opinion ought to exist, should be determined. The author,

after some general remarks on the construction of bridges, in which he points out that a girder, to have equal strength, requires double the metal, and to have equal rigidity, four times the metal, of a suspension chain of the same span, if loaded equally all over, called attention to the theory hitherto adopted on this subject of the weight of girder required to stiffen a suspension chain, viz. that of Mr. C. Clarke, who, in his work on the Britannia Tube, in speaking of the difficulty of rendering the Menai Suspension-bridge sufficiently rigid for railway traffic, asserts that the construction of a platform 451 feet long, sufficiently rigid for a railway, almost amounts to the construction of the tube itself. The author then described his various experiments on a model bridge, 13 feet 6 inches in length, the results of which are entirely at variance with Mr. Clarke's theory, inasmuch as they prove that a girder, when attached to a chain, will not deflect more than one twenty-fifth of a girder unattached, under ordinary circumstances. Having, by repeated experiments, established this result, which, he explains, is quite consistent with the law of the deflection being as the cube of the length, he proceeded to compare the weight of metal and deflection of the proposed Londonderry-bridge with a girder of equal span, and selected the Britannia Tube, from being nearly the same span. The weight of metal in one span of the Britannia Tube is 3,100 tons. The weight of metal in the proposed Londonderry-bridge, with equal deflections, is 432 tons. This result, the author remarked, is unexpected, but quite consistent with the fact that the Derry-bridge has three times the depth, and has 2,000 tons less of its own weight to support. The author, in summing up the result of his investigation, gives the following results:—That the deflection of the wave of a girder attached to a chain similar to the Londonderry-bridge will not exceed one twenty-fifth of the deflection of the same girder not attached to the chain. That theoretically the saving of metal to give equal strength in a suspension-bridge is only one-half of a girder; but as it can be made of great depth without practical difficulty, and as the deflection varies as the cube of the depth, a bridge, on the principle of such plans as the Londonderry-bridge, may be made, under average circumstances, with at least one-fourth of the metal of an ordinary girder-bridge having equal rigidity.

### CLUSTERING OF BUILDINGS.

ALREADY there is too little space in the public buildings of London: the few that remain of old foundations can ill afford to receive additions, and those of modern performance possess reserves too limited for the crowding in of increased structures.

It is refreshing to see a grand design finished throughout in fair proportion, and enclosing within a courtyard, or mayhap a garden: this in a hive of three millions of souls is hardly to be found. Somerset-house, Buckingham-palace, and the several Inns of Court, are some of the few exceptions.

The British Museum did realise all that could be desired in this respect. The façade is noble, and two years back the inner court presented a pleasing verdure within the quadrangle, which afforded pleasure in the aspect, and health in the use of the institution. All this has been changed: the interior is now filled in by a dome, which, whatever its utility, injures the rest of that noble pile, and, considering its vastness and costliness, it is to be regretted that some other space had not been provided for it.

Perhaps the last who ought to object to the occupation of the site is the writer of these observations; as, in the year 1851, he recommended in the *Builder* that a crystal dome should be raised thereupon for the reception of the reliques from Nineveh, the marbles, and other antiquities, as a sort of "Museum petrum;" but then it was not proposed to raise the roof to so great an altitude as that of the present Library: besides that, as then suggested the glazed surface would not exclude the light, nor was it intended to cover wholly the ground as now occupied by Mr. Smirke's idyllic.

In the present *rotunda* the temperature is generally good, and the air not deficient. An agreeable change and undulation are felt, but still there is a heaviness occasionally perceptible from the gravitation of the breathings of so many confined within the same area; and it will require the coming winter's experience to show whether a dome of 140 feet wide by as much in height can be attempted evenly as quadrangular chambers.

The noise anticipated from the congregation of so many, with the incessant locomotion of attendants, has most certainly been wholly obviated. This has been most ingeniously arrived at by mechanical contrivances; and what with the kamptulicon covered floor, and cushioned seats and desks, the readers can sit in luxury, whilst the attendants walk softly.

Whatever may be the result of the experiments in the British Museum,—whether it be to stow more safely literary treasures such as the world possesses



in no other collection, or whether it be to carry out and fully efface the objects of national study,—it is only purposed to argue against the principle of covering such areas.

Suppose that the example were followed, and that in a fit of economy the Government should decide upon raising another *rotundo* in the quadrangle of Somerset-house; or, if respect for the sublime and beautiful should forbid such an outrage, were it to occur to the royal architect to incase a library or ball-room within the court-yard of Buckingham-palace! There is no determining where the taste for constipation of brick and mortar might stop. Lincoln's-in-fields are already threatened with an invasion of the courts of law: the squares in such case must all in turn give place to exhibitions, or aviaries, or *jardins d'hiver*. The spirit of Cornhill, Finch-lane, and their alemtours, would in such case pervade the whole capital: the brick might be turned into stone, but the inheritors of the next generation must, when raised in so many storied flats, find themselves, whilst soaring higher in flights, most inconveniently packed in their swarms.

There is in the commercial centre of the City but little space, and that little is so much augmented in value, that there is no law nor reason for restraining the proprietors of old houses from pulling them down, nor from reconstructing them in any increased number of stories. We see narrow frontages under 20 feet raised seven stories high! All this is going on in the narrowest thoroughfares. The light is reduced, the air stunted; but there is no help for it, unless, perhaps hereafter, the expedient of a windsail, such as ventilators ships' holds, be hung in narrow streets. Each proprietor may do what he wills with his own; not so in our public buildings. There is a restraining power to avert spoliations, as well as to determine upon additions and improvements: that power should be called into action in every case where public property is concerned.

Most true it is there are many public structures that want modification: many others require to be removed or displaced; the most prominent amongst the latter being *Northumberland-house*, and of the former, the National Gallery. But, in the decision upon all such cases, the utility, the cost, the propriety, and the proper time for taking in turn every particular demolition and reconstruction, ought to be well weighed and adjudicated. "One thing at a time" is a good maxim for an individual. The governing powers, too, may have their hands too full, from having undertaken too much at once. That which is most required should be done first; but every work accomplished ought to be done with a view to future changes, as well as with the most strict adherence to present objects and uses.

### Miscellanea.

**STEETLEY STONE.**—In your notice of the proposed church of St. James, Doncaster, you say, very correctly, that "the stone to be used is not Steetley, but Ancaster." As the above words seem to imply a preference for Ancaster over Steetley, I think it right to say that so far as my individual feeling goes, the contrary would be the case. I believe that the ground on which Ancaster was chosen was solely because, by help of the Great Northern Railway, it is cheaper, and that the supply is probably less liable to interruption.—GEO. G. SCOTT.

**ROYAL NAVAL SCHOOL, NEW-CROSS, KENT.**—It having been determined to place in the chapel of this valuable institution, a tablet in memory of the officers, educated within its walls, who fell during the late war, a subscription list was opened, and designs for the same submitted: one has been selected, by Mr. Physick, sculptor, who is now engaged upon the work, the drawing of which can be seen in the studio of the artist.

**SEATS IN THE PARKS.**—Why do the authorities insist on iron seats? Iron supports and framework are very well; but iron being very susceptible of atmospheric influences, is surely the last material in the world for a seat!—PEDESTRIAN.

**THE IMPROVEMENTS AT BALMORAL.**—Not a stone of the old castle is now to be seen, while the new building is completed. At the east end of the Castle, an extensive range of comfortable houses for the out-servants, and stables, have been erected; while along the banks of the Dee long gravelled walks and grassy terraces have been laid out. According to the *Aberdeen Herald*, the most notable addition and improvement is the new cast-iron bridge, which, under Act of Parliament, the Prince Consort has, at his own expense, erected over the Dee, for the purpose of securing the privacy of the Castle, and preserving the deer forest. The bridge, which was designed by Mr. Brunell, is constructed on the principle of the tubular bridge across the Menai Strait, has a span of 165 feet, and contains eighty-five tons of iron.

**THE ROYAL ALBERT BRIDGE AT SALTASH.**—The bridge, the first section of which was floated out last week, and which is to span the river Tamar, with a view to connect the Cornish Railway, now in course of construction, with that of the South-Devon line, is on a principle combining the tubular and suspension, of which Mr. Brunell is the originator and designer. The total length of the bridge is 2,200 feet; the span of each main opening 455 feet. The height of the centre pier from the foundations is 240 feet; height of roadway above high water mark, 100 feet; height of ditto above low water mark, 118 feet. The centre pier is built of granite, founded on the rock, and carried up solid to 12 feet above high water mark, from which point spring four octagonal columns of cast iron, carrying the standards on which one end of each tube rests. The main side piers consist of solid masonry, arched over the roadway, and supporting bed plates and rollers, on which lie the other ends of the tubes, and which allow of their free extension and contraction under varying temperatures. The tube floated out has to be raised 100 feet above its present height, which will be performed gradually, as circumstances will admit, by means of hydraulic power, the tube being raised about 6 inches at a time, and then brickwork to be built under it, when it will be again lifted another 6 inches.

**GAS.**—The Sherborne Gas Company, it appears, have realised a profit during the past year, equivalent to a dividend of 14 per cent. but the whole is to be swept off in the payment of old debts. The old debts are, doubtless, connected with high prices, and the new profits with reduction of these high prices.—A company, on the limited liability principle, with a capital of 100,000*l.* has, it is said, been established in London for lighting with turf gas, and the *Waterford Mail* states, that an experiment was lately tried in that town, with gas made from turf got in the vicinity, and that the light was peculiarly brilliant and pure.—With rebellion, murder, rapine, distrust, and alarm on every hand, says the *Bombay Gazette* lately received, the career of improvement in India still remains unchecked. A part of Calcutta had just been lighted with gas. The natives were greatly astounded and perplexed by the new light.

**NEW ROMAN CATHOLIC SCHOOLS.** With a master's house attached, have just been completed at the Brooms, in the immediate neighbourhood of the Consett Ironworks. The buildings are Gothic, and are built of stone, with open-timbered roofs, stained and varnished, projecting over the eaves, and finished with an ornamental ridge-tile. The walling is built in long flat courses, neatly pointed with dark mortar, which contrasts well with the chiselled work of the windows, buttresses, &c. The school is entered by two porches, for the boys and girls, constructed of timber and stone, and set upon a stone base, the timber being moulded and staided, and filled in between with small courses of stone. Upwards of 150 children attend the school, and, with the exception of a few pounds subscribed, the whole cost has been defrayed by the Rev. George Dunn, of the Brooms. The architect from whose designs and under whose superintendence the buildings have been carried out, is Mr. Archibald M. Dunn, of Newcastle, and the contractors were Messrs. Gibson and Stewart, also of Newcastle.

**DE OMNIBUS REBUS. BAD AIR IN SEWERS.**—I hope your correspondent's advice, p. 515, will be adopted. It is very distressing to read the details of such loss of life. I have some schemes to propose. If the contractors of such works as sewers, wells, and cesspools, in these cases, were provided with such tackle as is used by the Humane Societies in the case of drowned persons, if one unfortunate person fell, he might be drawn up, without others recklessly throwing away their lives in trying to save him. I fear there is not sufficient precaution taken in this work. Some time should be allowed when an opening is made to let the foul air escape; but the most dangerous and destructive is the condensed carbonic acid gas, which remains on the surface of the soil or stagnant water. My method is this: get an open iron vessel, put some small lumps of fresh lime into it, attach a cord to it, shake the lime, and lower it directly to the surface of the soil or water, play it about the surface as much as you can. After this process lower a lighted candle, and if it burns freely on the surface of the soil or water, there is no danger to be feared. As to *Explosion in Mines*, the position being ascertained, adopt the process of artesian well sinkers. The danger may be prevented and the gas turned to advantage, as is the case with some natural gas jets.—In your advertisement of Warner's Bells, the expression "Chromatic scale" is used. Query, is this correct? "Chroma" is Greek, meaning colour; "Chronos," Greek, meaning time.—T. G.

\* \* \* The term "Chromatic," in music, is applied to the scale of semitones; so named, it is thought, because the notes of this scale were originally written in colours.—Ed.

**THE NEW ACT ON POLICE STATIONS.**—The new Act, to raise 60,000*l.* for building and improving stations of the metropolitan police, and to amend the Acts concerning the metropolitan police, has been printed. The Home Secretary is empowered to raise the sum stated on security of the police-rates in the metropolitan district. It is to be hoped satisfactory edifices will be raised.

**EXPERIMENT IN CAUSEWAYING AT EDINBURGH.**—The North-bridge, as the greatest thoroughfare in the city, has just been made the subject of an experiment in causewaying. The traffic in coaches, carts, and other heavy carriages, is considerable along this street, and hitherto the ordinary mode of causewaying with blocks of whinstone in regular courses has been found insufficient, the paviers scarcely being ever off the road. The experiment now put in action consists in making a bedding for the paving-stones of macadamised metal converted into a solid mass by heavy liquid asphaltum poured over it. The paving-stones are then arranged in wide courses, and the interstices are filled up with the same mineral substance, viz. melted asphaltum.

**IRON AND STEEL MANUFACTURE.**—Mr. H. Bessemer has patented an invention which consists in a method of manufacturing sheets, plates, bars, and other forms direct from fluid malleable iron or steel, in place of allowing the same first to cool and set in moulds. The forms of iron or steel thus produced may, if necessary, be passed at once from the rolls through between other rolls, in order further to perfect the manufacture, or the same may be re-heated either in the forms produced or when cut up and piled.—Mr. Leon Talabot, of Paris, has patented an invention for improvements on that process of converting crude iron into malleable iron or steel, which consists in passing currents of air, steam, gas, or vapour through molten crude iron. They consist mainly in admitting the current of air, gas, or vapour into the molten iron by means of a *moveable* pipe, which passes down through a crucible or vessel in which the metal is contained, the end of which pipe is made with a head or enlargement, pierced with holes, through which the air, gas, or vapour pass; and in forming the crucible or vessel for containing the iron of the shape of an inverted cone, and in lining such vessel with chalk, oxide of iron, or a mixture of the two together, or with any other substance which does not contain silica in a large proportion; or the crucible may be formed of sheet or cast iron, and used without any lining whatever, the exterior of the crucible being kept cool either by a rapid current of air, water, or steam, or any other suitable means. The last part of the invention consists in allowing the iron (from which all impurities have been removed by forcing air, steam, or gas through it) to solidify in the crucible in which the operation has been conducted, from which it can readily be removed (by reason of the crucible being of a conical shape), and either passed between rollers, or hammered in the ordinary way.

**STAINED GLASS.**—A stained glass memorial-window has been put in the chancel of the old parish church of Mutfra, by Mr. John Chapman, of Hill-end, late high sheriff for the county of Chester. The design includes life-size figures of our Saviour bearing the cross, the four Evangelists, the Virgin Mary, bearing the infant Saviour, and St. John the Baptist, St. Peter, St. Paul, and St. James. The window was executed by Mr. John Shaw, of Saddleworth.

**THE GREAT LANDING-STAGE AT LIVERPOOL.**—This structure was opened on the 1st instant; the inauguration ceremony being converted into the departure of the dock and municipal authorities, &c. on their annual round of inspection of the lights, beacons, buoys, and boundaries of the port. The landing-stage stretches from the southernmost point of the Prince's-pier, to which it is attached by four bridges. The floor of the stage is 1,000 feet long by 82 wide, and horizontal throughout its whole length, with the exception of a slightly-depressed portion at each end, for the convenience of loading and unloading the smaller class of steamers. Each of these depressed ends is furnished with an inclined plane, and two sets of steps, by which access is obtained to the main stage. The platform is supported on sixty-three pontoons, forty-nine of which are 80 feet long, 10 feet broad, and 5 feet deep: twelve, namely, three for each bridge, are 96 feet long, 12 feet wide, and 5 feet deep; and one at each end of rather smaller size than the forty-nine. These pontoons are rectangular in form, air-tight; and to prevent collapse, and facilitate repairs, are each divided into four water-tight compartments. The whole weight of the stage, with its bridges and mooring chains, is 4,000 tons, which causes a displacement of 100,000 cubic feet of water, with a depth of immersion amounting to only 8 feet. The whole cost of the fabric as it now stands is 140,000*l.* The contractors for the whole are Messrs. Vernon and Sons, of this town; the bridges having been sub-contracted for and executed by Mr. Fairbairn, of Manchester.



# The Builder.

VOL. XV.—No. 763.

**W**HILST "the iron is hot," and our subject—the relations between *architecture* and the other "arts"—is before our readers, we would strike once more, and endeavour to shape out some of those implements of argument, which, if well-wrought and sound, may be used in the exertions which we all are bound to make to establish our art in its proper and intended position. There may be now nothing new in our saying that architecture as art, has manifold relations, and might be conducive to social progress more than it has hitherto been; or that the importance to such ends, of study of the effect of a combination between objects of nature and art; and those other points which have lately been considered by us, are not properly appreciated. But, in order to inculcate views of art which we will assume are those of architects, certain opinions not merely must be held, but must be capable of being presented in such phraseology and sequence, as will hold the attention of the public. Truly, it is one thing to have what is ordinarily called knowledge; and it is another thing to be capable of communicating it, or doing justice to opinions—possibly in themselves correct.

The cause cannot spare the services of one soldier in the strife against ignorance, which is prevalent notwithstanding the fashionable study of architectural antiquities and history. The weapons must be well-tempered; and not one flaw in the armour must be left. To the correct appreciation of the nature and capabilities of the art, each one of us—to use the common form of speech—may contribute. But the very learner can be sensible of a defect in the teaching,—of an inconsequential position required of him to be taken up. He is easily conscious of a dropped link in the explanation, or argument; and his attention wanders very naturally, where the hold on his comprehension has been let loose. The indispensable requisite for all teaching, as for all art, therefore is perspicuity.

The public do not perceive the real purpose of art and the scope of *architecture*, because the art of architecture is what has been of late seldom exhibited to them; and they cannot admit, simply because they are told so, that such value may appertain to the art. We are thoroughly dissatisfied with the sort of interest which was shown in the exhibition of designs for the Government Offices. We confess we were led to hope for better results, judging from the number of visitors to Westminster Hall during the first week. Few of the visitors seemed to think it necessary to do more than look at the attractive perspective views—ignorant, apparently, that the real design of a competitor was that which was shown only in the whole number of his drawings, or was to be pictured in the mind after the study and combination of these, rather than seen on a single sheet of paper. Were such to be necessarily the result of giving perspective views, we could almost doubt whether it would not be better to exclude rather than require them. However that may be; to form any opinion of 218 architectural designs, from the one or two visits which the majority of persons paid to Westminster Hall, seemed really as absurd as it might be to give an opinion of the

works in a library from the mere inspection of the shelves and book-backs. Still, it would doubtless have been well—even for the educational result which was being served—to have had the exhibition open for a longer period.

But, the public having yet to become acquainted with the full scope of architecture, it is idle to complain, when the occasion arrives, that taste for the art is wanting. It has to be demonstrated that the art can raise emotions which are excited by beautiful objects, and can be studied with pleasure and advantage equal to what architectural history or archæology, as considered apart, can afford. Show that the subject will repay such attention; unfold the elements of the study, and direct the means to be taken in following it; and there can be no reason why art should not be pursued as any other new pleasure, such as the study of natural history, to which so much attention has been of late awakened.

When we find how much that is beautiful and interesting in the natural world has escaped the sight of the public, can there be any surprise that art should equally have remained in great part undetected? We therefore think that there is no real ground for the lamentations which we hear sometimes from those who have done the very most towards the production of good architecture,—regrets that after all, there should be no faculty of perception and appreciation on the part of the public. This complaint is, in fact, tantamount to an assertion that architecture is an art intended for the peculiar enjoyment of one class of persons—architects. The explanation of what is remarked, resides in the mere fact that the chief interest—we may even say beauty—of architectural art, requires the exercise of a certain amount of attention, for which there must be the conviction of an inducement. In this circumstance, art by no means differs from nature or any subject that can attract the perceptive faculties. Certainly, the higher pleasures from the acquisition of knowledge, are attainable only after some initiatory labour. If such be the case,—if the beauty of nature itself is not at once in all its phases discerned,—can it be wondered at that our art does not necessarily and instantly catch observation? As regards drawings, there is this also to be recollected—a thing obvious enough when spoken of, but too often forgotten—that the best views of buildings are merely the *representation* of the art, not the thing itself; they are essentially technicalities, and should not be expected to afford delight which it is reasonable to look for only from the actual work of architecture. If this last be properly presented to the public, we are inclined to think there is not the probability of apathy—such as is imputed to the public in exhibitions of architectural drawings. There is, it may be admitted, a certain difference in the aptitude of perception of the beauty in nature, and that in architectural art—but not more, perhaps, than might be anticipated. The love of natural beauty originates in an instinct, and is developed from the earliest period of life: the love of art—though of that which is founded upon nature—must be always a thing acquired, and varying with circumstances. But we do not believe that a result produced by architecture upon the common eye, is so entirely non-existent as is supposed. Take the case of the village churches of our country; the mansions of the olden time, or the "towers and battlements" that crest the rock, or are,—

"Bosom'd high in tufted trees,"

or the country seats, from princely Chatsworth and Castle Howard to many a smaller house with trees, garden-ground, and green sward about it; and from all these there will be some emotion experienced which must be referred, whilst partly to the natural scenery,

partly also to art. Where architecture is thus located, there is no want of power in it to impress itself upon the popular perception. Again, shall we be told that the public eye is wholly blind to the effect of the dome of St. Paul's, or the towers of many a Gothic cathedral, rising above the surrounding town, or of the almost unequalled scene of the quadrangle and colonnades of Greenwich Hospital? Recent architecture, then, fails to produce its due impression, from causes other than defects inherent in the art, or in the public.

The chief purpose—the exhibition of *art*—often is not realised because the mind of the observer is pre-occupied by a "little learning" in some style, which he makes a universal standard. He judges of what is before him by application of a particular code or grammar, properly suited to *buildings*—or considered apart from the whole scene, or true architectural effect, which requires the element of natural beauty—and those, buildings which belong not to our own time. He is too much occupied otherwise, to discover either the real beauty of the structure, or that of the combination of nature and art. Thus it may happen that an observer, less educated in the technicalities of architectural detail, though he may realise less in some respects, may realise more of that expression of art which we have been considering. It will not be unduly stated that the detail of the mere building is unimportant: on the contrary, detail both contributes more than is supposed to the general effect, and is required to afford the progressive delight for which in its absence, there would be only a soon exhaustible impression. Detail, too, is the element of a special combination with natural beauty—the combination of art-work in mouldings and ornament, with sunlight and shade—a description of beauty itself which can be unappreciated only because it is seen seldom in our towns, and in our climate and atmosphere. Even the professional architect, however, is apt to attach importance to details as though they held a primary place in the scenic effect: he begins by examining these, and is delighted when he finds something curious and novel; whereas his observation should rather pursue the natural course, and descend from the general effect to the particular beautiful features. The ordinary observer—for whom, after all, the art is intended—pursues a different course, and one which is perhaps most consistent with reason, as with the intention of the designer of the art-work. Such an observer may not arrive at the perception of all or many of the beauties of detail; but the professional observer passes over much that is of chief importance, in his search after what is minute and technical. This mistaken view of architecture is what has been fostered by those fashionable studies to which we have referred.

Every one is becoming critical as to mouldings and ornaments, knows what is synchronistic with a style, and vituperates the unhappy author of the slightest heresy in such particulars. Architects appear to have dreaded the imputation of ignorance, and have followed the lead,—inasmuch as they have been induced to give too little attention to outline, grouping, and mass; site and surrounding objects; general proportion, and breadth of shade. For one section of the public, the elements of architectural beauty which are most important are not provided; for the other—the amateur critics—an unfortunate mistake is fostered. The latter class are unlikely to discover that they are not contributing much to the advancement of *art*: they are absorbed in a pursuit—that of antiquarianism—which has heretofore been the occupation of narrow minds; which yet requires an annual protest that it has higher aims than are sometimes imputed to it; but which, even now, is followed as an amusement,



or an end, rather than as a means and as conducive to modern progress. Thus, the mere antiquary is the very opposite of one possessing feeling for art. He may admire what is curious, and even beautiful, in an old work; but he is unfitted by his constitution to recognise the particular beauty of real art,—which requires that there should be evidence of constant work and active mind. The predominant attention to style and detail, however, would be of less importance, as we have often said, were there general agreement as to the particular style which should prevail. In such latter case, the merely antiquarian or technical view of our art having worked itself out, amateur critics would turn to the real art, and appreciate it,—would see beauty which they now do not see,—and the result would be speedily that progress which is at present impossible. Gradual advancement, rather than sudden and frequent revolutions,—progress, in fact, as opposed to experimental attempts at revivification; the study, and in one manner the use, of all styles—yet the improvement and perfection of one; these are the best means—as they have ever proved—of producing grand works in our art, as they assuredly are of securing that public appreciation upon which so much depends. Therefore, we are justified in re-asserting that for the proximate future of art, it would be better that the worst style that ever was invented should be taken as a basis, so that there were general unanimity,—than that the present condition should be maintained,—opposed, as it is, to the chance alike of development of the art, and to the perception of it. But we have said so much on this subject, that we will only wind up our observations with the expression of regret at the loose views and misconception of the true art which prevail, and are engendered in our own body.

The art of architecture, then, whilst its expression can be even interfered with by technical elements and features of detail, is greatly dependent upon elements which can be appreciated by all, but which are most frequently left out of consideration. Often they contribute to the effect, by accident rather than design. How is it that that unpretentious brick-built dwelling-house, which we had in the mind's eye some sentences back, and which may be seen in many a pleasant nook in the metropolitan counties,—with little that would be called ornament or architectural detail, save a porch and simple cornice,—affords more real pleasure to the observer, and impresses itself better on the recollection, than many a street front not wanting in elaboration, or in merit of details? In the one, there may even be features of the worst character of that school of the Adams, which seems to have attained extraordinary prevalence; in the other, dressings of the best character, like those of the Farnese, or the Pandolfini Palace. Yet somehow, there is some element in the first which is lacking in the other. There is, perhaps, a projecting centre, octagonal or square; and the windows, however plain, may be grouped with some attention to structure, to symmetry of the front, and to proportion in the stories: but above all, the building has an obvious base and foreground; and it forms one feature of a group which takes in trees and sky, and terrace and garden-ground; and which attracts every eye, and delights every observer, unless him who begins by critical examination of the architectural details. On the banks of the Thames, in the neighbourhood of Richmond, and further up the river, there are many places which exemplify the effects that we have been considering. A surface of grass descending towards the stream; a well-turfed bank, or a lichen-covered retaining wall, with a simple moulded capping; trees, and objects animate and inanimate, making up a fresh picture from every point of view; the clear running water and pure air which may be met with here, but lower down the river are unknown,—life and movement which charm, without the confusion and noise which distract the attention in London; all these are elements in the effect,—but such elements as the art, or the building, appear to be in harmony with, and necessary to. We may refer to the present residence of the Duchess of Orleans, at Thames-Ditton, and the grounds of Garrick's Villa, at Hampton, each as seen from

the opposite side of the river—cases which we rather prefer to quote for the present argument, from their exhibiting little of architectural detail, or at least such as would be considered good. The effect of art referred to, however, is that which, whether called architectural or not, the architect must set himself to produce if he would have his art appreciated, and conducive to the great ends which we have supposed were within its scope.

This lesson it is his business to have learned, and to use where art is now most needed,—in the architecture of streets,—and to this branch of our subject especially, we shall next give attention.

#### THE GOVERNMENT COLLECTION OF RAW AND MANUFACTURED PRODUCTS.

Our notice of the collection of animal products in the Museum at Brompton having led to inquiries we find it necessary to give some particulars of the proceedings of her Majesty's Commissioners in this respect.

At the close of the Great Exhibition of 1851, a considerable number of foreign and home exhibitors presented to the Commissioners specimens of raw and manufactured products exhibited at that period: these specimens embraced parts of each of the thirty classes into which the Great Exhibition had been divided.

The classes—I. Mining and mineral products; II. Chemical and pharmaceutical products; III. Substances, vegetable and animal, used as food; IV. Vegetable and animal substances used in manufactures; and Class XXVII. (closely allied to Class I.) Manufactures in mineral substances for ornamental and building purposes; these five classes were most liberally contributed, and formed by far the greatest proportion of the specimens.

The entire collection was then carefully removed and deposited in Kensington Palace, in charge of Mr. Read, and a small staff of assistants. From that period the public generally lost sight of it and was unacquainted with the measures the Royal Commissioners have been engaged upon for the last five years at Kensington Palace.

Many of the foreign commissioners having expressed a wish, that in return for the specimens presented they should be supplied with samples of British products, her Majesty's Commissioners readily responded to the wish, and directed their officers to collect specimens of raw and manufactured products of the United Kingdom for presentation to foreign countries. These specimens were confined to examples of the four first classes, and class twenty-seven; and contained specimens of raw mineral products; series illustrating the manufacture of iron, steel, copper, and lead; chemical and pharmaceutical preparations of first quality; samples of our finest cereals and legumes, and other varieties of seed; samples illustrating the application of vegetable and animal matter for manufacturing purposes; and of class twenty-seven, interesting examples of the application of mineral substances for ornamental and building purposes. These specimens numbered in each set 708 examples, and were arranged in large trays, placed on slides, and inclosed in strong, well-finished cases. Two cases formed the set for presentation, and weighed together, when completed, nearly two tons. Thirty sets were formed, containing in the aggregate 21,240 specimens.

The following is a list of the countries that have had collections prepared for them:—America (United States of), Austria, Bavaria, Belgium, Denmark, Egypt, France, Frankfort-on-Main, Greece, Grand Duchy of Hesse, Hanover, Netherlands, Portugal, Prussia, Russia, Sardinia, Saxony, Spain, Sweden and Norway, Switzerland, Tunis, Turkey, Tuscany, and Wurttemberg.

The cases were accompanied with a printed catalogue, containing particulars of the specimens, a copy of the jurors' reports, and four volumes of the illustrated official and descriptive Catalogue of the Great Exhibition of 1851.

It is scarcely necessary to add, that the gift has been highly appreciated by the governments of the countries to whom they were presented.

A duplicate set of these specimens will shortly be exhibited in the Royal Commissioners' Gallery of Animal Products in the South Kensington Museum.

When this matter was complete, the Commissioners' attention was directed to the fact, that a very considerable number of the mineral products were in large masses, and the vegetable and many of the manufactured products presented to them were in duplicate. The Commissioners considered that it would be of the highest importance that specimens should be separated from the large masses of minerals, and samples selected from the vegetable, animal, and manufactured products, and formed into sets of speci-

mens for educational purposes, and presented to various free museums and mechanics' institutes of the United Kingdom. This idea has been fully carried out, and the following are the principal places that have received the benefit of her Majesty's Commissioners' consideration, viz.:—Chichester, Leicester, Sunderland, Winchester, Warrington, Canterbury, Truro (School of Mines), Birmingham (Queen's College), and the Museum of Economic Botany, Royal Gardens, Kew.

Each set of specimens contained from 600 to 800 varieties, and was accompanied with a MS. descriptive catalogue, containing particulars of their locality, uses, analysis, &c.

A duplicate set of these specimens will be exhibited in the Royal Commissioners' Gallery.

The public may possibly have entertained an opinion, that after the close of the Great Exhibition of 1851, the labours of her Majesty's Commissioners had ceased; but that is not the fact: ever alive to the importance of education, the officers under the Commissioners have been fully engaged in carrying out their views; and one important object has been to diffuse through the specimens of raw and series of manufactured products, presented to the various free museums, general information to the masses.

#### THE HOSPITAL OF ST. CROSS, WINCHESTER.

We hear that it is the intention of the trustees of St. Cross to give the "showing of the church" to the new clerk; in other words, to enforce a fee from all visitors. The *Hampshire Advertiser* has very properly protested against this, and we hope the trustees will re-consider their present intention. "Such a church, belonging to a public charity, should not be churlishly shut, to be opened only by the payment of money. Such a practice reminds one of the denunciations of the Saviour to the money-changers in the temple. St. Cross Church should be open to the inspection of all comers; so should be Winchester Cathedral, and it is no credit to the dean and chapter that it is not so. They have Westminster Abbey as an example, and the practice of all other countries to back it. At all events, let us hope the trustees of St. Cross will set a better example. If danger to the edifice is pleaded, we beg to refer them to the *Times* of Wednesday, where it will be seen that although 'Alton Towers,' the seat of the late Earl of Shrewsbury, was, by his direction, thrown open to the public, and though hundreds wandered daily through its beautiful saloons, a shilling's worth of loss or damage was never sustained." So let it be, and so would it be at St. Cross. The church of St. Cross, as our readers know, is one of the most interesting specimens in England of the transition in style from Norman to Early English; and, in conjunction with the cathedral, makes Winchester a place to be visited by all architects and lovers of ancient architecture and historical associations. The domestic buildings, too, at St. Cross, are full of interest. Many will regret that the establishment is not made available to a greater number of persons than is the case, as it might readily be; small as the whole number of brethren admitted is, five vacancies were allowed long to remain, and were filled up only in July last. The future allowance to the newly-elected brothers, subject to future modification, should it be considered desirable, is a weekly money payment of five shillings, one pound of meat, and one small loaf (1½ lb.) of bread per day, and two quarts of table beer. The former allowance to the brethren was three quarts of beer per day, with extra allowances on certain occasions. This has been reduced to two quarts per day, the saving thus effected being to be made up by an allowance of coals.

In the dining-hall of St. Cross, by the way, there is a very interesting triptych, which deserves more care than it seems to have experienced. The Virgin and Child, with other figures, occupy the centre, with St. Barbara on one of the leaves, and St. Catherine on the other. Some of the heads, that of St. Catherine for example, are particularly good.

At Winchester College, as at St. Cross, many more scholars might be educated than are admitted, and that too, with very little increase of cost. "Either learn or be off" (*Aut discas, aut discede*), says the inscription on the school-room, and some of the masters in past time evidently preferred that students should adopt the alternative. Public opinion will one of these days apply the "apple-twigs."

GOVERNMENT SCHOOLS OF NAVIGATION AND ART, AT YARMOUTH.—It is the intention of the committee to open these schools on the 1st of October next, says the *Norfolk Chronicle*, provided the preliminary arrangements can be effected by that time. Mr. T. W. Chevalier has been appointed to give instructions in the Art department. No master has yet been proposed to the committee for the Navigation school.





WELL AT THE CHATEAU DE MAILLANT, FRANCE.

## WELL AT THE CHATEAU DE MAILLANT, FRANCE.

The well, of which we give an engraving in our present number, has an originality in its form which attracts attention. It stands in front of some buildings connected with the Château de Maillant (Bourbonnais), France, belonging to the Duke de Mortemart. It is attributed to the end of the fifteenth century; and having become dilapidated, was repaired a few years ago under the direction of the able architect, M. Lenormand, who has restored it to its original condition.

## AN ACCOUNT OF ELY CATHEDRAL.\*

THROUGHOUT all the efforts of architecture in all time, but more especially pervading the architecture of the Middle Ages, were two great elements, both more or less evident in the same work: when one was not supreme, the other,—the Classic or poetic, and the picturesque. In the tabernacles, chantry chapels, altars and tombs, and buildings where the *petite* was most studied, you will always find the first and superior element, the ruling passion. The picturesque, which, when not carried to extreme, is as poetic as the other, is the most common attribute of Gothic architecture; so that many consider Gothic could not be Gothic without a certain rudeness, which is only the fruit of a too anxious desire for the picturesque. Our cathedrals and more extensive ecclesiastical buildings were built under the direction of those whose minds were certainly much more cultivated

than the people amongst whom they lived: their ideas were consequently more refined, and they were less liable to admire the coarse and vulgar than those of their own day; but equally with the accomplished writers of early days, including our great poets, who wrote many things the more civilized reader of a later day cannot but regret, the architects' grotesque gargoyles, bosses, misereurs, capitals, &c. were made the means of communicating the rude passions, feelings, and vulgar wit of the day. It is not, however, of these small points of peculiarity I will now speak, but more especially of the different general aspect of buildings. The poetic or Classic, with minor exceptions, would render a building not devoid of the picturesque, but ruled by a certain refinement that would enchant even the most ignorant. The picturesque elements would create a building where light and shade would form the most varied outline, with breaks in the building, continual and unequal, and the skyline irregular, all contriving to produce the most pleasing building, not at the same time devoid of some element of refinement. The first quality was continued throughout the middle centuries, and reached its culminating point in the Renaissance: the second ran to seed in the grotesqueness of the Elizabethan style; a style, a perfect child of those manners and feelings whose heterogeneity and inconsistencies are so difficult to analyse or explain.

I will not trouble you with the history of Ely Cathedral further than this far, that the building was founded in 673 by Etheldreda, who was wife of the King of Northumberland, and daughter of the king of the East Angles; that two of the bishops of this diocese have been made Archbishops of Canterbury, and that one was a Cardinal; and that later, Bishop Goodrich, in 1543, assisted in compiling the Book of Common Prayer, and also translated St. John's Gospels according to the present version; that still

later Bishop Turner, the friend of Kenn, was one of the non-juring bishops in William's reign.

The church as founded, taking into consideration only the present edifice, was originally designed, I have no doubt, nearly as now planned; that is, so far as the arch separating the choir from the presbytery, where the apse commenced. The style is now various; but I cannot but think the outline westward as precisely in the main feature as proposed by Abbot Simeon, who was appointed by William I. The apse and choir, now gone, may have been completed by him; but I feel satisfied the transcripts bear every mark of his time, although they may not have been built before he was deprived, in 1102, as this part strikingly resembles that portion of Winchester Cathedral as ascribed to his brother, the bishop of that see.

The church originally consisted of an apse, a choir with a chancel, which may have been carried round the apse, a central tower, probably not reaching any very great elevation above the roof of the church, transepts with side aisles, a nave and aisles, and a western transept, which formed a screen to hide roof of nave, as is the manner of the early German cathedrals, and that the tower was carried up to the later alterations of the fifteenth century, with that idea; but shortly subsequent to these erections, it seems the intention of the original design was altered, and that it was then contemplated to build a nave more westward, making the church into a double cross on plan, as at Salisbury. To carry out this deviation, the four pointed arches that are enriched with the transitional zig-zag were inserted under the tower, replacing, probably, arches that formerly existed of a less height, but which doubtless on three sides were somewhat like the arches to nave, forming a triforium arrangement across, in the same way as in some of the churches of the south of France of this date. I am inclined to believe there was a western entrance, as the entrances in the Norman style now existing were not, certainly, sufficiently important to fill all the requirements to such a building, and that this entrance was from a porch or Galilee, or possibly from an atrium imported from the south. The Galilee of Durham has more the impress of an atrium upon it than any other entrance in a cathedral in England, and this porch to Ely may very possibly have been designed even more in accordance with the idea of what was a suitable entrance to a cathedral in Italy, where was retained the open court or atrium, as attached to the ancient basilicas which were universally converted into churches.

Certainly, at Ely, if the entrance was a porch, that porch could not have exceeded the width of the tower, as there are no marks in the western wall of transept that would at all justify the belief in a larger. The entrance, however, might still have been from a court partially covered, of which idea I cannot entirely disabuse myself, as the screen entrance western fronts of Germany, to which this one bears so great a resemblance, without doubt were originated from the adoption of the atrium. The generally foreign aspect of the early portion of this cathedral, of which I will presently speak, inclines me to believe that the open court of warmer climates, although generally abandoned in England, might have been proposed when the original design for this building was framed. The Galilee of Durham is to all intents a covered atrium, and I have little doubt the chapel of Joseph of Arimathea at Glastonbury, which the Association visited last year, may have at one time served the purposes of an atrium or galilee to that abbey, as the doorways, of which there are two, north and south, are certainly out of proportion to the requirements of so small a chapel, were it not intended they should form the entrance to the church.

It is difficult, however, now to decide how the church was formerly entered, as the arches in the tower are most certainly not of a piece with the superstructure, nor do they at all assist the design of the present galilee: they are too lofty for it on the one hand, nor are they of the date of that which they support. I have not the smallest doubt that these arches were inserted with the idea of lengthening the cathedral considerably westward, and that in doing so the foundations of the tower were weakened, so that it became necessary, after the lapse of 200 years, according to Benthams, to enlarge and increase the columns as we now see them, which was commenced in 1406. This weakness in the piers was not in consequence, I am inclined to think, of the erection of the present octagon, but from the displacement of the more powerful piers.

Butham, in page 286, mentions the building of the octagon as added about 1380, but at page 148 he states it to have been built in the reign of Henry VI. which latter statement would prove that the weakness of the tower certainly had nothing at all to do with the raising of the building as it must have been strengthened previously. The style of the upper lantern certainly belongs to a later date than the tower

\* The following is the paper by Mr. C. E. Davis, mentioned in our last.



arches, as they are bold and well designed, whilst the lantern, although exceedingly picturesque, cannot be considered as the erection of so good a period: indeed, were it not for the beauty of the windows, I should be inclined to place its building, from the mouldings and the contour of its detail, nearer the debasement of the Gothic style.

After the insertion of the first three arches, the idea evidently was abandoned of lengthening the church, and the western arch was partially walled up, and made only to communicate with the present beautiful gallery, which is said to have been erected in 1215, by Bishop Luschnius. This gallery is of two stories, the lower is the entrance, and the upper lighted by three lancet windows, was formerly a gallery, which looked eastward into the church, where is now placed a modern perpendicular window, but which doubtless was open to the arch, as across which, when the later arches were built, a perforated balcony was placed. This upper story does not now exist, although the walls are unutilized, for the original roof has been removed, and replaced immediately above the groining of the entrance.

The whole exterior of the gable is enriched by four tiers of arcades stretching over the three sides, excepting only the three-light window and the entrance. They are all beautifully proportioned and well moulded, enriched with all the decorations of the style, the carving of which, including the capitals, which are without exception foliated, being of the most exquisite execution. The arches to the side screens on the lower stages are not foliated, but those in the front and on the upper stages are cinquefoiled. The poorest part of this gable is the design of the angular buttresses, which are like a bundle of columns tied together occasionally by the string-courses; and although more elaborate than the simple buttress of the style, is poor, and destroys much of the beauty that this building would otherwise have. I cannot account for this, in my opinion, bad design, except that this gable was built in the hope of harmonising better with the Norman screen. Certain it is, that although as to form this gable is inferior in general outline to that of Salisbury, and perhaps of Wells, in the same style, no improvement can be suggested when the *tout ensemble* is considered. The entrance to the porch, which I should mention is not square with the cathedral, but slopes northward at the western angle, is by a most exquisite doorway, in two divisions, under one arch, supported by a central four-centered column. The area, or tympanum, above these two arches, which are most admirably foiled and moulded, was formerly filled with stone, which may have been enriched by a sunk panel: a tabernacle for the statue of St. Etheldreda, St. Mary, St. Peter, or other saint, is now occupied by some decorated tracery, not in accordance with the design of the other part, but which, whether of modern or fourteenth century date, is strictly in harmony with the whole.

The Gable itself is of two bays, the groining springing from four detached columns, which bisect each side; each of which being divided into two tiers, the upper taking the form of the arching ribs, has a screen of six detached columns, supporting foiled arches, stilted or not, according to the form of the enclosing arch. The lower tier is divided by three trifoliate arches, beautifully moulded, and the hollows supporting them spring from the stone seat, but the groining of the recesses is supported by columns which fill the centre of every opening, and rest upon an upper string course or shelf, that at one time, without much doubt, contained sculpture, as indeed also the recesses above.

The entrance to the church corresponds precisely with that to the Gable, except that it is adapted to receive a door, and that the arches themselves are a trifle richer than the inner arches, being also more foiled. The same alteration has been made in the tympanum as has been made to the outer doorway. Through this door you enter at once the tower, which till lately was hidden by a lath-and-plaster groin, happily removed. The tower is arcaded, and is principally lighted by eight windows in the upper story, the recesses to which are so deep that only a portion of the upper part can be seen. On the western side, together with the south remains; the northern part, together with an eastern apsidal chapel, having perished. It is singular that there is no record of the demolition of this important part of the cathedral, which bears in its ruins every mark of being strictly a reproduction of the transept to the south: certainly, however, it is, that its fall was conscious, not as usually stated, from the irregular settling of the tower, but from its own decay, from bad foundation or other causes, or from violent storm or accident, which the main tower resisted. It is difficult to assign a date to the misfortune that prevented the fulfilment of the design of its style existing; but I am led to believe, in the first place, that it

was subsequent to the building of the arches of the tower, or even of the erection of the upper octagon, as there is an arch communicating with the north aisle of apparently as late, or even later date, than either the tiers or buttress. The fact of the existence of this arch to the nave would be no argument in support of any theory of the fall of this part having taken place subsequent to its insertion, but for the fact that the tower relied so much on the building to the west that it was found necessary to build a large buttress to support the tower, and they would therefore have scarcely weakened the remaining ruined wall by an archway, but rather have built an entire new wall. The buttress, also, that was built, bears upon the enriched panelling at its base every appearance of being a more recent erection, the arches being of a date certainly late in the Perpendicular period.\*

The transept that remains has been lately restored to what was probably its original purpose, namely, that of a baptistery, a font having been erected of a style to accord with the transept, which is the most beautiful of the Norman interior. The transept is peculiar, perhaps, in itself, as, although it bears the impress of uniformity at first sight, a close examination discloses its varieties, harmonising, however, with each other, evidently the result of one design, which it was not thought necessary strictly to carry out in every minutia. The arches westward are very fine, the one towards the tower having a flat soffit to the central portion, the other having a rounded: both are enriched with the surface zig-zag, generally considered an early form of that ornament. The arcades above are somewhat as the nave. From the transepts, projecting eastward, is a small apsidal chapel, lately restored, said to be St. Catherine's Chapel. It is a very pretty little sanctuary, and forms, with the transept, a singularly interesting portion of this most interesting cathedral. The restoration of this chapel so exactly matches the old work in the interior, that it would be exceedingly difficult to ascertain if it were not the original had the builders not neglected to copy the invariable practice of mediæval workmen of omitting the key-stone, whether in circular or pointed arches, and supplying its position with a vertical joint between the two crowning voussoirs of the arch. I should mention that, forming a part of the southern pier of the arch to this chapel, which forms the base of the aisle, is, about 3 feet from the floor, a mutilated block of stone, the former credence-table.

The transept is at present roofed and framed with horizontal heavily-moulded braces with square panels. I think these cannot be as the original, but I have little doubt the transept, and perhaps the nave, were in the first place roofed upon tie-beams, knee-trusses resting on the semicircular shafts which ran from the floor, and which in the transepts terminate in square capitals, and intended certainly for a framing much more bulky than that at present existing.

The nave of twelve bays, shortened one bay from its original length upon the building of the central lantern, is flanked on either side by groined side aisles, the lower divisions of the side walls of which are simply arcaded, as originally designed. The windows to each bay of aisles were in the first place single circular lights, having square jamps, with an internal attached column supporting a plain soffit arch flush with jamb, the exterior double recessed, with an attached column and billet-moulded jamb and hood. Those to the south have been restored, but those in the north are still as altered, and enriched by tracery. I think it would be unwise to disturb these windows, as the varieties of different centuries teach us the varied feelings of those times; and, therefore, to destroy their work, unless erected to the extreme detriment of some much richer and more ancient treasure would tend to isolate the architecture of the first era, destroying the connection which we now feel individually with the Norman and the early styles, as we can with certainty retrace step by step, as by a ladder, the labours of our predecessors from the work of yesterday at Sydenham to the chapel in the Tower of London.

The *coup d'œil* of the cathedral looking towards the choir is, perhaps, as fine, or even finer, than in any other cathedral I have visited, but the building wants that severity and massiveness common to the Norman to be seen in the cathedrals of Durham, Norwich, Gloucester, or even in the collegiate church of Tewkesbury. It seems evident that the architect, in designing Ely in its earliest styles, aimed at the refinement I have previously spoken of, avoiding as much as possible the Grotesque. A great deal was gained in the after-building of the cathedral from this preference, as it best be apparent even to the most cursory observer, that the various styles of architecture subservient to

the cathedral of Ely are singularly refined and studied, and I can only account for their being so by supposing that the early refined Norman taught the builder in the Early English period the propriety of the same course, and that this style, as the previous one, stimulated its successors.

The nave and arches, said to have been built, according to Mr. Sharpe, in 1180 (by Bentham, in 1174, who I am inclined to think was in error), are of three stages, the first consisting of semicircular arches of very small span, upon piers, which, contrary to the appearance of Early Norman in every other particular, are rather late in character, as they are not the simple ponderous shaft, but are a series of partial columns, which give an unusual rectilinear effect, more common to a later style. The arches themselves are stilted, and some even assume somewhat of the horse-hoe form. Above these arches is the open arcade of the triforium, which is rather lofty, and unusually light. This last may be owing to the insertion of the Perpendicular windows, which supply the place of the single lights. The arches of the triforium are stilted, as below, and each arch again is divided by a single shaft, supporting two smaller arches. In the clerestory each division is lighted by single lights, behind an arcade of three arches. Throughout each bay there is a great want of enrichment, none being even attempted save in the string courses. The design of this nave goes far to convince me that there was an almost precisely similar style of Norman in England, coeval with the Conquest, and that native artists still continued, even after, to design and direct our buildings, and that their creations were the grand Norman architecture which we have at Durham; and here I have no doubt a foreign element was introduced, as this Norman bears a very strong resemblance to the sister churches of Caen, &c., retaining, at the same time, the simplicity common to the bolder architecture of the same date in England. In the north aisle, four bays from the west, is an entrance to the new ruined cloister, which, on its first foundation, extended from the south transept westward eight bays, bringing the return of the square immediately opposite this door, which fronted the western side of the cloister stretching towards the present deanery. The Norman cloister was arched against the wall of church, which, singular enough, was not destroyed when the cloister was enlarged and rebuilt in the Perpendicular period, as this portion was never vaulted, to avoid, perhaps, the destruction of the arcade. When the cloister was built another bay was added in westward, and this side is vaulted with fan tracery, two shafts and the commencement of the vaulting of the tracery still remaining against wall of church. The doorway from the church is now known as the Prior's Entrance: it is inserted in the wall through a portion of the arcade, with which it does not in any way accord. I am inclined to think that this doorway and the one I will presently describe entering the cloister more eastward, were removed from some other buildings, and re-erected in the places where they now are at some very early period; probably upon the building of the first cloister. The carving of the prior's entrance is exceedingly rich, occupying all available space, the whole of the impost, arch mouldings, and capitals being thickly sculptured with interlaced carving. Each jamb contains a column attached to the inner angle, the front face of the jamb projecting to form a pilaster, each of which is carved into a series of medallions; the western one containing figures of animals, with that of a man in the upper compartment; the other, representations of men and women playing on different instruments, or otherwise enjoying themselves, one turning head over heels in the excess of pleasure, another engaged in giving a token of affection to what we will assume is a lady of the time. Surrounding these medallions, but occupying a space beneath the capitals, is the elevation of a cast-iron gateway; that on the right-hand being curtailed of its roof, to admit (as I suppose) its insertion in the situation in which it is now found. The columns, as is frequent in Byzantine architecture, but rare in Norman, rest upon the figures of some animals now too much mutilated for me to describe. The tympanum of the doorway is sculptured in tolerable relief with the figure of our Lord within a vesica piscis, held up by two angels sitting, holding an open book surmounted by a cross, in his left hand; his right being elevated in the act of benediction. The other doorway, which I previously referred to, leads direct into the eastern side of cloister from the cathedral against wall of transept: it is of corresponding work with the other, but I think scarcely so beautiful, although of more complicated design, the surface decoration being not quite so elaborate or so universal. It has the addition of another column on the impost, and the tympanum is cut away into a foliated head. At first sight it seems difficult to recognise this form as the original design, but on examination, I have no doubt of it.\*

\* To be continued.

\* The panelling at the base corresponds with that on the screen of the Bishop's Chapel, which dated 1405, so that this fact may probably give a date to the fall of the northern transept.

† On the exterior is a mark of the former roof which was much more elevated than at present.



## SYMMETRY IN NATURE AND ART.

HAVE you ever viewed a scene in Nature which had not been indicated with by man's hands that could be pronounced ugly? In the most barren and uncouth spots there are a wondrous variety of colour and harmony of tint, which are satisfactory even to the coldest eye. There are, however, distinct features of Nature, which, by the peculiar arrangement of forms, and by the grandeur of their proportions, have an indelible effect upon the senses. Amongst these, are lofty mountains, which, like Mount Ararat or Mont Blanc, tower over smaller forms in mighty pyramids; and this pyramidal form constitutes one of the most striking features in the composition of many of our greatest works in architecture, sculpture, and painting. The largest and most ancient of the works of Egypt, some of the chief buildings of India, and our own old cathedrals, show, in their exterior forms, an imitation of, and convey somewhat similar impressions to, the mountain shapes just mentioned.

Grand as are those shapes which tower gradually toward the sky, the level lines of the ocean, and extended plains, have, with their accompaniment of clouds and other effects, a scarcely less telling effect upon the mind; nor are the graceful sweep of bays, and those intermediate circular and other forms which help to combine the plain with the pyramid, without their peculiar uses in appealing to the eye; and those varied lines, like the notes of music, are the first materials which are placed by Nature before artists to be used by them to convey similar pleasure to the eye by their harmonious arrangement, in the same manner as music does to the ear.

If we look with attention at some of the finest examples of our Gothic architecture, it will be found that a principal cause of the picturesque, or what we call artistic effect, is the grouping of both the larger and smaller masses into angular and other simple geometrical forms; and it will be observed that the best of our sculptors and painters have arranged their works on similar principles.

Greek architecture has been shown to be a skilful combination of truthful forms, arranged by the genius of those days with such nicety that we have not since been able to excel their fair proportions. Handel, Mozart, and other musical composers, had but certain notes, each of simple and not unpleasant sound, but which, by skilful combinations in these masters' hands, produced the most sweet as well as the most grand results.

From the most remote times, and at the very dawn of civilization, the triangle, the circle, and the cross, have been considered as sacred types, which have become so in consequence of their being the distinctive elements of truth; and it is a feeling for truthful and geometrical forms which in a chief measure constitutes the famous artist. It is probable, however, that many painters grouped their figures by an instinctive feeling, and were scarcely aware that they were arranging them in such distinct angles and circles that the masses might be marked by rule and compass.

Take, for instance, some of Rembrandt's finest works: place them at a distance, and observe in how many instances the broad mass which catches the eye assumes a pyramidal form; and then, on closer inspection, observe how distinctly the same principle is carried out both as regards the light and shadow and the outlines. It might seem, at a first glance, that the piece of armour on the wall, which just catches a glimmering light, the group of objects on the table, and the books upon the floor, are placed on these spots by accident. A little examination will show that they are placed here to perfect one of those true forms to which we have alluded. The picture of the "Mill," one a dark and the other a light effect, by this artist, will be found to be very distinct in their arrangements.

In pictures of stirring action, the angular form of composition has been chiefly used. Take, as examples, the "Murder of the Innocents," by Raffaele, and the stormy sea-pieces of Turner, and note the number of angles into which they can be divided. In the more celebrated battle-pieces this principle has generally been observed. In some, the charge and rush of armed men has been successfully given by the almost mechanical arrangement of the same lines. Clenell's "Charge of the Guards at Waterloo," is a successful and characteristic example. In this fine work the bolts and swords of the soldiers, the colours, the lines of the horses, and the sky, all bear in the same angular direction, with the exception of a slight upright form, which not only serves to balance the composition, but also gives motion to the repeated lines. The same principle may be observed in the sea-pieces of Vanderveld and Turner, which are remarkable for the appearance of action which has been given on the painted canvass. In these the sails, the masts, the lines of the water, and the sky, all except one little sail—bear the same way.

The sun, the moon, the rainbow,—lovely forms

which gladdened the eyes of man before architecture or painting were thought of, were in due time imitated, and the circular principle of composition has been brought into use by both architects and painters. In olden times we find such mysterious erections as Stonehenge, and then arose arches and domes.

Painting, as an art, is but an infant one in comparison with architecture and sculpture; for it can scarcely be considered worthy of comparison with the latter, until the knowledge of perspective, harmony of colouring, and the principles of composition, had been brought into use: and the pictures of the school of Raffaele are amongst the earliest examples of the combination of these qualities. In several of his pictures, Raffaele has given an extraordinary effect of grandeur and solemnity by the circular grouping of his figures. In a pen-and-ink sketch of the death of Ananias, by this great artist, in one of the libraries at Oxford, the figures are grouped in such a perfect oval that it might have been struck with the compasses: the dying man is in the centre, and eyes and terror-stricken countenances, and movement of hands and arms, all directed towards the point of interest, produce a wonderful effect upon the imagination. In other pictures by this painter, he has arranged the figures in severe straight lines, and has by that means given wonderful effect. This stern and uncompromising composition in pictures seems to have a similar effect to the deep bass notes of music.

It is somewhat an abrupt step from Raffaele to the late John Varley, the water-colour painter. Although, however, the mind of the latter was not to be compared with the lofty intellect of the former, John Varley was a man of considerable and original genius; and we remember a drawing by him of the Funeral of Saul, which was composed of a repetition of the horizontal and upright lines just alluded to, and which gave a most impressive idea of deep solemnity. In one part of this fine work tall cypress-trees stretched upwards in straight lines, the arms branching off at right angles: in the middle distance a bridge passes across the picture, along which the funeral is slowly passing, looking dark against the last twilight: the bridge, the lights and shadows on the water, and the sullen, heavy-looking clouds, are all horizontal, and it is surprising how well the repetition of these severe lines and the sombre colouring suit the nature of the subject.

In others of Turner's glorious landscapes, he has not used less the arrangement of geometrical lines. Notice how the eye in some of these sweetest works is enticed by beautiful forms from place to place,—both by colour and lines. The geometrical construction of great pictures is a matter on which much might be said: my object is, however, but to glance at it, and to recommend that students should take engravings of the best subjects, and consider the arrangement which has been here alluded to.

## ARCHITECTURAL COMPETITIONS—COMBINATION SUGGESTED.

SIR,—The almost weekly occurrence of fresh advertisements for competition, in your valuable paper, which are in themselves not only disgraceful on the part of the committees who issue them, but direct insults to a profession which ought to number amongst its members none but those who can lay claim to the title of "gentlemen," leads me—one of that profession—to offer a few remarks on the subject of competition generally, with the view of bringing the matter into something of a tangible shape for the future.

Much has been already said on this vexatious subject, and it may almost be thought that there can be nothing further added. In this, however, I am of a different opinion; and I believe that, if architects will only be united, the public may be brought to see that their present treatment of an honourable profession is one which is totally at variance with good faith and justice, and ought to be given up.

What is the object, as far as the public is concerned, of competition? Surely, to enable them to avail themselves of the greatest talent that the prospect of a fair remuneration will bring to their aid. But what can be its object when that fair remuneration is not offered? Perhaps one of the "governors of the Moulton Endowed Schools" will answer that question, for it entirely baffles my ingenuity to find out. It is, however, a well-known fact, that the inducements to enter into competition are, in the majority of instances, very far short of that fair remuneration which the profession ought to expect. But is this case why is all the blame to be attached to the unfortunate public? Architects are to be blamed who will work for little or no remuneration, why are the public to be blamed for expecting them to do so? I believe that this is the key to the entire matter, and that if the profession, who, it is presumed, are in earnest in

their wish to alter this state of affairs, would only set about them, and, looking the matter fairly in the face, determine not to give in for any competition but those in which they may look forward to a fair remuneration, as well as honourable treatment, the desired result would be gained.

Cannot something be done at once to free ourselves from the present anomalous state of affairs? I think much might be effected by adopting a means which is in almost universal vogue, except amongst architects, at the present day, and that is *combination*; and I therefore venture to make this appeal to my fellow-architects. Let the profession, then, in a united body, combine and establish amongst themselves a sort of "etiquette" which shall hinder each of them individually from entering into any competition, unless fully assured that they do so on such terms as may be remunerative and honourable; and let them, in return, give the public such assurances of honesty and straightforwardness as will give them confidence that they do not wish to have all the benefit on their own side only.

Allow me, therefore, to suggest, through the medium of your valuable paper, the following half-dozen hints as materials towards forming a code of rules to be adopted by the profession (both in London and the provinces) for their guidance in this matter:—

1st. That no architect (who has now, or may hereafter signify his approval of the above-named object) shall enter into any competition unless fully assured as to the capability of the tribunal or committee to decide on the merits of the designs submitted.

2nd. That no architect, &c.,—unless the carrying out of the works is secured to the author of the best design, or that decided upon by the judges as the one to be carried out.

3rd. That no architect, &c.,—unless the plans, specifications, and drawings necessary for the execution of the works are acknowledged to be the property of the authors thereof, and that the committee or promoters of the undertaking have no claim whatsoever to them.

4th. That no architect, &c.,—unless it is understood that the premiums are payments for merit, and not to be merged into the commission payable to the successful architect, or for the purchase of the competition drawings.

5th. That no architect, &c.,—unless the premiums offered are to a certain extent remunerative, and unless at least two premiums are offered.

6th. That no architect, &c.,—unless it is properly understood that the estimates given in with the designs are merely approximate estimates.

The four first rules it is self-evident are very much required, and might almost be adopted as given. The two last, would, perhaps, require some further consideration to bring them into working order. For the rate of the premiums, for instance, perhaps no arbitrary rule could be framed, as there would, doubtless, be much difference of opinion amongst architects themselves as to what would be remunerative. I have, however, thought of this matter a good deal, and beg to offer the following table as a suggestion for consideration:—

	FOR AN OUTLAY.					
	Under 3,000L.	Above 3,000L. and under 5,000L.	Above 5,000L. and under 10,000L.	Above 10,000L. and under 15,000L.	Above 15,000L. and under 30,000L.	Above 30,000L. and under 50,000L.
1st Premium	50	100	150	175	200	250
2nd ditto	35	75	100	125	175	225
3rd ditto	20	50	75	100	125	150

The sixth rule proposed is one of only common fairness to architects where an amount is named in the instructions, for it would hardly be expected that they could, in the time given to prepare the drawings, go minutely into detail so as to ensure or guarantee their estimates. Something ought, however, in fairness, to be conceded to the public as a guarantee of the good faith of the approximate estimate; and it is a discredit to the profession that it so often happens that the estimate given is so much under the actual amount of the builder's tender. On this point, too, there is a manifest unfairness to the other competitors whose plans may have been prepared and can be executed for the amount named. It is rather a questionable point whether any amount should be named in the instructions; but leaving this question for the present, in such a case as we are now dealing with, I would suggest the following plan of proceeding. That if more should be any very glaring discrepancy between the approximate estimate and the lowest tender, the committee shall be at liberty to put aside the first premiated design without any remuneration whatever, as from the excessive cost it is virtually out of the pale of the competition, and proceed to prove whether the second premiated design can be executed for the amount named, and if so, to adopt it, awarding to it the first premium; but if, on the other



hand, a discrepancy should again occur, then to take the same steps with the third and other designs, until they arrive at the one that can be executed for the sum stipulated.

I throw out these matters as mere suggestions, and as such they will, I hope, tend to bring forward the opinions of others. I do not arrogate to myself the idea that they would, if acted upon, be successful, or that there may not be grave objections to them, or that they contain all that is necessary; but I do think if the public saw that the profession were determined to adopt some such rules as these, it would put an end to much that is at present very unpleasant, and bring about a better knowledge as to what is due to architects as a professional body of men. At any rate, the appearance of this (I fear over long) letter may tend to ventilate the matter, and cannot, I think, do any harm.

AN ARCHITECT.

#### WHAT WOMAN MAY DO.

##### A RECOLLECTION OF TWO FRIENDS.

It is pleasant to look back on associations though now passed away for ever, which not only afforded the gratification of congenial social intercourse, but the example of public spirit and unflinching benevolence. I turn to the recollections of the Misses Kennett, late of Hans-place, for such example, and feel persuaded that the building profession and the Christian world at large will bear with me while I recapitulate, as briefly as may be consistent with the truth, the efforts of these ladies (long since departed), to alleviate misery and to adorn this capital with two of its best and most useful institutions. The younger sister, Miss Louisa Kennett, had her sympathies awakened on behalf of the destitute seamen of this country, by an account which she read in the *Times*, of some shipwrecked sailors being lodged in the Compter, for the want of some suitable place of refuge. She was told, indeed, by some friends, that there was a place called the Destitute Sailors' Asylum, somewhere in the City, but on making personal inquiries and investigations, she found that this so-called asylum was a wretched hole, supplied only with straw for the nightly accommodation of the wandering and distressed mariner. Deeply grieved that so miserable a shelter was all that the world-renowned merchants of London had provided for the destitute and homeless beings who were chiefly instrumental in bringing wealth to their coffers; deeply indignant, too, that the nation, which benefited so largely from their ill-requited labours and perils, had never supplied the deficiency which must be daily and hourly felt, she at once commenced her labour, with all the energy which so nobly distinguished her character. She called upon all her female friends, and asked, with that earnestness which apathy itself was ashamed to resist, and which often changed indifference into zeal, their indefatigable co-operation in her design. This was to get up a fancy bazaar, at the Green Man, Blackheath, and so well was she supported that the sum of 600*l.* was realized by the sale. With this sum the good work was commenced, and a subsequent sale was held, I think in the Painted Hall, in Greenwich. Under the auspices of the late excellent Captain Elliot, whose character is so deeply engraven on the heart of every sailor's friend, the Destitute Sailors' Asylum reared its unobtrusive walls, in the near neighbourhood of that noble Sailors' Home, which so long enjoyed the invaluable benefit of his superintendence. It was opened about a year after its commencement, in the presence of a numerous assembly of persons.

The merchants of London, awakened by these interesting and successful efforts to a sense of their own duties to the maritime community, have (to their honour be it spoken) never permitted the institution to lack support since its inauguration; and to the day of Captain Elliot's removal from this chequered world to the eternal recompense of Christian faith and love, it was the object of his beneficent care.

May I be permitted to lengthen this paper by stating also a few interesting facts in connection with that noble hospital in the Fulham-road, dedicated to those numerous sufferers from consumptive disease, who, before its establishment, had no definite refuge for their affliction. This much-needed hospital owes in a great measure its existence to these indefatigable sisters. Conversing one evening with an intelligent and excellent friend, a barrister, I think, residing in their neighbourhood, and deploring with him the great chasm which remained to be filled in the medical charities of the metropolis, he at once said that he would devote 500*l.* to the purpose, if others would join him in the work. The recollection of former success naturally occurred, and a fancy fair in Chelsea-gardens, on a magnificent scale, was the result of the untiring efforts of the Misses Kennett. They called on all their friends to lend their aid, and these soon spread amongst their respective circles the proposal, one that was met, indeed, with especial favour. The results were very gratifying; the Prince,

Consort attended in person, and made purchases at every stall. Five shillings was the entrance fee on the first and select day—half-a-crown on the second. If I remember rightly there were three days' sale, and a numerous attendance to the last. Contributions of considerable amount followed these labours; and who, in contemplating the commodious building in which the consumptive patient often obtains restoration to health, or has the slow and painful progress to the grave, smoothed by kind attentions, and cheered by religious consolations, will not rejoice that the zeal of these sister philanthropists was thus nobly manifested?

They both now sleep in their graves, the younger preceding her sister by many years. The elder Miss Kennett possessed considerable skill as a miniature painter, and as an amateur, obliged her friends with their likenesses. One of Mrs. S. C. Hall, I remember perfectly, and understood that it was an excellent resemblance. It is trusted that these reminiscences of two ladies, who thus efficiently served "their generation ere they fell on sleep," will encourage the exertions of others, in causes still requiring advocacy and combined exertion, and that the latter half of the nineteenth century will exhibit to admiring posterity two establishments quite as much needed; one for the destitute boyhood, the other for the destitute girlhood of London. If bazaars be thought objectionable, as they are by some, small subscriptions from the million would quickly raise the required sum, as suggested in a former paper. Who are the friends of the juvenile population of London condemned to poverty and its associate misery? Who will put their hand to this great work? "We pause for a reply."

S. E. M.

#### PROPOSED COMPETITION FOR PRISONS AT TURIN AND GENOA.

We have been requested by the Sardinian Minister to make known to architects that designs are desired for two prisons in Turin and one in Genoa. The cost of one of the prisons in Turin (580 cells) is fixed at 62,400*l.* and that of the other, 50,400*l.* The cost of the prison at Genoa is not to exceed 64,000*l.* One prize is offered for the two prisons in Turin, of 820*l.* with further premiums of 100*l.* and 60*l.* for the second and third best. For the design for prison in Genoa, the premiums offered are 240*l.* 80*l.* and 48*l.* A copy of the conditions will be found at our office, in York-street.

#### ELSTON MONUMENT, IN CHRIST CHURCH-YARD, DONCASTER.

THE monument which has just been erected in the burial-ground of Christ Church, in Doncaster, to the memory of the members of the Elston family, stands upon a solid plinth 15 inches deep, chamfered, from which rise octagonal steps up to the subbase, with mouldings and weathering, &c. returning to a square on plan, the face of which is enriched with diaper work of ivy and thorn leaves, diagonally and alternately arranged. Above this, there is a moulded base, from which rise buttresses, surmounted by gables, crocketed with the leaves of the ivy, thorn, maple, vine, and columbine, having finials of the same character, the terminations of which have sculptured heads. This forms the first stage of the monument. The second stage is formed of four arches, supported on attached shafts, with carved foliated capitals, having at the angles buttresses, panelled and terminated in like manner with those of the lower stage. The arches are filled in with cinque and trefoil tracery, the spandrels of the latter being pierced: those of the former are filled in with foliage, the cusp terminations being carved. The hollow mouldings are enriched with an entwining rose ornament. The gables of this stage, above the arches, are filled in with tracery, and the mouldings are enriched with an entwined ornament of the ivy, surmounted by crockets and finials of columbine, thorn, &c. Under these gables and arches are deeply-recessed panels, upon which are engraved inscriptions to the memory of two of the family deceased, in illuminated characters of the fourteenth century. At the springing of the gables of the buttresses are sculptured groups of angels emerging from clouds, the crockets, &c. being studied from natural foliage. Above the gables of this stage springs the spire, in which are introduced spire-lights, with gables, filled in with tracery of delicate arrangement; the carving composed of convolvulus, ivy, &c. having gables, pinnacles, and angles of the spire crocketed, and terminated with finials. The finial of the spire is surmounted by an ornamental gilt cross. The monument is enclosed by wrought-iron railing of Medieval character, manufactured by Messrs. Haist and Son, of London, which is of a dark ultramarine colour, picked out in gilt.

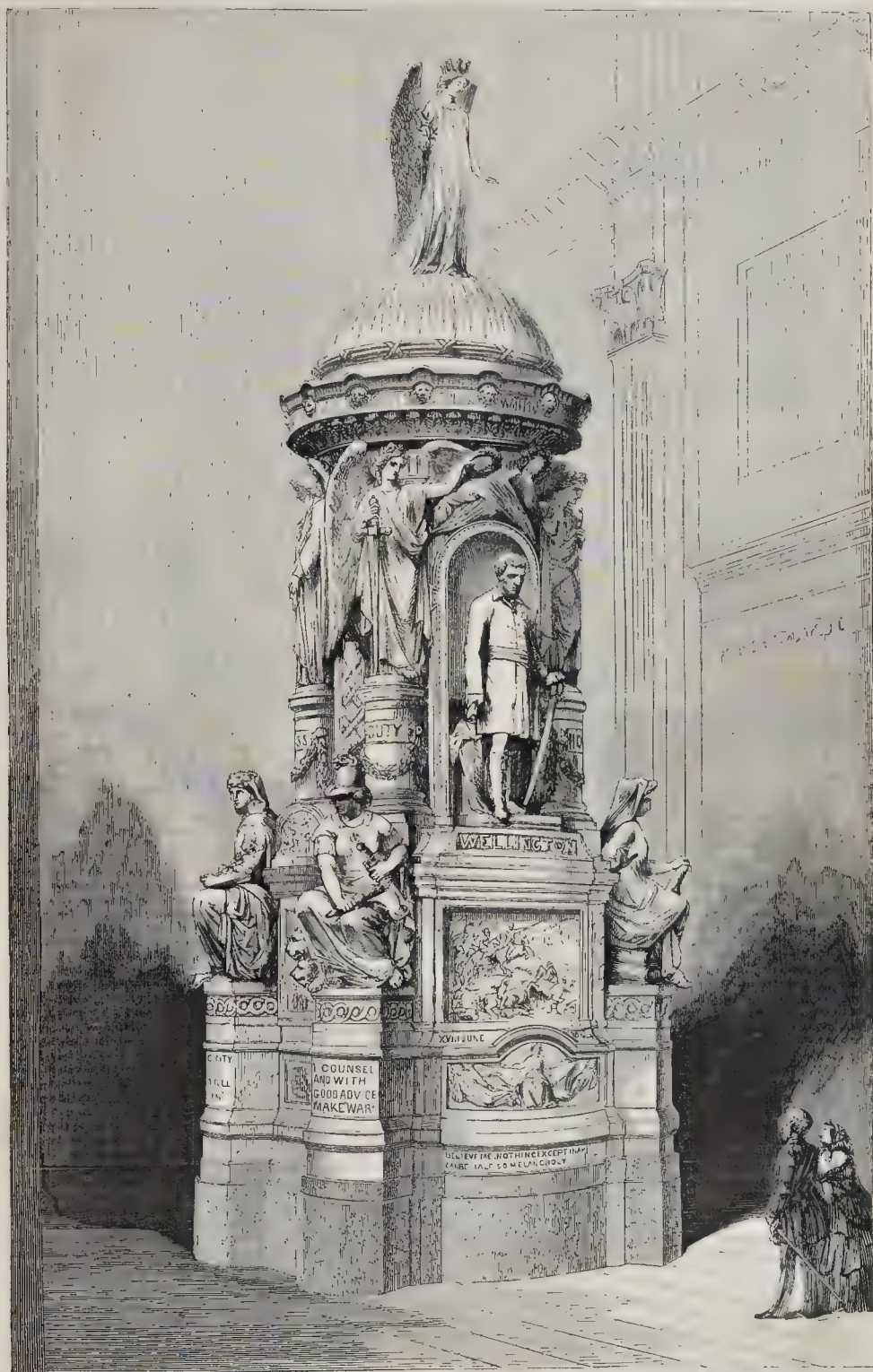
The design is the production of Mr. Penrice, of Doncaster. Mr. Phillips was the carver. The general work was entrusted to Mr. Charles Lister. The cost will be nearly 400*l.*

#### THE WELLINGTON MONUMENT.

THE author of the design which we engrave, Mr. John Thomas, claims to have prepared it in strict accordance with the plans, elevations, and perspective views, of the locality of the proposed monument, together with the printed conditions issued by the Chief Commissioner of Works. Not foreseeing that the judges, in giving their decision, would themselves ignore the instructions of the Board of Works, the sculptor studied the position which they had determined upon for the erection of the monument, little thinking they would expressly declare, in making their award, that they had not taken into consideration the all-important question of site. Had all the artists allowed themselves this liberty, their designs would probably have been different in nearly every case, and the author of No. 68 would, in all probability, have taken a different view of his subject, had he not felt bound to consider it quite as much in an architectural as in a sculptural point of view, in order that his design might harmonise with the edifice, of which it was intended to form a part. We have already expressed at some length the opinion we entertain of this design, and on the present occasion will content ourselves with giving some descriptive particulars of it. The base of the monument supports a pedestal, having four alto-reliefs of the principal incidents in the life of the warrior and statesman, together with four bas-reliefs beneath. Those in front represent the decisive charge at Waterloo, and Europe sending out messengers of Victory and Peace, beneath which is inscribed a quotation from the Duke's memorable despatch of the 19th June, 1815:—"Believe me, nothing excepting a battle lost can be half so melancholy as a battle won." In this, as in every other instance, War is marked as a necessary evil, always to be avoided, when, without dishonour, the laws, commerce, and religion can be properly maintained. The panels on the opposite side show the Duke standing forward in the House of Lords, on the 28th May, 1847, and manfully acknowledging that, through conviction, his former opinion upon the corn laws had changed, and thereby obtaining a large majority in favour of the measure. In the panel beneath is Britannia, as Commerce, welcoming the introduction of foreign corn in exchange for her manufactures, with the words, "The profit of the earth is for all." The panels at the side of the pedestal represent the Duke terminating his campaign in India; and beneath are shown the horrors of war. Upon the opposite side, the Duke is seen presiding at Queen Victoria's first council; and beneath are shown the blessings of peace. Above each of these subjects are the Duke's arms. The buttresses at the angle of the pedestal support the four principal attributes of the Duke's character, together with appropriate inscriptions, viz. War,—"By counsel and with good advice make war." Legislation,—"Be zealous for the laws, and give your lives." Prudence,—"The prudent are crowned with knowledge." Fortitude,—"The integrity of the upright shall guide them."

We now come to the principal feature in the design. The Duke, in a contemplative attitude, is standing in front of a niche; his left arm rests on a sheathed sword, and in his right he holds a scroll. The reason for placing the figure of the Duke in this position was, that had it been placed between the eye and the window, nothing but the outline would have been seen; and the author, therefore, deemed it necessary to form a background, which should not deteriorate from the prominent position of the Duke; indeed, in all cases, the figures have been so managed that they in no way obtrude, or in the slightest degree detract from that of the Duke, who stands out as the most prominent object in the design, although each subject may be seen to bear a decided relation to the whole. In a corresponding niche at the back of the design sits a figure of Justice, with her hands holding the appropriate emblems, and resting upon the Holy Bible: beneath is the quotation, "Execute true judgment according to truth." The two sides of this portion of the design are embellished with the eight buttons, presented to the Duke by the great potentates of Europe. Standing on pedestals at the four angles are Victorias; those in front hold wreaths of oak and laurel, in the act of crowning the hero; while their wings cover the upper portion of the niches, and form, as it were, a canopy over the Duke. Immediately above these figures comes the cornice, the principal enrichment being palan-leaves; and on the fascia, separated by the heads of lions, are inscribed the chief battles in which the Duke was victorious. The whole composition is terminated by a winged figure of Peace, holding in her hand an olive-branch; whilst her glory is spreading its rays of light over our western hemisphere,—typical of the Duke having brought peace on the world.





A DESIGN FOR THE WELLINGTON MONUMENT (No. 68, "INTEGRITY").—By Mr. JOHN THOMAS.



## PROVINCIAL NEWS.

**Banbury.**—The two new corn exchanges were opened on Thursday in last week. The western portion only of the central exchange is yet built: that is complete excepting one window at the west end and the plastering of the interior. Thirty stands had been prepared, and shortly after the opening they were all taken. The Cornhill exchange building is less advanced. The roof is complete only in the centre, leaving a considerable space at either end uncovered, and the floor has yet to be laid.

**Christchurch.**—A public meeting was held on the 11th inst., as to the erection of a new town-hall here. The report of the committee appointed for that purpose was read, and a plan for a new hall laid before the meeting. Resolutions were proposed and agreed to, adopting the plan, and a committee appointed to canvass for subscriptions.

**Winchester.**—The new market-house here is nearly completed, and will be opened for public use on the 29th inst. It is a building of the Doric order, with fluted columns, gateway, and cornices of Bath stone. It has five entrances,—one from the Square, two from Market-street, and two from the High-street. The front facing the High-street is surmounted by a bell tower.

**Shenstone.**—Little Aston Hall, the seat of the Hon. E. S. Jervis, High Sheriff of Staffordshire, in course of renovation and extension, is now near completion. The architect is Mr. E. J. Payne, of Birmingham. The building (an example of the tasteful Ionic of the last century) was originally a parallelogram, but in its present restored and greatly extended condition forms a centre, with two wings 14 feet in advance of the main portion. The style adopted is that of the fenestral Italian, elaborately enriched, and the material used is Hollington stone (similar to that employed in the Midland Institute). The elevation of the ground-floor throughout is rusticated, and the windows are square-headed, with projecting keystones, the quoins and dressings being vermiculated. The fittings of the various rooms will be of wainscot, French polished; and the floors will be of oak, with a border of Swiss parquetry, supplied by Messrs. Arrowsmith, of London. All the rooms are heated by the warming apparatus of Mr. J. E. Hodgkin, of Birmingham, the hot air passing through perforated brass gratings in the windows. The water for the supply of the establishment is brought from a distance of nearly a mile, being propelled by means of a water-wheel into a cistern on the roof, 135 feet above the level of the spring. The whole of the work has been executed by Mr. Cresswell, of Birmingham.

**Blackburn.**—In a report by the borough surveyor on the progress of the main outlet sewer and the works connected therewith, he says,—"The progress of the sewerage works will be, for some time to come, very slow, because it is as yet confined to so limited a space; but so soon as the present contract is completed, we shall be enabled to extend the area of operations, and to embrace some important undrained districts. As the outlet is advanced there will be nothing to prevent the employment of almost any number of hands; so that the sewerage works may really assume such a character as to give reason for the hope that at length the whole borough will be included in this very desirable result. Nothing of a very extended character can be accomplished before next spring; but, by that time, the works should be in such a position as to provide employment for a large number of men, and to enable the subsidiary mains and branch drains to be extended into the very heart of the town."

**Bradford.**—The foundation-stone of the Sunday and Day Schools proposed to be erected in connection with St. Andrew's Church, Horton, near Bradford, has been laid. The schools will give accommodation for 500 children and infants. There will be three separate schools, with a class-room attached to each, and so arranged that the three may be made into one large school-room. There will also be two residences included in the group of buildings, one for the schoolmaster and the other for the schoolmistress. The style of the architecture will correspond with that of the adjoining church, which is the Decorated of about the time of Edward III. The architects are Messrs. Malinson and Healey, of Bradford. The cost of the buildings, including the site, will be about 2,600. The wages now required has been obtained within 300. Seven gentlemen subscribed 100*l.* each towards the object.

**Leeds.**—It is stated in the *Intelligencer* that the municipal authorities have resolved not to make common sewers in streets which have them not already, till two-thirds of the owners of the adjoining property shall agree together to signify their willingness to make the branch drains from their respective houses. It is naturally feared this action of the voluntary principle will be rare, and most so in densely-populated and homely streets, where drainage is most

needed. There are numberless streets, remarks the paper alluded to, old enough to have been made tributary to the sewerage rate from the time of its first imposition, which are still unimproved, and which must remain so many a day, if the initiative of the work by two-thirds of the owners is to be waited for. It ought to be remembered that the health of the whole town is in peril so long as large and populous districts are left undrained, to breed fevers and epidemics; and that the work which has already been done will do far short of reducing the sanitary effects hoped for from it till it has been carried to completion. Instead of waiting in the way resolved on, sewers ought to be put in, and the owners compelled by law to drain their houses into them,—especially such houses as those complained of.

**Glasgow.**—Messrs. Charles Tennant and Co. of St. Rollox, are about to build a new school-house near their works. The style of the building is to be "of a mixed character of Grecian and Roman," and the situation is to be on the south side of Low Garngard-road, on ground belonging to the firm. The principal entrance is from Garngard-road, with vestibule and lobby, the lobby screened by glass-door and side-lights. On the east is the initiatory school-room; on the west, the writing school-room; on the south, the elementary school-room, with conveniences, and playgrounds for boys and girls, separated by a wall. The upper flat, towards the north, is to be occupied as teachers' dwelling-house, &c. On the south is a hall intended for instructing females in various branches befitting the sex. There will be accommodation for between 400 and 500 scholars.

## CHURCH-BUILDING NEWS.

**Stoke.**—The new Roman Catholic "Church of Our Lady of Angels and St. Peter," which has been built within the last fourteen months, on Cliff Bank, overlooking Stoke, was opened on the 8th inst. with the usual ceremonies and festival observances of the Romish Church. The pile altogether consists of the church, presbytery, and convent—the latter, however, being as yet little more than a guest-house—and one half of the cloister of the intended convent. At present the presbytery is the only part of the establishment which may be said to be in a complete state, so far as the architecture is concerned; but having been commenced subsequently to the other buildings, it will not be ready for occupation for some time. The convent or cloisters are already occupied by nuns, or Sisters of Mercy, from the establishment at Stone, from which the present institution is an affiliation. The church is in the form of a parallelogram, 80 feet by 50 internally, and consists of nave, 28 feet wide, and two aisles, of 11 feet each, separated by an arcade of circular stone piers and simply moulded arches. The entrance porch is at the south-west angle, behind which is the baptistry, with entrance out of the north side. Above the porch is the entrance chamber, communicating with the choir gallery for the community, access to which is obtained by a staircase. At the west end of the north aisle, in connection with and forming a part of the convent on the same level, is the chapter-room, with an arched roof, and lighted by traceried windows, three on each side. The church is divided into six bays, and has a clerestory of three-light windows with double sequent arches and tracery. A four-light window with tracing occupies the west end. The south aisle and baptistry have three-light windows of similar form to those in the clerestory. The north aisle abuts on the cloister, and is without windows. The roof of the nave is arched and divided into panels by wood mouldings. Moulded and arched principals resting on triple shafts of stone with carved capitals and corbels separate each bay. The aisle roofs are also divided into panels, but are without principals. The baptistry is floored with Minton's encaustic tiles, and separated from the nave and south aisle by a light screen of wrought iron. It contains a font of Caen stone, resting on marble shafts, and has a sacarium attached, which stands on a guttershaft of red Devonshire marble. Externally the edifice is built with red and yellow bricks in stripes, five courses of yellow or buff bricks to one of red. The windows and other architectural features are of Hollington stone. Surmounting the roof of the convent there is a crocketed spire. The cloisters have ornamented roofs, the spandrels of the arched principals being filled in with tracery, and the floors are paved with Minton's encaustic tiles. The architects are Messrs. J. and C. Hanson, of Clifton, and the builder is Mr. James Bryan, of Stoke. The total cost of the entire structure, exclusive of many of the internal fittings and decorations, will amount to about 6,000*l.* Mr. Jeffries, of Stone, had the contract for the benches in the church, which will accommodate six or seven hundred persons.

**Chester.**—In a paragraph, which appeared in the *Builder* lately, a boss recently discovered in the Lady

Chapel of Chester Cathedral was noticed. Attention has since then been drawn to two other massive bosses in the same chapel, and various opinions have been hazarded as to their true significance. Of one, that in the centre, it was thought, there could be no doubt; for it evidently represented the "Madonna and Child," while that at the extreme east was, as previously stated, a symbolic rendering of the Holy Trinity, setting forth more particularly the "Crucifixion of Christ." The third, or western boss, was dogmatically pronounced to be the "Murder of Thomas a'Becket!" and it was so described, the other day, to an antiquary, who, in the following communication, shortly sets the matter right:—"The editor of the *Archæological Min.* believes it to be incorrect to describe the last boss in the Lady Chapel of the cathedral as the 'Murder of Thomas a'Becket.' He considers that the three bosses describe the three most interesting events in our Saviour's life, and that this third boss is 'The Ascension'; that the other two represent, firstly, 'The Crucifixion—the cross being supported by the Father;' and, secondly, 'The Virgin nursing the Holy Child.'

**Liverpool.**—The new synagogue erected in Hope-place, was consecrated on the 9th inst.

**Newmarket.**—The committee appointed at a general meeting recently held at Newmarket, to consider as to a memorial to the late Duke of Rutland, have agreed that the scheme of a parsonage-house for the poorly-endowed living of All Saints, Newmarket, where there is no residence for the incumbent, with a commemorative inscription in honour of the late duke, should stand alone in the first class, as the most eligible of all the plans proposed. The other forms of memorial suggested were—1. A memorial window. 2. A statue. 3. Almshouses. 4. An addition to the funds of Adenbroke's Hospital, to be called "The Newmarket Memorial Fund."

**Chorlton-upon-Medlock.**—The first stone of a new Presbyterian chapel was laid in Brunswick-street, Chorlton-upon-Medlock, on the 7th inst. the old place of worship in Lloyd-street being inconveniently situated, and a more commodious structure required. The new chapel will be in the form of the Latin cross, with tower and spire 163 feet high. The principal arm of the cross will be for the chapel, and the transepts for schools, &c. The style is to be the Decorated Gothic. The chapel front will be in Brunswick-street, and will consist of a centre gable, flanked by the tower on one side, and the gallery staircase and porch on the other. The centre gable will contain a four-light window, with tracery, and a wheel window above. The chapel will be five bays in length, divided by two-light windows and buttresses. There will be entrances from Brunswick-street and Rumford-street. The inside dimensions of the chapel will be 75 feet by 46 feet, and 23 feet to the springing of the roof. The roof timbers will be visible. There will be galleries round the sides and one end. The body will seat 520 persons, and the galleries 380. There will be school-rooms, vestry, &c. cellars, and a playground. The whole will appear as one building externally. The buildings will be faced with parpinto and stone dressings. Mr. Mark Foggitt, of Manchester, has contracted to erect the chapel portion for 4,469*l.* The design is by Messrs. Clegg and Knowles, of Manchester.

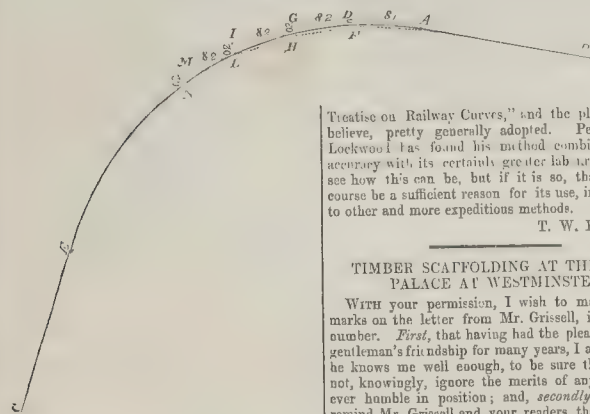
**Alston.**—The opening of a new Roman Catholic chapel at Alston, near Preston, took place on the 8th inst. It is dedicated to "our Lady and St. Michael." It is of plain construction. The style of its architecture is Early English, and it will seat 600 or 700 persons. Its entire length is 83 feet, width 35 feet. The chancel window has four lights, and is filled with green cathedral glass. A gallery extends across the west end of the church, and the west gable is surmounted by a bell-cote. The roof is high pitched, the principals and other timber work composing it being stained. The entire structure is built of stone from the Longridge quarries. Mr. John Todd and Mr. Thomas Turner, Preston, were the contractors, the former for the masonry, the latter for the joiners' work. The cost of the building is stated to be from 1,300*l.* to 1,500*l.*

**Southwale.**—A meeting of the ratepayers of the new parish of Slaithwaite-on-Lingards has been held for the purpose of considering and accepting an offer by the Earl of Dartmouth to enlarge, rebuild, and adorn the chancel of the church, where the accumulation around the communion-table has long been found inconveniently small. The chairman laid before the meeting the plans and specifications which had been approved by the earl and the archdeacon. The estimated cost was about 150*l.* and it would be defrayed entirely by his Lordship, who possesses the rectorial or great tithes of the new parish. The designs have been prepared by Mr. R. W. Moore, of Leeds. The offer was unanimously accepted.

**Truro.**—The foundation-stone of a new Independent Chapel, which is to be built on the site of the old one, in River-street, was laid on the 8th inst.



## TRACING RAILWAY CURVES.



I HAVE read with much pleasure Mr. Lockwood's account, in the last *Builder*, of his mode of tracing railway curves in tunnels. His plan is certainly very ingenious, and if great care is taken, no doubt most accurate. I do not, however, see the advantage his plan possesses over the usual method to compensate for the increased difficulty and trouble consequent upon the use of the theodolite for each successive line. The mode I allude to as most generally used will be seen from the following example:—

Let CE and AB be two lines which it is required to join with the curve of a given radius. The radius and the points from which the curve is to commence are supposed to have been previously determined. Now let  $d$  = the distance apart of the points required to be found in the curve,  $r$  = the radius of the curve, and  $o$  = the offsets DE, GH, IL, MN. Produce AB to D, and mark off the distance  $\delta_1$  found from the following formula:—

$$I. \sqrt{d^2 - o^2} = \delta_1$$

The offset  $o$  is found thus:—

$$II. \frac{d^2}{2r} = o_1$$

which is set from D, and gives the first point E in the curve.

A line is now ranged through the points A (starting point of curve) and F (point last found), in the direction G, and the distance EG or  $\delta_2$  measured. From this point the offset GH ( $o_2$ ) is set off, and gives the second point H in the curve.

The distance EG or  $\delta_2$  is found thus:—

$$III. \frac{d(r - o_1)}{r} = \delta_2$$

The offset, GH, or  $o_2$  is found thus:—

$$IV. \frac{d\delta_1}{r} = o_2$$

Each successive point is but a repetition of the last operation,  $\delta_2$  and  $o_2$  being the constant distance and offset after the first.

This plan will be perhaps better understood if I give an example in figures:—

Suppose the radius to be 20 chains, or 1,320 feet, the distance apart of the pegs that are to mark out the curve 1 chain, or 66 feet; then DE ( $o_1$ ) or the first offset  $\frac{d^2}{2r} = \frac{66^2}{2 \times 1320} = 1.65$  feet.

AD ( $\delta_1$ ) the distance to be measured from the starting point A of the curve =  $\sqrt{d^2 - o^2} = \sqrt{66^2 - 1.65^2} = 65.98$  feet.

EG, H, I, L, M, and all succeeding distances ( $\delta_2$ )  $\frac{d(r - o_1)}{r} = \frac{66(1320 - 1.65)}{1320} = 65.91$  feet.

GH, IL, ML, and all succeeding offsets ( $o_2$ )  $\frac{d\delta_1}{r} = \frac{66 \times 65.98}{1320} = 3.299$  feet.

The advantage of this method over that of Mr. Lockwood's is, that no instrument is required. On the other hand, any slight error made in setting out the first point must, in ranging out, occasion a considerable mistake. Still if the  $\delta_2$  and  $o_2$  be calculated with care, and the lines carefully ranged out, this plan must be as accurate as Mr. Lockwood's. In a tunnel a greater length could be set out at a time, since no space would be required between D and the flank wall, to set up the theodolite.

The formulae I have used are taken from "Law's

Treatise on Railway Curves," and the plan is one, I believe, pretty generally adopted. Perhaps Mr. Lockwood has found his method combines greater accuracy with its certainly greater labour. I do not see how this can be, but if it is so, that would of course be a sufficient reason for its use, in preference to other and more expeditious methods.

T. W. P. ISAAC.

## TIMBER SCAFFOLDING AT THE NEW PALACE AT WESTMINSTER.

WITH your permission, I wish to make two remarks on the letter from Mr. Grissell, in your last number. First, that having had the pleasure of that gentleman's friendship for many years, I am sure that he knows me well enough, to be sure that I would not, knowingly, ignore the merits of any one, however humble in position; and, secondly, I wish to remind Mr. Grissell and your readers, that my paper referred nearly EXCLUSIVELY to the peculiar scaffolding with steam-power employed for the three great towers of the building, and the design and application of this scaffolding, at any rate (as I fancied Mr. Grissell knew) emanated entirely from the architect's office; where, as I mentioned in my paper, my father's designs for it were most ably worked out and carried into effect by his assistants, Mr. Meson and Mr. Quarn.

The ordinary framed timber-scaffolding used throughout the rest of the building, was only alluded to very briefly by me; and not being able of my own knowledge to speak positively, I said I BELIEVED that the first introduction of this system was at King Edward's-school, at Birmingham, erected under my father's direction, in 1834, where I am informed it was carried out by the contractors for the mason's work, under the architect's clerk of works, Mr. Cowlishaw. This occurred several years before the erection of the Reform Club, and the Nelson column; so that the idea could hardly have been derived from these works. I had certainly never heard of Mr. Tomkinson's use of a like system, in his stone quarries, mentioned by Mr. Grissell, and the date of this gentleman's use of such scaffolding is not mentioned.

The object, however, that I had in view, in reading my paper on this subject, was not at all to settle the date of the first use of whole timber-framed scaffolding, in lieu of the old system of poles and ropes, though I was most anxious not to misstate this fact, but to draw attention to the novel application of it to the ascending scaffolds of the towers of the New Palace, at Westminster, where its efficiency has been made so much more conspicuous than before by the combination with it of steam power.

CHARLES BARRY, JUN.

WITH respect to Mr. Charles Barry's paper on the timber scaffolding used at the Houses of Parliament, and Mr. T. Grissell's observations, pray allow me also to add one or two corrections. Timber-framed scaffolding and machinery were used for building purposes years before King Edward's Grammar-school at Birmingham was commenced, at the Liverpool Docks, at the Liverpool Black Rock Light-house, at the Custom-house, and at other public and private buildings in Liverpool. The late Mr. John Day, managing foreman to Mr. John Tomkinson, introduced and improved "setting-staging," and "setting-machinery," if he did not invent it. Most certainly Sir Charles Barry did not invent this method of setting. I think I can speak with some authority, as I believe Messrs. Grissell and Peto obtained their information relative to Mr. Tomkinson's setting-machinery from myself, at the time when I was under an engagement with that firm to take charge of the work at the New Houses of Parliament. The profession must be very much obliged to Mr. Charles Barry for his valuable paper on the scaffolding and setting machinery used at the New Houses of Parliament: any claim of originality Sir Charles can afford to give up, as a successful adapter often deserves more credit than the inventor. I do not, however, say so much in this instance, as the late John Day carried his mechanical arrangements to something like perfection. He introduced travelling-frames, travelling-crabs, and travelling-shears, working by steam-power. His system was ever adapted to the special work to be done, in the most simple, ingenious, and economical manner. Mr. Tomkinson will, I feel sure, bear me out in these remarks. The whole of St. George's-hall, Liverpool, was set by

staging, machinery, and steam-power, on the late John Day's plan, adapted by Mr. Turner, son-in-law to Mr. Tomkinson.

Having had something to do with inventing, improving, and adapting during my life, in the various branches of my profession, I have long given up any idea of claiming to be original, or the first to do anything; and I feel sure that if Mr. Charles Barry will inquire further, when preparing his next paper, which I trust will be soon, he will find that, however new to himself, some old fellow, dead and buried many years, if not centuries, had *stolen his ideas*. If he escape this misery, he will be far more fortunate than your humble servant.

ROBERT RAWLINSON.

P.S. You have very properly warned Government, calling upon them to give attention to sanitary arrangements for the British army in India. A sanitary commission, with an army actually in the field, was probably something new (though, mind, I do not claim it to be so); but most certainly the knowledge frequently said to be new on sanitary subjects is not new. There are the works by Sir John Pringle on "Army Diseases;" James Lind, M.D. on the "Health of Seamen;" and Dr. Mead on "Pestilential Contagion." These works may be studied with singular advantage, and a manual of instructions for army and navy may be drawn up from them for general use. The greatest men (such as Sir Charles Barry) can well afford to give up the claim of *invention*: plain, simple, common sense and economical adaptation, is the greatest possible invention.—R. R.

## INDIAN ART IN THE WESTERN WORLD.

We may look for an addition to our knowledge of the great Indian cities in the west. M. César Daly, the editor of the *Revue Générale de l'Architecture*, to which excellent publication we have often referred, has just now returned to Paris, after a trip of nearly three years' length. During this time he has made a special study of ancient Indian art in the Western world. He has visited America from Canada to Panama, wherever the disorders attendant on civil war did not repulse him. In Nicaragua, the struggle was even favourable to his designs, for seventeen Yankees, desirous of visiting the wilds and mountains of Segovia in search of gold, on learning his intention to join the party, chose him as captain, and gave him considerable influence over the direction of their route; and as he had nothing to do with gold mines, his game being ruins and old monuments, he had the advantage of a strong escort, and penetrated into wilds that the Spaniards did not occupy. "But my most productive trip," he writes us, "was in Guatemala. I have measured the Acropolis, as I may so call them, of their temples, palaces, seminaries, and fortifications, of three great Indian cities; and I have been able to collect very interesting data about their painted architecture, sculpture, and other matters, which I intend to publish as soon as possible." Knowing well M. Daly's qualifications for the task, we may safely predicate valuable results.

## LONDON ORGANS.

As you have lately inserted several communications on London organs and their builders, and as the subject seems to have excited a measure of attention on the part of some of your correspondents, may I be accorded space for a brief memoir upon matters connected with our late discussion.

Referring, then, to "W. V.'s" letter, the fine instrument, at Spitalfields church, was originally built, *not* by Schmidt, but by Bridge, Byfield, and Jordan, in 1780, for 600*l.*; a sum, even at that time, considered very little for an organ of such size and power. Byfield, Bridge, and Jordan were all able artificers, and built, conjointly, several fine organs. Of course, the lapse of time has generally necessitated repairs in most instruments; still, in spite of alterations, we can point to the organ in St. Magnus, as a fine specimen by Jordan, while at St. Bartholomew's the Great—a structure greatly admired and well known for its massive Norman architecture—there is a curious, and far from despicable specimen, by Byfield and L. R. Of this, perhaps, the worst feature is the case, of very poor design. The same remarks will exactly apply to their organ at St. Alban's, Woodstreet, both works being ascribed to about the same period, viz. 1780-8. Little-known organs, by Schmidt, exist at St. Catherine Cree Church, and St. James's Garlick, Hith; the latter, truly grand and noble in appearance, both very little altered from their original condition. Not long since, that ornament of the city, St. Mary's Aldermany, was repaired, as was also the organ—quite a model of an old-fashioned cathedral instrument, except that the choir (organ) is not in front—but it by England, Green, and Russell, late in



the last, or early in the present century. Its excellent position on a screen, two or three bays eastward of the west wall, contributes greatly to improve its tone; in addition to which, the admirable acoustic properties of the church impart a resonance greatly conducive to musical effect. The case, though not devoid of elegance, is hardly in accordance with the present improved standard of taste; but it is interesting, as showing the design of the period.

The organ at St. Clement's Dances,\* besides new keys, pedals, and other mechanical details, will be much improved by a new swell to tenor C, with 10 stops, including a double diapason and contra fagotto or double reed. This has been undertaken by Mr. Robson. That gentleman also rebuilt Schmidt's fine organ, at the Temple Church, some time ago; substituting new mechanism for the old, but using and re-working all those invaluable pipes which charmed in their earlier days the ears of the greatest connoisseurs, and which continue to do so up to the present time.

The reference to the "almost hallowed" inscription in St. Paul's cathedral, to Wren's memory, "*Ni monumentum*," &c., reminds me that, to general readers, it is hardly known to be from the pen of the architect's son, Christopher. This would seem to afford an additional reason, were one wanting, why its removal should, if possible, have been avoided; and, at all events, tempts one to hope for the existence of that good feeling which would, certainly, ensure its prompt restoration.

A CHURCHMAN.

P.S.—You have occasionally devoted some space to a record of epitaphs, remarkable either for singularity of thought or diction. The following, to the memory of a former organist of the church, in which it is placed, at Hull, may be worth printing. It runs thus:—

"Though like an organ now in ruins laid,  
Its stops disorder'd and its frame decay'd;  
This instrument, ere long, new tun'd, shall raise  
To God, its maker, notes of endless praise."

#### A CENTRAL "PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH, ACROSS THE RIVER.

SEVERAL great questions on which the future development of London, as a city, is concerned, are now pending. May I claim your indulgence for the insertion of the following idea?

The little "village of Charing," as it was in Elizabeth's time, is now topographically the centre of London. Let us turn to the map. Trafalgar-square, we see, is on the north bank of the Thames, and on the outside of the bend that is made (in the widest part of the river) about Hungerford Market. The opposite bank, therefore, at the other end of Hungerford-bridge, forms the inside of this bend.

Let us consider, now, the space at this latter point comprised within this bend, and by the following boundaries:—On the north, by the river between Westminster and Waterloo bridges; on the south, by the South-Western Railway; and on the east and west, by the Waterloo and Westminster bridge roads. Keeping the eye on the map, it is to be remarked that all the main bridges of London converge to, and radiate from, this point, making extended transit easy, and rendering this spot, in this respect, more the centre of London than Charing-cross itself, besides its direct accessibility by water.

The space thus indicated is at present chiefly occupied by tenements of a poor description and dilapidated houses, and my idea is, that it might be well for Government to possess itself at once of this area, or the major portion of it, with a view to the future development of London. This area might be terraced high above the river, affording wharfs and warehouses beneath, and a noble river-front for such open spaces or public edifices as might hereafter be determined on. This area, which affords the finest view we have of London, I would connect by a bridge of unexampled width with the north bank and with Trafalgar-square; for the present, only by throwing down the houses in Craven and Northumberland streets, in the Strand, but with an ultimate view to the removal of Northumberland House, so as to extend the open space and vista from Trafalgar-square down to the river-side, and then across a bridge of great width, to the area above mentioned on the south side of the river. Sir Robert Peel is said to have characterised Trafalgar-square as the noblest site in Europe! What would it be then? Could such a scheme be realised, is it too much to say that the result might be not only without equal, but without parallel?

In the mind's eye the whole area comprising the spaces on either side of the river, and the connecting expanse of bridge between, must be viewed as one great space, available not only for some of the public edifices now in contemplation, but for relieving the

\* The interior of this church, particularly in its present state, is well worthy of notice, as a specimen of its architect's abilities.

traffic of London just at the point most required; and also as connecting substantially the two sides of the river into one city (for which the time may be thought to be come), and as affording a grand centre and lungs to London.

In an architectural point of view, I need not dilate on the scope the development of such a scheme would afford to British genius. In a more general public view I believe there is still more to be said.

The above idea is far from a new one with me; and if you think my views worthy of consideration in your valuable journal, I shall be ready to afford some details to the above sketch.

EPSILON.

#### THE BROTHERTON MEMORIAL.

SIR,—The decision that the committee have arrived at seems to me unjust towards those competitors who strove to comply with the instructions furnished by the committee in making their designs so as to come within the sum named. This is another instance of a picture design gaining the first prize, and is a violation on the part of the committee, judges, and the competitor. We must remember it is not a monument to be placed in a cathedral or church, but in the open ground of the cemetery. How long will it be before the angelic figures cast their burden on the bosom of our mother earth? Of what use is the massive canopy resting on the hair of the heads of the celestial figures, eight in number, each looking as if the book that is placed in its hands was the latest illustrated edition of Fox's Book of Martyrs? The whole of whom have turned their backs on the Pagan urn with its wet blanket. It is too bad for the noble art of architecture to be treated in this style, to see these representations of celestial beings stuck up on the author's first floor (as it is called in the description which is in the gold frame) as so many dead shores. Really this is Paganism with a vengeance—a poor copyism from the heathen days of the Greeks. What would the 60,000 Sabbath-school teachers and children mentioned on the monument of our Queen in the Park, outside the Exhibition-room window (Peel Park), think, if they saw their earthly Queen and the royal princesses her daughters supporting on their heads, with their slender necks, the extinguisher of All Saints' Church, Portland-place, London?

I beg to suggest that clustered shafts, with foliated cups, should take their place, and that a statue of the late Mr. Brotherton be placed in the centre; it will then look like a memorial of a citizen employer, and a representative of his nation, and not of Greece. It will not take any glory from the committee; they will see that I have not disturbed the twenty canopied niches with the full-length figures, which the author has placed on his front ground-floor. If they can forego these figures, the expense might be added to the sum saved by doing away with those on the first floor, and might be given to a respectable sculptor for the Brotherton statue under the canopy.

#### AN EXHIBITION WANDERER IN SALFORD AND MANCHESTER.

#### HOUSES FOR THE WORKING CLASSES.

WHEN travelling in the north of Ireland lately, I had an opportunity of inspecting some houses for the working classes, which have been recently erected in Belfast, and whose plan, novel as it is, may not be uninteresting at the present time to many of your readers, who are turning their attention to this subject. The whole "land" of which I speak is 75 feet long by 22 wide, and consists of three stories. Through the centre of the building runs a hall, 7 feet wide, leading to the common staircase. The ground flat is divided into six tenements, one entering from either side of the grand hall, and the other four from two smaller halls opening on the street, one at each extremity of the building. It is the plan of the two upper flats, however, that is particularly worthy of notice. Each of these contains six houses, all of which open on a balcony or corridor, of 6 feet in breadth, running the whole length of the building. The corridors project beyond the side wall, and thus do not encroach on the space allotted to apartments, and they are protected by a railing extending from floor to ceiling. At both ends of the corridors there are stone "jaw-boxes" or "sinks," and fresh water is supplied at the same places from cisterns on the upper story. Two water-closets, one appropriated to the males, and the other to the females, are attached to each story, and receptacles for ashes are provided, by which the refuse is carried down to the back yard, where easy access is obtained by the police carts. Each tenement consists of two apartments, of 11 feet square. All are lit with gas, and are let at 1s. 6d. or 2s. per week.

Such are the main features of the plan, which seems to me a vast improvement on the Scotch "flat" system; for it will at once be seen how much is gained by it in ventilation, cleanliness, comfort, and

morality. The proprietor of this truly "model" building, Dr. Bryce (who is his own architect), was led by his professional duties to consider carefully the subject of dwellings for the working classes, and the result of his reflections has been the building described. In a conversation which I had with him when in Belfast, he expressed his thorough conviction that even narrow streets were far less detrimental to the health of the community than the system of sub-letting self-contained houses, so generally adopted in Belfast, or the plan of crowding a dozen or more families into one ill-ventilated common stair, with which we in Edinburgh and Glasgow are but too familiar. Yet either of these objectionable plans has hitherto been of necessity adopted by house proprietors in large towns, who, while they are obliged to comply with the statute breadth of streets (30 feet), must at the same time attend to their own interest. I should perhaps mention that these "model" houses are eagerly run after by the class for whom they are intended.

A TRAVELLER.

#### MANAGEMENT OF SCULPTURE COMPETITIONS.

THERE does not appear to me to be the slightest necessity for the adoption of any secrecy in competitions, and the use of a "motto" I believe is all fudge, and useless, unless to enable the judges to act unfairly. The name of every competitor of any standing is known, disguise it how he may by a "motto." I believe every artist should send his name, and it should be affixed to his model or drawing; then, if dishonesty was practised, the road to its detection would be open, and not shrouded by the bugbear of "mottoes;" no doubt could then exist that the man, and not the work, was chosen; besides, Englishmen are fond of boasting of their open dealing. Why then this system of "mottoes?" It is unjust towards the unsuccessful man; for however good his work may be, or however much it may be admired, he has not even the gratification of having his name connected with it, but a stupid "motto" is affixed, as though he feared to tell the public it was his work: on the other hand, the successful man has his name publicly exhibited, giving him an undue advantage over his opponents in respect to public notoriety.

When a competition is first started let a number of gentlemen be named, say twelve; let these be asked, individually, to examine the works during their exhibition (but not called together); when the time arrives for deciding, let their names be placed together, and the first six drawn be the judges to decide—those chosen to draw one from the rejected six, to act as chairman: by this means no one could tell if he would be called upon to act. I should allow the competitors to be present, if they wished it, while the drawing was going on.

Those named should not be more acquainted with statutes than with statues, as were those chosen for the Wellington competition.

Men who study the making of laws to govern a great nation, must of necessity have their minds fully occupied; and, however powerful may be their brain, I doubt much if sufficient is left unoccupied to enable its possessor to study fine arts; if there is, the study of law-making is much easier than the study of sculpture.

At all times the rules made at starting should be adhered to, and the judges bound to observe them as strictly as the competitors, and any departure on their part should annul their decision. On any one of their number retiring, his place should be filled up from the undrawn names.

B.

#### BUILDERS' BENEVOLENT INSTITUTION.

A MEETING of the friends and supporters of this useful charity was held recently at the offices of the society Southampton-street, Bloomsbury, for the purpose of taking into consideration the subject of another election of pensioners. Mr. George Bird presided. The secretary, Mr. A. G. Harris, having read the minutes, reported that in consequence of the decrease of the annual subscriptions, and the donations received at the last festival, the funds were in such a state that the election of pensioners, which generally took place in November, would have to be postponed. Mr. George Bird (the treasurer), said that the statement of the secretary was unfortunately too true. No one could regret that the usual election of pensioners could not take place more than he did, but the fact was that the directors, in their endeavour to do as much good as they possibly could, had forgotten that, owing to the death of some of their most liberal supporters, and other causes, the funds had very much fallen off. He would again urge upon them to do the most they could, and not slacken in their endeavours until they had placed the charity in such a state that two elections each year could again take place. Sincerely did he trust that at the ensuing



dinner, under the presidency of Alderman Rose, some of the large and influential builders, who had hitherto refrained from coming amongst them, would become stewards, and lend their aid in the carrying out of so good a work. Under the circumstances, he felt sure that those gentlemen who had hitherto so liberally aided them, both by their presence and support, would again lend that aid and assistance. After some remarks from Mr. Thomas Cozens, Mr. George Grayson, Mr. J. Newsom, jun., Mr. R. Head, Mr. J. Williams, Mr. J. Davis, and Mr. C. Fish, the minutes were confirmed, and the meeting separated.

#### LITTLE SNORING CHURCH.

In your report of the meeting of the Archaeological Association, at Norwich, you have inserted an account of the visit to Little Snoring Church, reporting, also, my remarks thereon; but as those remarks, by some accident, are not rightly stated, I venture to correct this without delay. Little Snoring Church was one of the most remarkable visited during the Congress, as grouped with it is a circular tower, the remains of an earlier church.

The church itself consists of a nave and an Early English chancel, formerly lighted by a triplet window, one having been destroyed to admit of the narrowing of the chancel. The nave was originally Norman rather early in the style: to the north is an arched doorway, and to the south, immediately opposite, is a transition Norman doorway, the inner columns supporting a circular arch, the outer a stilted pointed one. This is the first example I have seen of such an arrangement, and as a skilful combination of the circular and pointed arch, it certainly deserves much praise. I should mention, that although it is of transitional character, the details are almost universally early English.

This doorway is approached by a later porch. The circular tower stands within a few feet of the south wall of the church, towards the western end. It is early Norman in character, and contains several of the recesses of the original windows. On the western side is an arch, very early in date, proving, together with the toothed wall on the north and south, that this tower was originally the western tower of the church.

It appears, therefore, that the first church probably fell into decay, but that, previous to its removal, another church was erected to the north of the earlier: the singularity in this case, however, is the little advance in the style between the first and later church, which would seem to imply that the Norman style extended over a much longer period than is generally supposed, and that it commenced many years before the conquest. I beg to apologise for troubling you with these remarks, but I thought so important an instance, as that of Little Snoring Church is of the probable prevalence of the Norman style in Saxony times, should not be entirely overlooked by you.

CHARLES E. DAVIS.

#### THE DESIGN FOR LONDONDERRY BRIDGE.

SIR,—The particulars of Mr. Barlow's design for this bridge are at last before the public; and as an architect who considers bridge construction within his province, I cannot think the design possesses sufficient merit to warrant its adoption in preference to those selected in the competition.

The design consists of a suspension-bridge crossing the river in two spans—the chains supporting four deep lattice girders, which are stated to be strong enough to carry their own weight for the span of 451 feet.

I should be glad to know how the contingency of one span being loaded, and the other at the same time unloaded, is provided for?

Of course the chains cannot be fixed to the central tower (at the height of about 120 feet above the foundation). It is also evident that the chains cannot be allowed to move freely over the towers as in ordinary suspension bridges, because this would lift the deep girders of the unloaded side, and destroy the continuity of the railway.

The upward tendency of the chains of the unloaded span must, then, be resisted by the girders.

These girders are strong enough to carry their own weight of 150 tons each.

The weight of these girders is, however, supported by the chains; and we have, therefore, for supporting the load of one span, the strength of the two girders of the loaded span acting upwards against the weight, and the strength of the two girders of the unloaded span resisting the upward tendency of the chains of that span—total strength, 150 tons by 4, or 600 tons: taking the weight to be supported at only two tons per lineal foot for both road and railway, the strength required is 902 tons.

If, however, these girders were made strong enough to answer their purpose, the rise and fall of

the chains from variations of temperature, which will be at least nine inches in each bay, would be sufficient to ensure their destruction, for these girders must be fixed immovably in their seats, and are attached to the chains throughout their length by the suspending-rods.

I can attach no importance to the experiments on the model, 13 feet 6 inches in length, of a bridge of one span only—such experiments being notoriously fallacious.

PONT.

#### RUINOUS BUILDINGS IN THE CITY.

*Building Act.*—At the Mansion-house, on Tuesday last, Thomas Connell was summoned for not having observed the provisions of the Act, by remedying the dangerous condition of premises in a wretched pile of habitations called Catherine-wheel-ale.

Mr. Tyrrell, the solicitor to the Commissioners of Sewers; Mr. Henry Blake, the second clerk; and Mr. Edmund Woodthorpe, the district surveyor of the Northern District of the City, attended upon the occasion and proved that the necessary notices had been given, and that the changes required for the security of the public had not been made.

The defendant said he was only a tenant, and he did not know who was the landlord. He knew, however, that he paid rent, and he knew too, perfectly well, that he could not pay for alterations, either for his own benefit or the benefit of other people.

Alderman Hale.—Then if you cannot find a landlord who will pay the expenses incurred by changing the dangerous nature of the premises, the Commissioners will find you a new landlord who will do it effectually.

The defendant.—I have nothing to do with it. I am not able to pay anything, and the gentlemen may do as they like.

Alderman Hale then, in accordance with the provisions of the Act, issued orders that the expenses incurred by the Commissioners of Sewers, amounting to 2*l.* 2*s.* should be paid, and that if within the seven days allowed by the Act for the performance of the work required, the dangerous condition of the premises were not remedied, the Commissioners should forthwith take the matter into their own hands.

Several other cases were disposed of in a similar manner.

#### AMERICAN EXHIBITION OF BRITISH ART.

A GOODLY collection of 163 oil pictures, and 178 in water-colours, has been made, and will shortly be exhibited. Both lists contain some excellent specimens of the modern art of Great Britain, and will, we have no doubt, be appreciated. The exhibition will be open in New York during the months of October and November, and may afterwards be displayed at Philadelphia and other cities, as circumstances shall suggest.

In some respects the present time would not have been selected as particularly eligible for the commencement of such an undertaking; but the obstacles did not seem to the projectors, on deliberate reflection, as of sufficient importance to justify the postponement of the undertaking. It is deemed far more essential to lose no time in establishing relations between the British artist on the one hand, and his brother artist and the great public of America on the other.

The projectors properly conceive that the time is fully arrived when the kindred intellect of the two countries should be interchanged in other forms besides those of literature. The names of Longfellow, Bryant, and Prescott, are as familiar in the Old country as those of Tennyson, the Brownings, and Macaulay, in the New; and the projectors earnestly hope that if they succeed in rendering well known to Americans the best names in living British Art, they shall be no less paving the way to the knowledge of American Art in England.

It is understood that, in the event of a money-success, the profits will be applied to the promotion of a knowledge of British Art in America.

#### NOTES UPON IRON.

THIS iron trade has more than maintained its last week's position. Speaking generally, there are more orders on the books now than there were then; and for sheets, the present surpluses almost every known period in the extent of the demand. On the Wolverhampton exchange, on Wednesday, orders for this description were refused on two accounts, first, because the orders now on hand were sufficient to keep the sheet mills employed to a period beyond that stipulated by the customers; and next, because the prices offered would not justify makers in keeping back the orders before accepted. The orders appeared to be more generally distributed than they were last week, there being more orders on hand now for bars than there were then. The inquiries continue to come from home customers, the demand from the continental markets not being in an equal proportion. On American account, however, there continue to be large exportations from Liverpool. There, purchases have recently been made at rates which are considered to be miserably low; but the quality supplied at those rates has not made the iron cheaper than that for which more remunerative prices are given. Whilst the leading inquiries in the United States market are for first-class iron, there is undoubtedly a

large quantity of the "Brummagem" article sent out, purchased by Liverpool representatives or agents.

Pigs are easier than they were last week, but they will not remain so long, as the subsidence of the sultry weather will occasion a much larger demand for pig iron than has prevailed for some time past. There will not be that heaviness in the pig market next quarter that there has been in the current one. We heard, on Wednesday, of one firm, which its proprietors expect will consume as large a quantity of pigs as 3,000 tons more next quarter than they have this. The transactions in pigs at Wolverhampton and Birmingham, in the latter town, on Thursday, were few.

#### Miscellaneous.

**NEW CATHEDRAL AND PARISH CHURCH FOR MONTREAL.**—The foundation-stone of a new edifice, to replace the one destroyed by fire, was laid on the 21st May last, by the bishop of the diocese. The new cathedral will be built in the Early Decorated style of architecture, and in a cruciform shape, with tower and spire at the intersection of the cross arms. It has been calculated to accommodate from 1,400 to 1,500 persons, and arrangements for the poor in the proposed plan have not been neglected. The cost of the edifice, exclusive of bells, organ, and clock, has been put down at 30,000*l.* The available means at the disposal of the building committee is about 24,000*l.*

The late Mr. Frank Willis was the designer of the edifice, and Mr. T. S. Scott is now the architect. Messrs. Brown and Watson, builders, are the contractors for the works now in progress. The site of the new Christ Church Cathedral is at the junction of Union-avenue and St. Catherine-street. The materials will be Montreal limestone, with Cien stone dressings. The plan consists of a nave, with north and south aisles, and north porch, transept, chancel, and chancel aisle, with vestry attached. The following are the dimensions of the building:—Length (inside), 187 feet; width of nave, 70 feet; transept, including tower, 99 feet 6 inches; height of tower and spire, 224 feet. The nave and chancel lighted by windows in the clerestory of two lights of varied tracery. In addition to this, there is at the chancel end a large ornamental window with five lights, of a highly decorative character; and at the nave end a large wheel window, of 12 feet diameter. The aisles are lighted by windows with three lights, having tracery of varied design. The tower is in two stages, flanked with buttresses, and the spire is octagonal and branched. The interior roof will be open, with timbers exposed and panelled. The entrance will be through the west end of the nave; north porch and doorways recessed in nave at transept ends. The main entrance will face St. Catherine-street, having on either side two large octagonal turrets, with tracery top, finished with crockets, finials, &c. of an ornate character.

**AN ANCIENT EGYPTIAN LIBRARY DISCOVERED.**—M. de Saulcy, a member of the French Institute, who has passed some time in Egypt, and is very conversant with the archaeology of that country, states in the *Courrier de Paris*, that an important discovery has lately been made in one of the tombs of Memphis, of a whole library of hieratic papyri. An Arab, an agent in the pay of the British Museum, was fortunately apprised of the matter, and brought up the whole lot.

**THE SCOTTISH ROYAL SOCIETY.**—The Royal Society of Edinburgh announces the following subjects of competition for the award of 1858-59:—The Keith Prize, a gold medal and from 40*l.* to 50*l.* in money, will be given for the best communication on a scientific subject. Brewster, Forbes, and other distinguished natural philosophers, have been the gainers of the Keith medal on former occasions. The Macdonnell Brisbane Prize, a gold medal and money, will be awarded to the best biographical notice of an eminent Scotchman. The Neill Prize, a gold medal and money, will be given for the best paper on a subject of natural history, by a Scottish naturalist; or, to the best treatise published within the five years preceding the time of award.

**PARABOLIC SOUND REFLECTOR.**—The committee of the Great Northern Mechanics' Institute, says the *Dorchester Gazette*, lately invited a few of their friends to an experimental inspection of a parabolic sound reflector, which had been erected on the platform, in the lecture-room of the Town-hall, for the purpose of improving the sound. The reflector consisted simply of boards, 14 feet in height, and forming a semicircle. Several gentlemen considered the plan as likely to prove successful; but that remains to be seen when the hall is filled.

**TEN THOUSAND POUNDS DAMAGES.**—At the Liverpool Assizes, Novell v. The Mayor of Wigan, in an action brought by a contractor for compensation, in consequence of another person being selected to perform some work, a verdict was entered for the plaintiff—damages 10,000*l.* subject to a reference.



**BRING THE MANCHESTER EXHIBITION TO LONDON.**—Many persons have been disappointed at their inability to visit the Great Manchester Exhibition. Is it not to be regretted that the busy multitudes of London, its hosts of artists and skilled artisans "cunning to devise curious works," should not have the opportunity of improvement afforded by this grand gathering of the works of genius? Unless this class of persons, the *dilett* of the industrious classes, have seen the exhibition, it might as well never have taken place. Let us Londoners petition to be allowed the benefit of studying it ere it is scattered and comparatively ineffective. With regard to a building for the purpose, could not the Crystal Palace Company confer this boon upon the public? The pictures might be exhibited on screens, without disturbing any of the existing arrangements: pictures, unlike other goods, require but a narrow portion of vertical space, and there is the requisite light from above. The arrangement of the pictures as adopted at Manchester, should be preserved as nearly as possible, and it should retain its name of the "Manchester Exhibition." Without detracting from the skill, energy, ingenuity, and intelligence of the population of Manchester, it must be allowed that the persons by whom works of taste are most likely to be appreciated are more numerous in London than in the manufacturing districts, and if the mission of the undertaking has been to improve the taste of the nation, it must be done in the first instance through the classes whose attention has been already in some measure directed to refinement, to a delicate discrimination of the nice shades of difference between what is merely good, and that which constitutes perfection in all that addresses itself to the eye. And even as a matter of education, such an exhibition is more likely to "bring forth fruit" from among the population and visitors of London than of any other place.—AN ARTIST.

**ELECTRO-TELEGRAPHIC PROGRESS.**—The Mediterranean line has been safely laid between Europe and Africa. It extends from Cagliari, on the Sardinian coast, to Bona, on the coast of Africa. The cable, which failed, weighed 8 tons per mile: the one now successfully laid weighs only 1½ ton per mile. The depth of water, for more than half way across, is two to two-and-a-half miles. The distance is 145 miles. The bed is soft chalk and shells. A cable is also about to be laid between *Aradina* and Malta, and from Malta to Corfu. The Austrian Government propose to lay a line from Ragusa, on the Adriatic to Alexandria, passing through Corfu, so as to complete the entire line through Malta and Corfu to Alexandria, bringing Bombay within fifteen days of England. In six weeks the Malta line will be completed and in six months the Alexandrian. The prospectus of the Red Sea Telegraph Company has been issued, and well received. The capital is 300,000*l.* in 60,000 shares of 5*l.* each. The immediate object is to lay down a telegraphic cable in the Red Sea between Suez and Aden, so as to effect telegraphic communication thus far with India at the earliest possible moment. This object is expected to be completed simultaneously with the Mediterranean telegraph to Alexandria. By this means communication with all India will be brought within one week; and by the extension to Kurrachee, which will immediately follow, hourly communication will be established.—In a paper on the Atlantic telegraph, by Professor Thompson, read before the British Association, at Dublin, it is stated that the cable was 2,500 miles long, and composed of 270 tons of gutta percha, 97 tons of copper, 240 tons of tarred yarn, and 1,692 tons of iron, making a total of 2,300 tons. It was highly probable that in the process of time a hard rock would be formed around the cable, which would sink in this soft bed, so that when it was laid ere many years it would be a fossil which would be most durable.

**SCHOOL OF ART FOR DARLINGTON.**—A Branch School of Art is about to be established at Darlington.

**THE NEW LANDING-STAGE AT LIVERPOOL.**—A local paper says that, unfortunately, the great new landing-stage at Prince's-pier, for sea-going steamers, luggage-boats, and tugs, is in one respect a failure. "Owing to the shortness of the bridges by which it communicates with the pier, they are practically useless—except a little before and after high water—for the conveyance of carts, carriages, or loaded vehicles of any description. The angle of inclination is so acute, that no available amount of horse-power can draw the loads up, or "steady" them in going down, with safety; and there is no rope and capstan to meet the difficulty, as was the case at the old Seacombe slip. Sir William Cubitt has been made aware of the inconvenience, and, according to the statement made by Mr. Hornby at the council meeting last week, he has merely advised that the stage should be tried for some time in its present condition before any alterations are attempted, in order to ascertain the best way of effecting them."

**PILLAR LETTER-BOXES.**—A correspondent says,—"Having often experienced great inconvenience, and seen others do the same, by arriving at the pillar letter-boxes about the time for clearing them, without being able to ascertain whether their contents had been removed or not, I beg to suggest that one of the pencils be made moveable, and that the man who changes the bag should place a pencil in a slot in the place of the blank one, with the following words written upon it, 'Cleared for the One, p.m. post' (or whatever the post may be)."

**WANT OF SEATS IN ST. JAMES'S-PARK.**—A communication has been sent to us, purporting to come from "The South Water-side Walk of St. James's-park," and addressed to Sir Benjamin Hall, complaining of the want of seats on that side of the park. We feel assured the Chief Commissioner of Works only requires such a hint as the present to induce him to correct this oversight, but we think it more than likely that there are few benches in the walk in question compared with those on the opposite side of the water only because the orders have not yet been fully executed.

**BIRMINGHAM SOCIETY OF ARTISTS.**—The annual exhibition of this society was opened on the 7th inst. The private view took place on the previous Saturday, and was numerously attended. The collection of works is nearly 550 in number, and is said to be of more than average merit. The society have obtained the four pictures from the Luxembourg Museum at Paris, transferred from the recent exhibition at Edinburgh. Besides the works of members of the society, which are numerous, the exhibition contains works by Creswick, Stanfield, H. Pickersgill, F. Goodall, A. E. Chalon, A. Cooper, Cooke, Eddy, Horthley, Lucy, Thomas Faed, Saut, Cox, Anthony, J. P. Knight, Sir John Watson Gordon, O'Neil, Nicol, Desanges, Niemann, Woolmer, Wingfield, Weigall, and others.

**ACTION OF WATER ON LEAD.**—Dr. Medlock, formerly a student of Professor Muspratt's, and now in the metropolis, says a Liverpool paper, has, for many months, investigated the action of different waters upon lead, and the conclusions he has arrived at are entirely at variance with all received opinions. Because a water is soft, is no reason why it should act on the metal: the action, it appears, is entirely due to the presence of an acid of nitrogen. We give Dr. Medlock's conclusions from his paper, published in the *Philosophical Magazine*:—"Firstly.—The action of water upon lead is entirely due to the presence of nitrous and nitric acids, resulting primarily from the decomposition of organic matter, and of ammonia contained in the water. Secondly.—Waters deprived of these acids, and of substances capable of producing them, have no action on lead, and may be conveyed with perfect safety through leaden pipes, or stored in leaden cisterns."

**LIQUID MEASURES.**—By the present system of beer and other measures used by publicans, the community are, I believe, considerable losers, and never obtain the quantity paid for: they cannot be filled to the top of the measure, or the risk of some being overdrawn is incurred, and do not, I imagine, reach the top by the one-eighth of an inch: even then there is generally some spilt—besides the hasty and dishonest system of removing the funnel before the liquid has well run through. To obviate all chance of short measure being given, I suggest that beyond the actual limit of the measure there should be a rim of about half an inch sloping upwards and outwards: there would be then no further liability to the liquid being spilt.—GABRIEL.

**TUNNEL OVER THE MEDLOCK, AT MANCHESTER.**—The Manchester corporation are taking up the tunnel which was put in about three years ago, to which is attributed the damage from the heavy floods of August 10, 1856, and August 14, in the present year. The tunnel now being removed is an arch of 10 yards span, the crown of arch being 7 or 8 feet above the ordinary water-level, and the entire length about 130 yards. This is to be replaced by a cover consisting of 100 cast-iron beams, placed about 5 feet apart between centres, with 9-inch arches of purpose-made radiating bricks set in *liais* cement. The underside of the beams will be 12 feet above the ordinary level of the river, which will make the available sectional area of the new tunnel twice that of the former tunnel. The sectional area of opening of the new tunnel will be 360 square feet, and the extreme length will be 130 yards. The contract has been let to Messrs. J. and H. Patteson, of Manchester, who have commenced the work with activity.

**COMPETITION IN THE CITY.**—The Directors of the Mutual Assurance Company, desiring to rebuild their premises, have instituted a limited competition between five architects, including Mr. Woodthorpe, Messrs. Banks and Barry, Mr. Hahn, and Mr. Porter, agreeing to pay each a certain small sum for expenses, and to employ the author of the selected design. The drawings are now under consideration.

**THE LIVERPOOL ART-UNION.**—The annual drawing of prizes in connection with the Art-Union at Liverpool, took place on the 10th instant, in the Nisi Prius Court, St. George's Hall. The report regretted that the anticipations entertained last year had not been realised, there having been a falling off, instead of an increase, in the number of subscribers. This was owing in part to the unfavourable season, and in part to a difference in the minds of their supporters as to the privilege now accorded to prizeholders of making their selections at the opening of the exhibition. "Now," continued the report, "it is feared that the small amount of subscriptions will lead at once to a return of the former time of selecting, as there appears a great probability of the Academy withdrawing the privileges now granted to the society. Another year, however, every effort will be made to make it an effective support to the arts in Liverpool. The number of subscribers this year is 374: from these has been received the sum of 382*l.* The total expenses are 25*l.* 19*s.* 3*d.*; leaving 347*l.* with a small balance of 7*l.*—354*l.* to be spent in prizes, which have been divided as follows:—One of 50*l.* one of 30*l.* two of 25*l.* three of 20*l.* four of 15*l.* seven of 10*l.* and four of 5*l.*" A gentleman threw out a suggestion that it might be desirable to have a second Art-Union at the close of the Exhibition, as there would be a number of pictures remaining after the present prizeholders had selected theirs and the public had purchased. The secretary suggested, that, as the choice of the pictures, on the second occasion, would be very much diminished, the amount of the subscription, also, should be diminished: it might, instead of being a guinea, be half-a-guinea. The report was adopted; the suggestions to be considered by the committee. The drawing was then proceeded with in the usual way.

**RAILWAY TRAFFIC.**—The traffic returns of the railways in the United Kingdom for the week ending Sept. 5, amounted to 516,260*l.* and for the corresponding week of 1856 to 500,100*l.* showing an increase of 16,160*l.* The gross receipts of the eight railways, having their termini in the metropolis, amounted for the week, ending as above, to 215,709*l.* and last year to 214,990*l.* showing an increase of 719*l.* The increase on the Eastern Counties amounted to 1,580*l.* on the Great Western to 645*l.* on the London and North-western to 1,470*l.*—total, 3,695*l.* But from this must be deducted 980*l.* the decrease on the Great Northern; 267*l.* on the London and Blackwall; 795*l.* on the London, Brighton, and South-coast; 230*l.* on the London and South-western; and 704*l.* on the South-eastern; leaving the increase as above, 719*l.* The receipts on the other lines in the United Kingdom amounted to 300,551*l.* and for the corresponding period of 1856 to 285,110*l.*

**CORK SCHOOL OF DESIGN.**—The general meeting of the committee of this school took place on the 4th inst. when a report was read, stating that the attendance for the present term in the central school amounted to 121, of whom 40 were female and 81 were male students, showing an equal amount with the attendance at the same period last year. 400 were under instruction in the National schools, and the fees received for the term amounted to 28*l.* 16*s.* 6*d.* The instruction, class arrangements and lectures were carried on with regularity and efficiency.

**THE STEAM FERRY, RYDE.**—The works of this company on the island side of the Solent were commenced on Monday last, under the auspices of Mr. Denham, jun. who has the contract for putting down the concrete foundation. The quay, which is about in the centre of the Esplanade, will be 190 feet in width from south to north, and 600 feet in length from east to west, from which a channel will be cut so as to enable the bridge and other craft to come alongside at all times of the tide. Should this project answer, it will be a saving of time to those who are journeying to and from London. The contractor for that portion of the works is Mr. Bennett, one of the contractors of the Ryde waterworks; and the engineer of the whole is Mr. Thomas Hellyer, of Ryde. The first stone of the works will be laid with Masonic ceremony on the 29th instant.

**GNOLL COLLEGE.**—This establishment, of which we have before spoken, is to be incorporated as the Western University of Great Britain. It is situated in the Vale of Neath, Glamorganshire, and has for its objects, to complete the education of the sons of gentlemen, above sixteen years of age, in the practical applications of science, to the management of land, manufactures and commerce—to the public services, the professions, and other pursuits. The resident professors appointed include, in mathematics, Arthur Cayley, F.R.S. Mechanics, Rev. C. B. Wollaston, M.A. Physics, Rev. A. Bath Power, M.A. Chemistry, J. E. D. Rodgers, M.R.C.S. Natural history, T. Spencer Cobbold, M.D. F.L.S. Human history, the Rev. Andrew Wilson, M.A.; and Design, E. H. Wehuert, member of the New Society of Painters in Water Colours.



## The Builder.

VOL. XV.—No. 761.

EVER look a gift-horse in the mouth," is an old proverb, but the advice should not always be followed. The circumstance that prompts us to make this observation we will refer to presently; first, let us ramble a bit in the fair county of Kent. Everybody is out of town—London is empty. Is it really? One who went to the Crystal Palace last Saturday morning, and saw nineteen thousand persons in the midst of wonders of art, listening to such a concert for a shilling as would have gratified the most fastidious, or who had tried to take places for the opera at her Majesty's Theatre that night, and couldn't get them; or who saw the Surrey Music-hall on Sunday morning packed full of worshippers, or got mixed up with the stream of life that filled the New-road in the evening of that same day of rest,—might reasonably doubt the assertion. Nevertheless, it is true, comparatively speaking: Grosvenor-square, Belgravia, and Tyburnia are desolate, and some member or other of every household, Smith, Jones, and Robinson, has fitter, or far or near, to unbend for awhile, and get fresh air. When the warm weather comes, as old Chaucer sings,—

"Then longen folk to go on pilgrimages,"

And though we cannot literally add with him,—

"And specially from every shire's end  
Of England, to Canterbury they wend,  
The holy blissful martyr for to seek,  
That them hath holpen when that they were sick;"—

we will take the liberty of pointing out this city and its neighbourhood, as we have before now done in the case of other places, to such of our inquiring readers as want an object for a jaunt, and by any chance have not seen it. Every one recollects how that the sight of three English boys, exposed for sale in the market-place at Rome, with their faces "full of light and brightness," first interested Bishop Gregory in the people of this island, and led him afterwards, when Pope, to send forth Augustine with forty monks as missionaries, to this country, at the time that Ethelbert reigned over the kingdom of Kent with a Christian Queen, Bertha. Not far from Ramsgate they landed; then they went to Canterbury, and soon we find them worshipping with the Queen in St. Martin's, a building on the east side of the city, but probably not the structure now on the site. On the 2nd of June, 597, Ethelbert was baptized, and after that soon followed the foundation of the cathedral, and the commencement of what ultimately came to be called St. Augustine's Monastery. Canterbury was the cradle of our Christianity, with the mother cathedral, and, in St. Martin's, the mother church.

A right glorious cathedral it now is, well placed, 511 feet long, with its central tower rising to a height of 227 feet, and displaying in the various parts of the building all the styles of architecture which prevailed from the end of the eleventh century up to the sixteenth, with numberless tombs of men who have made history, fine specimens of early art, and undying associations. Burnt by the Danes in 1011, it was rebuilt by Lanfranc in the eight years following 1070. Between 1093 and 1110 the eastern part was rebuilt more magnificently, first by Ernulf, and then by Conrad, and it was

further enlarged by Anselm in 1130. In 1175, leaving the existing crypt, they began to rebuild the cathedral in earnest, under William of Sens; but this architect injuring himself by a fall, one called William the Englishman succeeded him in 1179, and finished Trinity Chapel, with its crypt and circular termination, called Becket's Crown, in 1184. In this we have what must be considered the earliest approach to the complete Pointed style in this country,—an added inducement for a visit.

The nave and western transept, as we now see them, belong to the end of the fourteenth and beginning of the fifteenth century (1378 to 1411), and the central tower, above the roof, was built between 1490 and 1517.

The crypt of the choir, very extensive and interesting, belongs, if not to Lanfranc's, to Conrad's building. At the east end, in the aisle, will be seen two cylindrical columns, much larger than the columns of the crypt, which go through the vaulting, and are noticeable for having in the capital the tau, or cross of three arms, which occurs in the columns of the Norman chapel in the Tower of London, described by us not long ago. The verger tells visitors, with great decisiveness, that these columns are much older than the crypt; but he is wrong: they were put in at the rebuilding by William of Sens, and William the Englishman, to carry two columns at the entrance to the Trinity Chapel above, the horseshoe form of which was produced by desire not to interfere with the two existing Norman towers of St. Andrew and St. Anselm, conjoined with the necessity of providing room for the shrine of Thomas A'Becket, to which we must allude presently.

"The crypt," says Erasmus, who visited the cathedral between 1511 and 1513, "had its own priests. There were several chantry chapels in it; one of which was founded by Edward the Black Prince in 1363, in the south transept, (endowed with the manor of *Lanham* at *Lambeth*, still belonging to the church of Canterbury), and which chapel became in the reign of Elizabeth the church of the French Protestant refugees.\* The Black Prince desired in his curious will, to be buried "*en l'Eglise cathédrale de la Trinité de Canterbury, où le corps du roy saint Thomas repose, en aplice de la chapelle de Notre Dame Calcecroste*." Leaving the Prince, however, for a short time, let us mention that in the crypt under St. Anselm's lower, forming a small semicircular chapel, the walls are covered with some very interesting paintings of Scripture subjects, in the style of the twelfth century. The place has been long walled up, and is approachable, if at all now, by so small an aperture that practically these paintings cannot be examined. Some other arrangement should be made: there is not a more important specimen of early art in the country.† The tomb of the Black Prince, who died "*le viij. iour de Juin, L'an de Grace Mil trois-cens Septante Sissar*," will be found on the south side of the Chapel of the Trinity: it has upon it a remarkable rhyming epi'aph dictated by himself in the Norman French of the period, commencing, as translated,—

"Woe'er thou art, with lips compress,  
That passeth where this corps does rest,  
To that I tell thee list, O man!  
So far as I to tell thee can,  
Such as thou art I was but now,  
And as I am so shalt be thou.  
Death hath del'd my thoughts empty  
So long as I did life enjoy."

Over the monument are suspended the surcoat, helmet, shield, and gauntlets of the prince. When examined some years ago by Mr. Hartshorne, the surcoat was found to be of one piled velvet,

\* Pilgrimages to St. Mary of Walsingham and St. Thomas of Canterbury. By Desiderius Erasmus. Translated by John Gough Nichols, 1810.

† An exact copy of one of the paintings, and sketches of others, by Mr. Fairholt, will be found in "The Archaeological Album," edited by Thos. Wright, M.A.

embroidered with his heraldic bearings; and it is worth noting that the surcoat represented on the effigy resembles the real surcoat precisely in the number of *fleurs de lis*, and their position, giving us confidence in other representations of mediæval costume. The prince lies in complete armour, his hands joined as in prayer. The canopy above the tomb was painted with representations of the persons of the Trinity. The effigy is an exquisite work of art, demanding careful examination.

Canon Stanley, in his "Historical Memorials of Canterbury," a work to which we drew attention on its appearance, gives some most interesting particulars in connection with the burial of the prince here, and a careful copy of his will, annotated by Mr. Albert Way. All should read this book who wish to enjoy Canterbury. It treats of four subjects, the Landing of Augustine, the Murder of Becket, Edward the Black Prince, as already alluded to, and the Shrine of Becket.\* It has several illustrations, and of these we give two, viz.; "The Tomb of the Black Prince," and "The Transept of the Martyrdom," as it was called, (on the north side of the central tower), the scene of Becket's murder. This event, which happened on Tuesday, the 29th of December, 1170, elevated the quarrelsome archbishop into the "blessed St. Thomas of Canterbury," made the cathedral a holy spot in the eyes of all Christendom for centuries, and sent streams of pilgrims to the shrine from every part of the world. The transept has been altered in its aspect since then, but a small square piece cut out of one of the flag-stones (to which the verger is pointing in the engraving), marks the spot where he was murdered.

The body was first interred in the crypt, and thence came the first influx of pilgrims. Here the king humiliated himself for the words which insigated the deed, and thence came Louis VII. of France, Richard of the Lion Heart, immediately on his return from the Holy Land, and King John directly after his excommunication. It was the age of pilgrimage. One who had been to Rome was a *roamer*, and from amongst those who had visited the Holy Land, *La Sainte Terre*, we got "*saunterers*!"

A fire in 1174 led to the rebuilding of the choir by the two Williams already mentioned; and then Trinity Chapel was enlarged to receive the shrine of the archbishop, and his body was removed to it in 1220, with great pomp and ceremony. The shrine was placed in the centre of the chapel, and had in front of it, to the west, a fine mosaic pavement, which still remains. This pavement is executed in the manner known as *Opus Alexandrinum*, of which there are specimens at Westminster Abbey. The amount of wealth lavished on the decoration of the shrine was enormous. "The tomb of St. Thomas the Martyr, Archbishop of Canterbury," says a foreigner who visited it in the year 1500,† exceeds all belief. Notwithstanding its great size, it is wholly covered with plates of pure gold; yet the gold is scarcely seen because it is covered with various precious stones, as sapphires, balasses, diamonds, rubies, and emeralds; and wherever the eye turns something more beautiful than the rest is observed."

Eighteen years after the date of this visit the shrine was destroyed by order of Henry VIII. and all memorials of Becket were removed as completely as was possible.

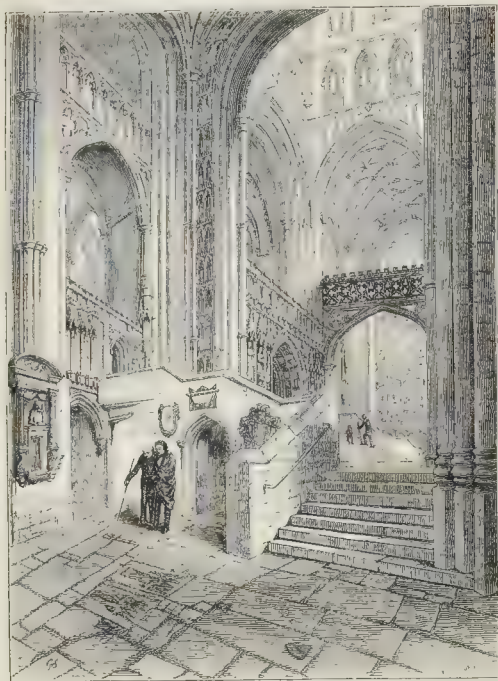
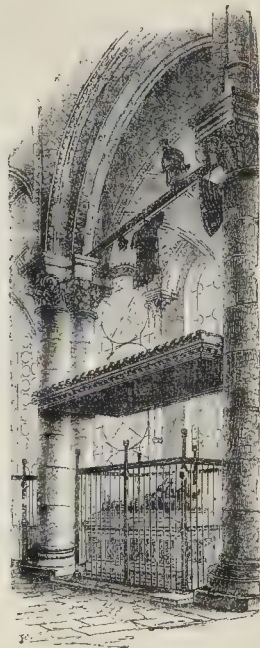
On the choir-screen, seen in the view of transept, the organ formerly stood, and greatly interfered with the view down the building. This, however, was removed, and its various movements and pipes were placed in the triforium

\* A second edition, of smaller size than the first, has been recently published by Mr. Murray, Albemarle-street.

† "Relation of the Island of England," published by the Camden Society.



## MEMORIALS OF CANTERBURY CATHEDRAL.

*The Transept of the Mortuary Chapel.**The Tomb of the Black Prince.*

on the south side of the choir, and 92 feet from where the organist sits below, without damage, it is said, to the effect of the music.

Wander where you will in Canterbury, irrespective of its architectural beauties, interest is excited and history made precise. The site of an historical event, the building in which a great deed was done, the grave of a leading actor in it, fixes the event in the mind, and produces an impression of reality and certainty in connection with the occurrence, which simple description cannot effect.

We have, before now, given illustrations of Canterbury, and amongst them will be found a view of the bishop's throne, in the choir, which was put up, at a cost of about 1,200*l.* under the superintendence of the late Mr. Austin, by whom the cathedral was rescued from ruin and brought to its present condition. A stained-glass window to his memory has been set up in the north side of the north-west tower. In other parts of the nave, some modern glass windows have been executed by one of his name,—a name which will always be entitled to consideration in Canterbury,—and these bring us back to the remark with which our observations were commenced. It is said that the artist of windows already in has undertaken gratuitously to fill all the windows on the south side of the nave, at the rate of one a year. If the statement be correct (it came from the verger), this is a most liberal offer, deserving great praise. We must, nevertheless, and ungracious as it may seem, express in the strongest manner the hope that the Dean and Chapter will not follow the teaching of the proverb. The glass put up in Canterbury Cathedral ought to be the finest that can be obtained, and we are forced to say that this description does not apply to all the modern glass now there. Some of it, indeed,—look in the clerestory of the nave, for example,—is, to speak the truth, abominable, and will have to be taken out again one of these days.

The ancient glass in the choir is of rare beauty, and, as there are comparatively few

examples remaining in this country of Early English glass, the windows here are the more valuable. As a series of specimens of English picture windows of this period, say the beginning of the thirteenth century, they are the most interesting to be found. A description of them as they formerly existed is given in Somner's "Antiquities of Canterbury," and reprinted in Mr. Winston's "Hints on Glass Painting." "As might be expected from the age in which they were executed, the subjects will be found to represent chiefly such occurrences in the Old and New Testament as bear, or were supposed to bear, to each other the relation of type and antitype."

Look at the fine ceiling of the Chapter-house (the building greatly needs repair), and walk through the cloisters, and then we must leave the cathedral or we shall not have space for a line about the rest of the city, full as it is of churches and other relics of the past, including many interesting old houses in the streets. The Chequers Inn, the supposed place of lodging of Chaucer's band of pilgrims, described in the supplemental poem to the world-famous "Canterbury Tales," and now divided into tenements, forms the corner of High-street and Mercery-lane. "Its vicinity to the great gate of the precincts," says Canon Stanley, "naturally pointed it out as one of the most eligible quarters for strangers, whose main object was a visit to the shrine; and the remains which can be traced in the houses that for more than two centuries have been occupied by the families of the present inhabitants, amply justify the tradition. An oblong court, surrounded by a venerable tenement, entirely composed, like houses in Switzerland, of massive timber, chiefly oak and chestnut, received the pilgrims as they rode in. In the upper story, approached by stairs from the outside, which have now disappeared, is a spacious chamber, supported on wooden pillars, and covered by a high pitched wooden roof—traditionally known as 'the Dormitory of the Hundred Beds.'"

The municipal records of Canterbury are very numerous and valuable. The chamberlain's accounts are complete from the year 1393, and we learn from these something as to the wages paid to artisans. About 1481, the regular wages of a tiler were 4*d.* a day. In 1520, we find that a tiler was paid 5*d.* a day, from which time the increase proceeds more rapidly. In the chamberlain's accounts for 1546, we have the following items:—

"First, paid to Thomas Graves, tiler, and hys man, for x days tying about the halle and the chambers, tackying by the day for mete, drynk, and wages, xij*d.* xs.

Item, paid to a carpenter for one day's work, mending the windows, and the stayers of the same tenement, viij*d.*

Item, paid to a dawber and hys man for two days dawbyng of the walles of the same house, xij*d.* the day, ijs."\*

In going round the town, the West Gate, the well-known Norman staircase, the Dane John, St. Dunstan's, St. Augustine's College restored and refounded, and St. Martin's Church, beautifully situated on the hill and ivy-covered, must of course be visited.† The latter, although the walls contain Roman bricks, exhibits nothing of earlier date than the Norman period. Tradition says Ethelbert was himself baptized from the font here, a cylinder, tapering slightly towards the bottom; but the sculptured decoration upon it, including a ring of interlaced arches, would seem to be of later date. Nevertheless, it is just possible that the decoration may have been added at a later time on a font originally plain. The view of the cathedral from the green hill, on which stands the ancient church, is beautiful in the extreme, and recalls a crowd of associations spreading over twelve hundred years!

\* "The Antiquarian and Architectural Year-Book for 1844."

† In our earlier volumes, illustrations, with notes, will be found of St. Augustine's, the Norman staircase, and other architectural features of the locality.



## ART IN OUR STREETS.

In a former article—under the title "Art in our Parks," and in some observations in our last number—we adverted to the relation between architectural detail and objects in nature, and pointed to the fact that combination was essential to the realization of the architectural effect. We then showed that whilst a more copious application of art was required in the parks, squares, and garden-enclosures; for the same reasons, in our streets, greater use should be made of natural objects, or greater attention paid to the principle involved. It may be curious that where architecture is most used, namely, in towns, it should be seen generally under the greatest disadvantages. But we believe the fact is so. It is presented without that which, in cases such as we have referred to, most conduces to its beauty; and it often has not the pure air and the illumination from unobscured sky, which are necessary, that its features should be seen, or that its chief grace and ornament, its minutely "pencilled" and cast shadows, should, we might say, exist. To understand the importance of what we have been considering as elements of even architectural beauty, it is not sufficient to look at London—at least at the west end, and certain outskirts of the town, where a considerable proportion of park or garden ground is met with. More, indeed, might be done for general results, by improved arrangements in open spaces; and we have endeavoured to show in our former article, on what system the arrangements should be made. In London, however, there has always been a disposition in the quarters appropriated to the better class of residences, to have a moderate proportion of ground laid out in gardens; trees which came into the line of street on the last alteration of Piccadilly, were fortunately saved before the whole number had been cut down; and plants and flowers flourish in balconies, and the ivy and the vine are trained to cover portions of the frontage. Considerable beauty of effect results in many of the cases mentioned, as may be noticed even in Piccadilly.

It should not be inferred from any of our arguments, that we would have the houses of London covered with creeping plants; but the lesson from the particular combination is not unconstructive. To what is it that the ruined abbeys owe much of their beauty? Surely to the combination or contrast of the architectural details—as mouldings and window tracery—with the leafy covering of the walls, and other associated objects forming the natural beauty of the site. The well-known church of Castle-Ashby, in Northamptonshire, affords a good illustration of the effect of architectural detail under such circumstances. The late Marquis of Northampton kept the ivy cleared away from all parts where details, or the manner of their union, would have been concealed. We have been pleased to observe that the arborescent beauty of some of the suburbs of London, as several of those on the Surrey side, appears to be appreciated; and that many of the new streets, even where the houses are of an inferior class, are planted with trees—as requisite to their agreeable appearance. Our argument is, that more might be done in this particular way, or with the same intention, in the main streets of London; whilst of course, in the outskirts, better design might be exhibited in the architectural detail.

But to understand the importance to architecture of the principle we have been referring to, we should observe the buildings of the northern manufacturing and commercial towns, where trees scarcely grow, and where, usually, the atmosphere is more smoke-laden than that of London. Some of the lamentations which we alluded to, as to the want of interest amongst the public, have reached us from one of these very places; and, indeed, that has become remarkable for its buildings. Indeed, we admit, considering the manner in which architecture has been practised during the last dozen years, in such towns, and the architectural taste manifested in some of them—and which as to many elements of effect, is greater, in proportion, than that exhibited in London—it is difficult at first not to dispute, rather than join with, the imputation as reported to us. In fact, we do doubt some of the grounds of the assertion. We do not think that the merit of the erection of such buildings as there are in Liverpool or Manchester, is to be ascribed to rivalry, and to purse-pride feeling, so much as would thus be supposed; though such moving causes have not been wanting. The interest which is now taken in the other arts; and the sums which are expended in the purchase of pictures, would rather go to contradict the supposition. Still, ascribing to the buildings referred to, all the merit which they have in technical details, if the object and intended effect of architecture—the decoration and adornment of cities—were attained in a degree commensurate with the attempt, people would live in the town of Manchester—which, it is well known, they generally do not; and would not leave it for a residence at the

lakes, or in the southern counties,—as the majority of those who make fortunes seem to do. The smoke of Manchester has been asserted to be the reverse of unhealthily; and perhaps it acts in the manner suggested in the note to our recent article on the National Gallery question. Art in Manchester, as we believe, owes its position principally to individuals. The towns—by its smokiness, and the general absence of trees, or any sort of vegetation, except at the outskirts—is repulsive, in spite of its good architecture, as every stranger feels who visits it. Till the smoke can be reduced still more than it has been; and till trees and flowers will grow within its circuit, its architecture cannot be appreciated by its inhabitants, even as it deserves to be. Lest the view we take should be doubted by those who reside in Manchester, we may refer to the surrounding manufacturing towns, such as Bolton, Stockport, Ashton-under-Lyne, and others. The smoke there seems to be more dense; and the impression of natural beauty more strictly banished to the surrounding country—which has still picturesque character. The wealth that is accumulated in some of these towns is considerable. Yet what has architecture done to render any of them attractive? There is so little that is refreshing in the scene, unless it be the buildings portion of it,—there is such a mass of deformity to set against the art,—even in this, and the mind is so much depressed every way, that what there is even of good architectural design, is not appreciated, and seems out of place. Let the impression made on any of our readers be compared with that which is induced by the line of Piccadilly, opposite the Green-park, and in many other parts of London. Here, one or two buildings excepted, there may be no very superior works of art—no particular taste evidenced in architectural details; but there is symmetry and proportion, or massiveness in one front, and quaintness in another: one house recedes from the general line; another has balconies, or bow-windows, or a porch; and the park and trees, and the plants in balconies, add the other element for effect. Similarly, the eastern side of the park deserves to be noticed for combinations of the like kind. There we find Bridge-water House, with its simple but admirably planned sunk garden—though that feature is not so well seen from the park as might have been desired, and Spencer House, with its rusticated and arched basement amidst the leaves and branches, and the beautiful statues crowning its pediment—regarded as models for the treatment of sculpture in such situations. Gothic of the Strawberry-hill kind, will be discovered in the course of the walk: we do not hold it up for approval; though we have seen houses in that character of taste, which when we could get rid of prejudice and prejudice, we have thought not wholly worthless pictorially; whilst such works have begun to acquire something of historic interest.

Interest, however, of some kind or other, is what it should be the object to excite in our streets, by the disposition and plan of the routes and buildings, the grouping and the variety of separate features, and by the general study of a particular ill-understood branch of our art—street architecture. Interest, such as ever can be taken in old street architecture, at home or abroad, it is indeed impossible to afford by new buildings: we can maintain, but not re-create that; but we must supply other matter of interest—other food for the eye and mind—by fresh creations,—in fact, by art. There is an alternative from the unimaging, mind-deadening influence of brickwork, undecorated by proportion or ornament, and the equally deadening effect of our ordinary and art-less contentious substitute for architecture. But, for that, it will not suffice to take the unbroken frontage in a street—such as the ordinary streets of London afford—to re-group the openings and add architraves and cornices. The architect may, no doubt, do all that, with skill in his art, and the deserved approbation of his brethren. But, he must do more. Without the particular mistaken aim at contrast and variety—namely, contemporaneous use of several styles—he must give those same qualities, which can become even more obvious and striking from the bond of a general wholeness. For, there seem to be two kinds of contrast,—one which is absolute, like that of black to white; and the other, known to art, the principle of variety in unity. Contrast, or variety (for there is ground for the use of the words interchangeably), is, in short, but one, though a much neglected element, in the art of the architect. We hold that the particular variety which is needed, is not got by the simple use of a plurality of styles: but on the contrary we maintain that the number of the technicalities—as details and precedents—tends to lessen the attention to real variety,—to substitute the semblance of originality for the fact, and to interfere even with the power of appreciating the art where it may have been supplied. No man can pass *per saltum* from the appreciation of Greek, or Gothic, or Moresque, or Italian,—from one to another—and be

just to the art and the artist in the case of each, any more than the same hand can be found to delineate with equal skill their ornament, or the same nation to admire alike the Venus de' Medici, and the Venus of the Hottentots. Were there no other objection, there would be one on the score of cost—a financial one—to the provision of a class of art-works for each class of perceivers. Where, in general learning and tastes—in language, feelings, intentions, and mechanical facilities—people of the same time and country are bonded together, a like bond should prevail in the domain of art—co-existing with the full latitude which every analogy shows will exist in individual facility and inventiveness.

Architecture as we are viewing it, may be said to consist of two grand fields or vehicles of expression,—the technical department, necessary to the other, but in which perception grows with study,—and another, the department more especially neglected by our profession, which, like music on the ear, is calculated to tell upon the eye of the impressive, but not deeply-learned public. What can be the value of any refinements, or graces of detail, if the attention be not first drawn to the object? The eye must be chained; and that part of the process of observation in which the reasoning powers are concerned, will thus be set to work. As architects, we must note the impression from the combination in cases which we have referred to,—where art—though little of what we have been accustomed to call architecture—holds its important place in the *mise en scène*. And we must provide at the least, so much of the appearance of stability and of use, as every observant person, unaffected by dogmas and precedent, would not fail to insist on. These simple elements and conditions include all that is wanted for the public.

The extent of the application of the guiding principles may be not at once perceivable. But, take the latter branch of requirements alluded to, first. We want porticos which will shelter, but will not darken rooms, and porticos to which we can have access. We want to see a work of art if we have it, and to feel that it contributes to our enjoyment in return for what it may have cost,—we demand that it should be well placed in a *vista*, or be visible from a sufficient width of street; and that the background of sky, the medium of atmosphere, and the surface of the work itself should be not obscured and polluted by soot and smoke. We want both the fact of stability, and the utmost appearance of it helped by every detail of the basement, by every accessory, and every extension of the site which can be generated in the eye by the lines and curves. We require not merely space for our buildings that we may get back to view them, but breadth of base, or the semblance of it, for works themselves. Our chief buildings should be more frequently, like the National Gallery or the Royal Exchange, placed where a broad platform occupies the foreground, and prevents the disturbing influences which may be unavoidable in crowded streets. But the extension of base may be provided for by other means: the appearance of it need never be left out or be concealed by the habitual iron railings. Curious it is, how what might seem the obvious elements of our art, have to be learned the last. How many porticos have we without either access, or that base of steps which according to the view we have been taking, would be positively the most essential object for attention?

So much for the one class of essentials in our art, which can be appreciated, and will be required, by Smith and Jones—provided only such individuals have ordinary eyes and intelligence, and have not advanced merely to the "little learning" which, alas! robs a man too often of his sincerity of thought, his nobility of mind, and overwhelms his reason with prejudice. If the public who would judge, would but secure the steps in the ladder of knowledge, and take no ground without first understanding it; if men would have only the candour to be not pleased—would not feign a pleasure when they have it not—we should soon make sure way, and bring about the real love of our art by a rational and progressing process. The mortuary lesson from Grecian art, restrains us indeed from arguing that the people can never appreciate the utmost refinement. But the ever vocal lesson from the Athenian Acropolis—the combination and contrast of nature and art the architecture with the base and foreground of rock, and the background of sky and clouds; the same combination everywhere, with

"—Sanium's marble steps;

the sea-horizon, or the forest-glades; points to another consideration not neglected, and which probably led to the delicacy of perception as to details.

If we have written to any purpose, it has been shown that the combination of art with nature operates on the eye and mind, because it possesses in the utmost degree variety. A corresponding effect is that which we have to produce—it may be under disadvantages. As a nation we have abandoned country-life. Having hitherto added our art to effect a

\* See p. 501, ante.



union with sylvan scenery, we are now to study the combination where forms of a structural character will predominate.

If art was needed to produce a peculiar beautiful expression in sylvan, maritime, or rocky scenery, natural beauty is required to combine in the architecture of towns; or other elements of effect must be presented to make up for the deficiency, and tending to reach the same end. Thus, walled parks and gardens should be formed, at frequent distances, and, moreover, should be planned and decorated with architectural and sculptural accessories; other areas should be provided, where our public buildings may stand, and generally in series, to gain the effective combination of buildings in a place, and the variety of objects to interest and contrast; and to allow the sky and clouds to come into the field of view, and the sky-line of the building to bear its part. The life and movement of the other combination with nature should be indicated through the introduction of fountains, and the use of sculpture not exceptionally but generally. In our article on the Parks we omitted to advert to the advantage of not confining sculpture to use of marble. Zinc, coated with bronze, and ordinary stone, could be used with excellent effect; and without any deficiency in its own art such sculpture would completely serve the purpose of decoration. The sculpture at Spencer House, before referred to, is no doubt but Portland stone. If some kinds of stone should be considered not suitable, after the aid evidence which our eyes are presented with, or could not be rendered so by preserving coating, there is the enduring terra-cotta, already the vehicle of some excellent attempts, and likely perhaps to be modified in improved manufacture and firing, so as to admit of the full retention of the beauty of the modelling. Other vehicles also are to be found. In one way, or other, great use might be made of sculpture,—instead of as now, no use at all in architecture, with a very small number of exceptions, and no use compared with what might and should be made of it in our parks and gardens. Sculpture has been called "the voice of architecture;" we object to the expression, however. But it can supply one thing, without which our art has no effect—no voice,—the life; the variety; and the contrast with the more rigid form and technical expression of our own special art, of another art—or an element of naturalistic derivation. Thus it is that we can put no limit to the sphere of architecture, properly speaking, without including many of what are sometimes regarded as, and in important essentials are, separate arts.

In our ordinary streets, trees, shrubs, and garden-ground should be found: they should occasionally be met with at unexpected places,—rather than that trees should border the whole line of streets at regular distances, as apparently contemplated by some, an arrangement which would even oppose itself to the particular combination we have been suggesting. Patches of flower-garden, however small, and plants in vases and balconies, should mingle with the architecture, and oppose the free art-work of nature, to the regular and legible art-work of man. Every process or thing of nature or art which can be conducive to variety—without that mere whimsicality, which checks at rule; which any one can have; and which is not art, or fertility of mind—should be made to contribute to the result. Thus, as we endeavoured to point out in a former article, no object of the foreground—whether the pavement, the steps, and lamp-posts of the footway, the railing or balustrades—are underserving of attention. In fact, with the steps of the entrance, such things, properly contrived, spread out the area of base in the eye, group and combine with the building in a whole; produce variety; and help in the appearance of growth from a base, and of structural stability.

It is not, however, by minor matters that variety in architectural features of our streets can chiefly be attained; a great aim should be variety of plan in the streets and open spaces themselves, by the selection of good sites for the public buildings; and by massing of parts, and the prominent use of recessed and projected features in the view. As to this subject, it is enough to remind our readers that we have referred to it in the papers which we commenced some time ago, on the recent history of architecture—especially where we had occasion to speak of Regent-street, and the architecture of John Nash—whose mistakes, indeed, we could not deny, but whose perception of the points we have been treating of, we could not fail to acknowledge. His errors as an artist may show the fallacy that would be involved in relying solely on the pictorial treatment, to the consideration of which more especially we have here devoted ourselves; but his cirques, Quadrants, crescents, and open spaces in plan; his massing of parts, and the variety of general feature in his elevations; and his disposition of buildings on sites like those of the church in

Lugham-place and the Haymarket Theatre, where they might be pictorially effective, are worthy of every commendation, and have not since been equalled, or imitated. But, what London might be, can be gathered from the comparison of a plan showing the positions of its buildings, with the plan of Paris,—or, what it should have been, with Wren's plan for the improvement of the City.

Screens of columns, or arches, should be substituted for the blank walling in Piccadilly, as suggested some time ago, and that of the garden of Grocers' Hall, in Princes-street, by the Bank; and the colonnade in front of Burlington House—semicircular on plan—might be turned to the street, as spoken of by a writer in our pages, with excellent effect as regards the street architecture. Our railway viaducts should not be ever unsightly excrescences, designed with no reference to the streets which they intersect. By the embankment of the Thames, there should be provided, at once, the main artery of communication which London needs, and the finest sites for architectural effect. And, lastly, the garden enclosures should be something more than sites for trees and shrubs; but, on the principle put forth, should themselves be improved by architectural features and sculpture, and should be so planned as to contribute more to the adornment of the streets. There are, however, many objects beyond what we can here refer to, through the medium of which, variety and beauty might be increased.

There must be some cause for the apathy to art in architecture, which after all prevails to a great extent amongst the public. We have tried to show on what principles and through what means, exertions for improvement should be made. The consequences of the neglect of the beautiful in our streets, are little thought of, but they are more serious than is suspected.

#### AN ACCOUNT OF ELY CATHEDRAL.\*

At the junction of the nave and transept stood a Norman tower, which probably, as usual to that style and in that situation, was scarcely elevated above the ridge of the roof; but this falling in 1322, and destroying with it the whole of the eastern portion of the original church, the present lantern was commenced during the time of Bishop Rotham, under the direction of Walsingham, the sub-prior. In itself it is almost unique, there being, I think, no other example except at the monastery of Batalia in Portugal. This octagon is admirably designed: an area is given by making the width of the nave and aisles form the diameter, and the arches of central aisles the width of the arches of the octagon, so that there is no interruption to the view either looking north and south or east and west. The arches to the four sides of the octagon are about the height of those of side aisles, with which they amalgamate as it were, by an angular groin, rendering this portion as a solid abutment to the octagon. On the exterior, from each of the inner angles formed by walls of nave, chancel, and transepts, spring two massive flying buttresses, abutting octagonal turrets at the angle of the lantern. These turrets were originally designed to be pinnacled, but none of them ascend higher than the parapets. This point is rather above the main roofs, and so far the octagon is of stone, but above this the lantern is continued in wood. For the pinnacles being incomplete, and from the fact of their large size, and the well-balanced and massive substructure, I am led to suppose that it was first intended to construct the upper lantern also of stone, and to support it in part by flying buttresses from the angular turrets, they being carried up, to resist the thrust, considerably higher. Whether this design was abandoned from fear of the experiment or from want of means I am at a loss to say, but I think a careful examination would at once determine that even now it would be no difficult matter to build the whole in more durable materials. The four windows that light the lower part of the octagon are each of four lights of good general form, but the tracery is scarcely so well balanced as some of the other windows of the style in the cathedral.

Beneath each window are three tabernacles resting on a string course: they are rather deficient in ornament, but were probably designed to assimilate with the arch beneath, which it was found necessary to dwarf in order to communicate itself with the arches of the side aisles. The vaulting shafts of the octagon spring from the floor in each angle, but are interrupted in their passage by a rather singular design, which is bracketed from them on a corbel, the eight corbels containing representations, according to Bentham and Millers, of scenes in the life of St. Etheldreda, commencing at the right side of the west arch: her reluctant marriage with Egfrid; her taking the veil; her pilgrim's staff taking root whilst she slept; her preservation, with her virginity, by a miraculous inundation; her installation as abbess of Ely; her death and burial; a tale

of her miraculous power after she was canonized; the translation of her body. These eight corbels do not support what at first sight appears to have been a tabernacle, as there is no niche for a statue. I, therefore, fancy they were placed here merely to break what the architect might have feared was rather too great a preponderance of vertical lines. The lantern is contracted above the four windows and the four arches to transepts, nave, and choir, by wooden groining, simply ribbed from the springers, without any cross ribs, a beautiful graceful line conducting the eye to the upper lantern, 30 feet in diameter, which ascends some height in simple panelling, unenriched by anything save foiling at the heads. At this point projects a slight gallery, and above the whole is lighted by eight windows, the ceiling being groined to correspond with that beneath. This upper work, although in a great measure the original, still, from its perishable materials, it cannot fail to have once, if not often, required considerable renovation, not of advantage to the design. The lantern, however, as far as the interior is concerned, has not been much damaged, but on the exterior it bears every impress of repairs which might have been superintended, if one may judge from the style, by the distinguished Beatty Langley. Too much praise cannot be given to Prior Walsingham for so beautiful a feature of the cathedral, although I am doubtful if the design itself does not appear what it really is not—stone rather than wood,—and, as the beauty of all Gothic is its truth, I hesitate to award unqualified praise; but if carried out, as I fully believe it was intended, in stone, this beautiful central tower could not possibly incur a word of disfavour, even from the most fastidious dilettante.

The south and north transepts are now all that remain of that which was first commenced by Simeon in 1081, and are similar in plan, with side aisles, as the aisles to the nave, but the details of the arches on the south are much the simpler. There were, before the destruction of one arch by the building of the octagon, four arches on each side, two piers to each plain cylindrical, the other clustered, as those of nave, only more simply. The capitals are more decorated than the nave, but the decoration itself is merely a slight volute at the angles; the arches they support are quite devoid of any ornament. The triforium and clerestory to each transept deviates very little from those of the nave, with which it seems to have been built, together with a gallery across either end, and an arcade dividing off the western aisle of south transept. The eastern aisle, early in this century, was divided off to form the library, these three bays now lighted each by two-light Early English windows, containing a quatrefoil in the head, probably were the eastern windows of three chapels, as the same divisions on the other side seem also to have been thus appropriated. In the centre of this transept are the remains of the paving, laid in geometric forms of various colours, removed from gallery to Lady Chapel. The roofs to each transept correspond: they are very beautiful specimens of a hammer-beam roof, with angels at the head of beams. The work bears every appearance of the Perpendicular style, but, I think, rather before than coeval with the windows of the same style in the gables, as they are inserted considerably above the timberings, which, had the roof been fixed after, could scarcely have been the case. The roofs have been beautifully decorated: the south has been restored, and the north is now undergoing repair.

From the lantern we arrive at the three bays, built by Walsingham, with the lantern. These three bays mark the extent of the old church, which reached to the pier now remaining (between this work and the six bays of presbytery), forming the base of the apse. This is only original as far as the capital that was added in 1235. Any three decorated bays are, as a whole, unequally by any other decorated work of the class in the kingdom. The arches are all well formed, and gradually conduct the design into the next stage, the triforium, with a rather less interruption than is common to the style. The triforium arches are filled with the best designed tracery I ever saw: the tracery itself does not seem, however, to have been sufficient to satisfy the anxieties of the architect, for he has still further enriched his design with numberless ball-flowers throughout the varied lines of the tracery and arch mouldings. After these beauties, it seems the architect had in a great measure exhausted his powers, for the clerestory windows do not in any degree approach the design of the triforium; in fact, they are singularly poor. The groining is simple, but the bases are good. All the shafts, and a great many of the capitals and prominent mouldings are executed in Purbeck marble, which has lately been polished. The northern aisle, forming at one time a sort of antechapel to the Lady Chapel, or as it is now called Trinity Church, is built of a richness to correspond with the choir, but the southern aisle is plainer, including also, strange to say, a portion of the arches of

\* See p. 635, ante.



the choir. The beautiful oak stalls, of about the middle of the fourteenth century, now occupy the area enclosed by these three bays, but they were originally more westward under the octagon, and were more recently to the very east of the church. The stalls themselves are exceedingly good specimens of the Decorated, and although they do not possess the richness to be seen in later work, the carved work being cut off half way up by a series of foliated arches, and by a horizontal break for the reception of sculptured figures not now existing, but which once no doubt occupied the vacancy which is now capped by crocketed pinnacles. The whole of this has been played in its present position, and adapted together with much new work with considerable taste, but we may perhaps venture to object to the scroll-form desk terminations, which seem scarcely severe enough in form to harmonise with the rest. Beyond the original cathedral, but occupying a portion of the apse, and also of the chancel, if there was one, is perhaps the gem of the whole cathedral, the presbytery of six bays, of the Early English style, commenced in the year 1235, completed 1251. The arches are very numerous, moulded, and project considerably at their springings beyond the face of the clustered column. This projection is still more increased by a detached column being trussed out upon an elegantly carved bracket immediately above the columns, of the aisles, which is continued up to form a vaulting column of the roof. The triforium is a *puissant* bit of this style of architecture, but it is nothing in actual description, as it is merely the simple form of two trefoiled arches supported on a slender column, which is on an equilateral arch, the tympanum being enriched by another foliation. The columns of the comprising arch are well and beautifully recessed, the hollows decorated with a crisp foliage, which runs also in the arch. The clerestory is a triplet. The eaves of the aisle is distinct from the window arch, and is supported on columns, admitting a passage behind. These arches are not foliated, but they scarcely seem deficient in enrichment, their outline being so perfect. The accomplished critic would feel his inability to give a really unbiased opinion as to which he considered the most exquisite compartment of this cathedral: his mind, I am sure, would vacillate between the gorgeousness of the Decorated part and the elegance of the Early English.

The presbytery, with its side aisles, was formerly built in the same style, but from various causes the part of the triforium has been altered, the windows and side walls of the aisles have been renewed, and the windows inserted in the triforium in decorated times; but all these alterations, although giving an interest to the building, were not carried out with the judiciousness to be wished, nor with the taste displayed in the building of the choir. Three lancet windows that close the view of the east, and the five-light windows above, are very similar to the east end of several of the fine buildings of Yorkshire; and if my memory serves me correctly, there is a great resemblance between this one and the east elevation of Whitby Abbey. The arches on either side the triforium and clerestory are carried out in their full integrity: nothing seems misplaced or ill balanced, and all is equally decorated, light, and elegant.

The variety of tints, produced by the employment of Purbeck marble and freestone, is more applicable to this style than any that succeeded it, and is here made use of wherever the circumstances seemed to require, producing a most beautiful specimen of the style.

In the eastern bay of the north aisle is Bishop Alcock's Chapel, an insertion of thoroughly over-loaded work. The screen work consists of nothing but tabernacles, that, in spite of their laced surface, are exceeding heavy and crude. I am at a loss to account for so ill a piece of work, more especially as the commencement, as far as the base of the tabernacles, promised so well, and is in such good keeping in every respect, that the failure, when the work should have been progressively improving, is not to be accounted for, except by the supposition that the lower part was completed under the immediate superintendence of the bishop, who was the controller of the works to Henry VII. and that it was not completed until after his death.

In the opposite bay is the chapel of Bishop West, entered by very good iron gates. This chapel is a most exquisite piece of work: it is most delicately executed, and well conceived in every particular, and although it embraces in its details and design much of a foreign element, in fact, the Renaissance, it is so incorporated with our English Gothic, that it causes no regret at its intrusion.

The whole is most elaborately tabernacled with details exceedingly *petite* and beautiful. The tabernacle work covers the south window, admitting the light only through its perforations, and formerly through the arch above the tomb of the founder; but this has been filled with some earlier panelled work, enclosing the remains of seven early saints. The

eastern window is left quite open, under which formerly stood the altar, but this has been removed, and of late years an ambitious Gothic tomb has been placed in its stead,—a sad intrusion. The ceiling is groined, and is of a bolder character than the tabernacles: the ribs are deep and foliated, and the panels formed by the tracery, enriched by beautiful and delicately raised sculpture. It may safely be said that this most charming chapel fully deserves a careful restoration; but so much of the smaller work has perished, together with the figures that filled the tabernacles and other spaces, that it is to be feared a faithful restoration is scarcely to be attempted.

Trinity Church, the original Lady Chapel, I at first supposed, from its position on the north side of the cathedral, to have been the chapter-house, but I am satisfied, upon examination, that this building never was used for such purposes, although I think it very probable that the arrangement of the stalls was at first designed for that purpose. The Lady Chapel, commenced 1321, runs parallel with the cathedral, joining it only at the extreme eastern angle of the north transept, from which it is now entered by a more recent covered passage, and by a door cut through the back of the stalls. The most beautiful enriched canopy goes round entirely through three sides of the chapel, and across the eastern end also, with the exception of that part which has formed the reredos, which is in a different and later style than the other, and is evidently an insertion. It seems singular that the most important part of the chapel should have been neglected when it was first founded, and it is this fact, among many others, that rather inclines me to believe that this building was not originally intended for devotion: at the same time I am quite sure the beautiful stall-work on each side the altar, forming a continuation of the reredos, was never intended for seats, but was for tabernacles to receive statues. Again, right and left are the remains of the Purbeck shelves, marking the piscina and credence-table; and the stalls, as they approach the altar, are raised one above the other as sedilia.

The chapel is of five bays, beautifully vaulted in a Transitional style, from the later groining to the later fan tracery vault. The windows on each side are well traceried, all alike; but the eastern ones would seem to approach in style the Perpendicular: at the same time I do not imagine they are insertions. This almost unrivalled chapel, strange to say, has no marked entrance, the present one is of later time, nor do I see any way by which the laity could formerly have been admitted. I therefore suppose they must have been entirely excluded from service here. The monks had two entrances on the southern side, through similar arches to the stalls, but to be detected by a recessed arch and capital. Direct from these doors ran a groined cloister, not now existing, in an oblique direction to the third bay, eastward of the Decorated north aisle of the cathedral, where is a most beautiful doorway in a later style than the chapel. In the westward bay of this aisle is an archway about 6 feet from the ground, the window being contracted to receive it, and beneath are two springers for a vault. This marks the position of the former high altar, this doorway having led by a raised and covered passage from the Lady Chapel across the aisle direct to the roof in the cathedral.

In 1770 the old reredos was taken down from its original position, without a single fragment being preserved (one bay east of octagon), the choir being removed to the eastern end of the cathedral. I have no doubt the reredos was sadly mutilated previously, but it is much matter of regret that this alteration took place, as the work of this altar and screen doubtless assimilated with the stall-work in the Lady Chapel, as they were almost contemporary, although in examining the work in the Lady Chapel it is difficult to imagine anything much richer: still I think I may venture to assert that although this altar was in the same style, it must have been, from its more sacred position, still more enriched and beautiful. It is generally said that the bishop of this diocese had no throne, but that he occupied the seat formerly assigned to the abbot; but I am somewhat inclined to doubt this assertion, as the first pier on the south side at the point that supports the groining is encircled by way of capital by a stone canopy: this certainly was intended as a flush to some spirelet canopy work, which must have been of very considerable height, and consequently much too considerable for the canopy of a sedilia or stall, but appropriate as the canopy of a throne.

At the focus of the apse stood formerly the shrine of Eiheldreda, now only known from ancient writings, as its costly jewelled and enamelled work formed too great a bait for the sixteenth century fanatics to withstand. North and south of the shrine the roofs of the aisles were lowered one bay and the Early English triforium arches destroyed, and supplied with poor decorated windows: this was done to let in a flood of light from these points upon the shrine, where rested

the body of one famous in early times as a princess, a queen, an abbess, and a strict and bountiful supporter of all that was good, upright, and generous.

In passing from the contemplation of the architecture of the past, I should wish to draw attention to the way in which it has been restored, under the untiring influence of the Very Rev. the Dean Peacock. For whether we commence at the most simple and least important feature restored, or at the grander parts, we must all allow that the greatest and most religious care has been shown for that which has been spared us. The cathedral, standing, as it must always have done, almost pre-eminent, is still more enriched, not only by the manner in which it has been restored, but by the very judicious way in which that which is new has been introduced (with the exception, perhaps, of the design of the organ, on which there may be many differences of opinion). The screen, in beauty of design, is almost unrivalled by any ancient work: no one, upon looking at this, whether taking into consideration its detail or its original conception, can doubt that there are architects in these days fully equal to any work.

Mr. Gilbert Scott, as the architect of Ely, deserves all praise; and were he not indebted to other works, this work alone would suffice to hand his name down worthily to posterity. C. E. DAVIS.

#### A PROPOSAL FOR THE WELLINGTON MONUMENT.

SIR,—The first step towards the realisation of a Wellington monument has yet to be taken. A design is wanted. The competition has determined the class of designs which are *not* required; but it has not advanced beyond this negative result. Neither have there appeared in other quarters any such practical suggestions as have given promise of filling the void left by the collapse of the competition. Unless we are prepared altogether to abandon our purpose of erecting a national monument to our great captain, it would be well that something should be done in earnest in the matter.

The authors of the competition designs went astray, because they took their first step in a wrong direction. Instead of a sepulchral memorial to be placed in a Christian church, the Wellington monument of these gentlemen was a commemorative structure suited (if suited to any locality whatever), to the courtyard of a palace, to a metropolitan park, or to a military parade-ground. They mistook a monument for a trophy. They may plead that such designs as theirs have been before adopted for national monuments, properly so called,—for such monuments as they had been called upon to produce. This, unhappily, is but too true. Still, this fact furnishes not one title of an argument in their favour. We asked from them a design for a monument to our Wellington—a design at once appropriate and worthy,—such a design as this great country might be now expected to select for the memorial of the most honoured of her sons. And what was the reply of the artists of the competition? They ignored the advance which art and art-feeling have so happily made amongst us during the last half-century, and supplied us with a series of such monuments, as might perhaps have passed muster about the period of the battle of Assaye. Of the models which lately took us by surprise in Westminster Hall, while a few possessed high artistic qualities, and exhibited both the sculptural feeling of their authors and their faculty of skilful modelling, not one appeared to have emanated from a just idea of the monument required. In these designs the prevailing ideas, when not either commonplace or inappropriate, had already been repeated *ad nauseam* under some form or modification. And the allegorical and symbolical imagery was of that kind which, while essentially worthless and indeed often objectionable, was directly opposed to the simplicity and earnestness of the great Duke, and to the strict reality of his character. In these designs, historical portrait sculpture and heraldry, as forms of expression of the finest power and value, were altogether overlooked and omitted, or they were adopted but in a few instances, and then only in a very subordinate degree.

Whatever qualities in the competition designs may have caused them to be set aside, as being unfit to be actually adopted, will imperatively demand a similar decision in the case of every design which, having been conceived in the same spirit, it may be proposed to treat upon the same principles. The design which a favoured foreign sculptor did not exhibit, I accordingly classify with its competitors. Certain rumours connected with this design and its author I refuse to notice, until there is proof that, in this country and at the present time, Art may be associated with dishonour.

\* It will be understood that our correspondent is speaking for himself.—Ed.



The subject of sepulchral monuments has engaged my special attention during the last ten years, and I have all along studied the monumental relics of past ages, no less with the view to derive from them some practical suggestions for the present and the future, than because of either their historical value or their intrinsic interest. And I, consequently, venture to hope that I may be acquitted of presumption if I now submit to you the substance of a communication which I have addressed to Sir Benjamin Hall on the subject of a design for the Wellington monument.

#### Preliminary Considerations.

1. The object required is such a monumental memorial as the British nation would be expected to erect to Arthur, Duke of Wellington.

2. This monument, accordingly, must be both appropriate as the memorial of the Duke of Wellington, and also worthy of the British nation.

3. The monument required is to be placed in the metropolitan church of St. Paul, an edifice in the Classic style of architecture; consequently, with the Classic style of architecture, this monument must be in perfect harmony.

4. The sum of money actually appropriated for the production of this monument is sufficiently large to leave to artists unrestricted freedom of action.

In entering upon the preparation of a design for this monument, the first consideration will be the leading idea, which will govern the general character of the composition. This leading idea, as it bears upon the present special memorial, will be greatly influenced, if not actually determined, by the type which shall have been recognised as applicable to every Christian monument of the highest order. This type I believe to be the oblong, raised, rectangular sarcophagus monument of the Middle Ages, surmounted by a recumbent effigy; and this type I also believe to be equally consistent with every style and expression of art. Its appropriateness for sepulchral commemoration having been felt from the very earliest periods in the history of art, this type is impressed upon every noble monument of the Christian era.

From a numerous series of noble examples, I would specify the monuments of our own Black Prince, and of the Emperor Maximilian, as authorities for such a memorial as I would suggest for an illustrious warrior and statesman. Accordingly, the sentiment of the design now required, with its accessories, will appear to be conveyed, after a manner, at once the most appropriate and the most effective, under the form of groups of historically symbolical portrait statues, with heraldic insignia and classical architectural details, associated with a recumbent portrait effigy. Always a most valuable, and a most eloquent form of monumental symbolism in the design for a monument to the Duke of Wellington, heraldry may expatiate with unprecedented power. In accordance with such views I now submit a sketch for a design as follows. The design to comprehend four orders or stages:—

1. The first or lowest order to form the plinth of the entire composition, and to consist of two broad but shallow steps of polished grey granite, without mouldings or ornament. At each angle, on the upper of these two steps, a group of two statues, of the size of life, in bronze, of soldiers, with reversed arms and downcast looks, as sentries on duty before the tomb of the great general. The eight military figures which would make up these groups would represent each arm of the British army, thus: (1) Heavy Cavalry; (2) Light Cavalry; (3) Engineers; (4) Artillery; (5) Grenadiers; (6) Highlanders; (7) Rifles; (8) Infantry of the Line, represented by a soldier of the 73rd, the regiment in which the Duke held his first commission. These groups to stand clear and well in advance of—

2. The second order, which would consist of an oblong rectangular block of polished warm-coloured granite, having a third step, more elevated than the other steps, and enriched with mouldings and other carved work, as a plinth of its own,—the entire order constituting the plinthiform member of the entire composition. At each angle of this block, a group of English flags, each inscribed with the name of a battle or battles, indicative of the "Hundred Fights" of the deceased hero. These flags to be in bronze or brass. Ranging from each of the angle groups of flags, towards the centre of either side of the composition, a group of historical portrait statues of life-size. Of these four groups, two would consist of statues of distinguished officers, and two of no less distinguished statesmen,—the brethren in arms of the Great Duke, and his associates in statesmanship. Each group might contain perhaps six figures. The groups would be set alternately about the granite block, and close to it, standing upon the third step. Amongst the military statues would be those of Bercford, Lyndoch, Cranford, Londonderry, Hill, Napier, Picton, Hardinge, Anglesea, Raglan, and Gurwood. The statesmen would represent those who flourished about and previous to the Waterloo period,

in one group, including in their number the Marquis Wellesley; and in the other group would appear Peel, Lansdowne, and other statesmen, colleagues and friends of the Duke in more recent times—one of these being the present Premier. At the head, and also at the feet of the composition, the historical portrait groups would be continued by statues of eminent foreign princes, generals, or statesmen, who had co-operated with the Duke: here there might appear Alexander of Russia, Frederick William of Prussia, the Prince of Orange, Blücher, Bernadotte, &c. All the sculpture to be in bronze: and beneath each statue, on the face of the third step, the coat of arms of the personages represented.

In the composition, general treatment, and expression of these groups of portrait statues, the highest artistic genius, skill, and judgment may be displayed.

In the centre of either side, between the groups of statues, on inscription,—the one commemorative, and the other historical. These inscriptions to be cut in the granite, and the former of them to contain the titles of the duke in full, the latter expressing with laconic conciseness the salient points of his career. The granite block to be represented as being covered with the union-flag of England, which would be carved in the granite itself, and would partly fall over its uppermost portions.

3. Upon this representation of the union-flag would stand the third order of the composition. A second and smaller oblong block, or sarcophagus, of the purest white marble, rising from a plinth of Purbeck marble, and supporting a slab of black marble; both of these slabs to be richly wrought about with classic mouldings. Each side of this block would be divided into four compartments by two Roman-Ionic columns, with which two smaller columns of the same order, carrying rounded arches, would be clustered. At each angle there would be a cluster of the principal columns. At the head and feet there would be single-arched compartments. All these architectural members to be executed in serpentine porphyry, and other precious marbles, and inlaid, where it might be desirable, with mosaic work. Beneath each of the eight side arches would appear the arms of one of the countries in which the Duke held (an unprecedented honour) the military rank of *field-marshal*, with his sword and baton crossed behind, or at the base of each shield, and the insignia of his knightly and military orders depending from each achievement of arms. Above the head, the arms of the Duke's father and mother; and at the feet, the arms of the Duke himself, each with appropriate heraldic accessories. All this heraldry to be studied with the utmost care, and expressed in noble sculpture, enriched with enamel,—care being also taken to show that heraldry is an art as well as a science.

4. Upon the black marble slab would rest the fourth and uppermost order of the composition: this would consist of a raised plate of fine bronze, parcel-gilt, and boldly diapered with heraldic and military devices, mottoes, &c. supporting the effigy, which would be a portrait figure, recumbent, the head uncovered, and the hands upraised and clasped together. The figure would be represented in the full uniform of an English field-marshal, having thrown about it the mantle of the garter. At the head of the effigy, which would rest on a cushion, on either side a Bible, a Book of Common Prayer, and a volume of the "Despatches," and of the statutes of the realm; at the feet, the cocked hat and ducal coronet; and, on either side of the figure, the sword, marshal's baton, the sword of state, and other official insignia. The diaper of the plate which would support the effigy would exhibit the arms of the Duke's sons and their ladies, of the Tower, the Cinque Ports, &c. Some of these heraldic insignia would also be associated with the inscriptions in the granite. One or more texts from Holy Scripture would be introduced, and displayed about the effigy. The effigy, with its accessories, to be executed in the finest bronze.

If any canopy be needed, a canopy of open work, in bronze and brass, richly adorned with flags and heraldic devices, might surmount the whole. Such a canopy, of course, in its style, would be adapted to the monument itself, as also, at the same time, to St. Paul's Cathedral. Here would be a noble field for a most important display of historical and genealogical heraldry. I have prepared a design for this canopy, but I do not propose now to trouble you with any description of it.

In conclusion, permit me to state that my design for the Wellington Monument would have appeared in the competition had drawings been admitted: as it was, it was sketched out before the prizes were awarded in the competition, at which time I submitted it to several friends, and amongst others, to some artists of the highest position and reputation. I have waited until now, to see what other designs might be made public. No other designs having appeared, I yield to the urgent advice of my friends, and no longer hesitate to publish my own.

CHARLES BOUTELL.

#### A NON-PREMIATED DESIGN FOR THE GOVERNMENT OFFICES.

It is scarcely fair that the fortunate should alone be favoured,—the rewarded alone have publicity. So we give an engraving this week of the design for the Government Offices of War and Foreign Affairs, which bore in the late competition the number 112, and the motto "Omnicron," to which a premium was not awarded, although it certainly had, and deserved to have, a large share of public admiration.

The author of this design was one of those among the competitors who held, first, that the two offices ought to be united in one composition; and secondly, that the fine frontage obtainable towards the Horse Guards' parade was worthy of the demolition of the present buildings of Downing-street, as part of the entire scheme of building comprehended in the block plan. Accordingly we find him taking the north front of the site from Whitehall to the Park as the main line of composition. Upon this he forms the plan of a recessed centre and symmetrical wings, each wing being an integer of design (one constituting the War-office, and the other the Foreign Minister's residence), and the central portion (the Foreign-office), by the introduction of a dome and various accessories, being made the means of connecting the whole into one palatial edifice. The great extent of this front compared with the minuteness of the details has induced us to present in our engraving only one-half of the entire length, representing the War-office, or east wing, and the recessed Foreign-office to a little beyond the central point: the design is readily completed by supplying a west wing for the Minister's residence generally symmetrical with the other.

The central dome was proposed to cover the state staircase of the Foreign-office, there being a carriage-entrance from behind, with a quadrangle or court of honour opening from the Charles-street or south front. On this latter front the War and Foreign Offices, without the Residence, became an integer of elevation, the Residence receding considerably as a separate building, with a lawn towards Charles-street. The state entrance to the Residence was to be towards the Park on the west.

With regard to the style of design, Mr. Kerr lays down the principle that for the climate, the landscape, and the mental associations, of a northern country, the picturesque is essentially appropriate, leaving the delicate characteristics of the Classic style to the more congenial sunshine and sympathies of the south. At the same time he objects to the details of recognised mediævalism for the edifice proposed, if on no other ground than this,—that no one could expect mediævalism to be extended over the entire district in question, which alone, he thinks, would furnish sufficient reason for adopting it. He therefore professes to employ a picturesque Renaissance to present towards the classicism of Whitehall and the Park, one extreme of a graduation of composition whose other extreme would be the new Houses of Parliament and the Abbey. The design, as shown in our engraving, will explain itself; but it is worthy of being pointed out to the student how anxiously in this so-called picturesque Renaissance the author has endeavoured to preserve that real classicism of æsthetic taste which demands the repudiation of piquant eccentricities, such as constitute not unfrequently the chief material of picturesque design. To produce the picturesque without infringing upon the severely correct is one of the most difficult problems of architectural art, or, indeed, of art of any kind.

In remarking upon a design of such ornate character as this, the question of cost necessarily deserves notice; and it may not be out of place here to advert to this question generally as regards our national edifices. The public at large are probably very much at fault upon this point. It is most commonly supposed that when we compare two designs for the same building, one of which presents an exterior of what we shall call double the amount of decoration of the other, the difference of expense upon the building is as two to one. But nothing can be more fallacious. The difference is as two to one—not upon the cost of the edifice, but upon the mere cost of exterior decoration, which may be perhaps a very insignificant portion of the total cost of building.\*

This ought to be understood in England as it is abroad: if it were so understood, the most persevering advocates of economy would scarcely grudge the cost, properly so called, of architectural art. It may be said to be a rare instance when this decoration reaches (externally at least) 10 per cent. on the main outlay. By all means let there be economy in respect of

\* Take, for one instance, a large square building,—say 500, by 200 feet and 70 feet high: this at 1s. per cubic foot for a complete substantial edifice, suitably finished inside, but extremely plain, would amount to 360,000. Suppose it has one exposed front, 600 feet long, and 170 feet high. Take this at 5s. per superficial foot for decoration of a superior order, and what is the extra cost? Only 7,000!—that is to say, 2 per cent. on the main outlay when in this case turn the front of a workhouse into that of a palace.



A DESIGN FOR THE PUBLIC OFFICES (No. 112, "OCEAN")—Mr. ROBERT KIM, ARCHITECT.





building,—let the project be really proved to be a judicious one before it is undertaken; but when fairly determined upon, let the question of economy in respect of art be properly comprehended, if no more.

Our own opinion of Mr. Kerr's design we have already expressed at some length.

#### THE BROTHERTON MEMORIAL COMPETITION.

HAVING read your correspondent's letter on the above subject in your last week's impression, I hasten to forward you a few more particulars, and to supply one or two omissions of facts, that were perhaps overlooked or unnoticed by him. The competition was marked by something very like injustice at every step. There was nothing whatever mentioned as to mottoes in the advertisement; yet, when the designs were exhibited to the public (before decision), the designers' names were obliterated and mottoes *glued* on in their stead; and in this condition the designs were criticised by the press, so that no uninitiated competitor could recognise his own work. Two days after the decision was made known in the *Manchester Guardian*, the drawings and models (with the exception of the selected drawing) were entirely removed—even the model that received the second premium; so that after the decision had taken place there was no chance for a "wanderer" to criticise the committee's taste. On the way to the Exhibition-room, on this day, a door might be observed marked "Private;" but early in the morning, very publicly thrown open, where the drawings could be seen, pitched pell-mell one over the other in the happiest confusion. The writer of this letter could see his own drawing, which was sent down there perfectly weather-tight, and which arrived in Salford without flaw or blemish; but it was returned on a day of heavy storm, with merely a portion of a Manchester weekly print tied round it; two labels, glued on the face of the drawing, one even encroaching and actually on the drawing itself, with a profusion of glue and about half the hairs of a disabled glue-brush. Its transit through the weather, in the unsafe condition in which it was packed, caused it to be considerably damaged by the rain; and I found that six temporary nails had been driven through the mount and strainer, as preferable in Manchester to the cord and ring. Your correspondent's strictures on the selected drawing are sufficient to tell of the glaring nature of the design. A heavy spire is wholly supported on the heads of eight angels, who are quietly reading books. These angels surround a Greek vase, with a rag across it, in the regular "stone-mason tomb-stone" style: under the angles are twenty niches (query, for the committee's statues?), about half the size of the angels above. The monument was advertised to be erected for 500 guineas. The successful competitor waveringly thinks, in his report, the monument can be put up for about the sum; but he ally says he leaves out the foundations, and the Gothic iron enclosure railing.

VULCAN.

#### BIRD'S-EYE VIEW OF THE MAP OF LONDON.

CONTRASTED with Paris, or many other continental cities, London fails to maintain its dignity. A most happy position is lost for want of grand leading routes; a noble river mutilated through sheer neglect; and many majestic buildings sacrificed, simply because they cannot be viewed at the right *coup d'œil*. Every artist has made up his mind that this is a most lugubrious, if not an unhappy, metropolis; that its ways are not ways of pleasantness; and that nearly all require reformation or improvement. Were the mass of the City and its environs to be placed before them on probation, to stand the test of public scrutiny, it is certain that, like the picture that pleased nobody, the whole folio sheet would be expunged. Already that has been done in detail by various projectors, who, in condemning the narrow and crooked ways, have each of them laid claim to a sort of *patent right* for the origination of new causeways. One has discovered a north or a south, a north-east, or a north-west line of intercourse; another, a great central duct; a third, an easement from St. Paul's;—but who has looked into our miserable public offices; or even into our ill-arranged and most inconvenient (not to say ill-favoured) courts of law? Here, without wholesale demolition and reconstruction, there is abundant work for the architectural talent, as well as for the spare funds, civic taxation, or appropriations from the Exchequer. There is plenty to do in providing new offices, on a scale fairly adjusted between utilitarianism and rational artistic display; and much might still be done in opening out the better street lines, and in disencumbering the many fine buildings we possess.

As in a forest, the wild beauties of nature are concealed by its density—for "we cannot see the wood for trees"—so, in the City we cannot see the buildings for houses; therefore, to redress the misfortune,

a few clearances, well conceived, might effectuate more than a wholesale demolition.

In the plan of St. Paul's Cathedral it was the intention of the architect to reserve a large open space around it. Inigo Jones also, when he projected the buildings at Whitehall (of which the Banqueting-house, the only portion completed, was to form but the wing), had in view the arrangement of his performance, so that it should be seen on all sides as a complete structure.

The only proof that now exists of these intentions is the great width of Whitehall on the west front; and the fact that the cathedral presents on every side a finished front, and of such magnitude of proportion that the close obtrusion of houses never could have occurred to the architect. How could he pile up a temple so colossal, arch upon arch, and column upon column, to an elevation of 200 feet, to be viewed at a distance of only 100 feet? Having receded so far (and there are only three points that admit of a slight somewhat farther, Ludgate-hill, Chesham, and Cannon-street), look up; the *façade* is foreshortened, the projections conceal much of the structural picture, and the meridian light of day dazzles the eyes of the admirer. The proportions of this noble pile are so majestic, that to study and appreciate them the beholder should stand off at least 200 yards from its base. Now, however, owing to the congestion of towering buildings on all sides, the only point of view is from the top of some neighbouring warehouse, or else from the river, and then the grand *pian* *terreno* is wholly shut out.

To encase and box in a gem of great structural beauty would appear ridiculous, almost as much so as the exhibition of your Claude in a railway van, or the locking up of Westminster Abbey, lest its sculptural treasures should meet the vulgar gaze, and improve the public taste, but the occultation of St. Paul's arose from the fact that the charred ruins of the burnt city which encircled the site were private property, the owners whereof were not treated with on the terms of a valuation jury under Act of Parliament; besides that in those days grand thoroughfares and their advantages were not understood, the closes, alleys, and lanes, and the few small reserves of squares (as the monument) sufficiently demonstrate what were the notions of ancient Britons about that epoch.

It was quite otherwise as to the plan of the Whitehall, which was intended to comprehend many public edifices; then, that whole vicinage was open, from park to river, and the morsel which had been completed, and which now remains, was designed in perfect security that no other building should profanely interpose between that and the Thames.

There is no question but that great difficulties now oppose themselves to the opening out and improving of public buildings. The enhanced value of building sites, and the immense accumulation and subdivision of property, are barriers of no small moment even to this wealthy and powerful state; but experience has proved that, in every judicious clearance and renovation, the still higher increasing value of outlying plots nearly indemnifies extensive works of emendation; and as to offices for national business, economy is best studied by the carrying out in a bold and spirited manner such works as are called for by the necessities of the time.

It is not necessary to raise a palace for the location of every petty department, nor to enrich with marbles and emblazon in gold every office; but it is essential that the offices or courts, or bureaus for governmental business, should be convenient, solid, and capacious; and, in the first construction of any of these, it is as easy to have them well designed and executed; and when the ease and despatch of public business are taken into account, it is much cheaper than to stint the outlay at the cost of a bad article.

The expense to the State of hiring offices on temporary leases, to house departments, ever on the increase with an increasing revenue, amounts to a sum total which far overtops the rental of the capital that might be required for their proper establishment and consolidation at suitable locations; and, as a rule in all public structures, whatever the nation does in that way ought not only to be done well, but every such performance ought to be finished in such a manner, as that after-generations might receive them as monuments and tokens of the period of their erection.

Redundant ornamentation and gauge of finery are wholly superfluous: simplicity and unity of style, a bold outline, always in keeping with the object it subserves, should the rather characterise every structure of a public and official nature.

We are led to hope for a better order of things from the directors of public works of these days. Whether these expectations shall be ratified remains in doubt. Competitions have shown what may be done, but how far the genius of architecture may have free scope and fair play, is still a matter of anxious conjecture—for the dread seems to be, that there is

no appeal—none to judge our judges. No, the verdict awaits the final conclusion, and then, as the motto has it, "*finis coronat opus*."

After all that might be advised of change in the structures bequeathed to us, a point of greater importance remains; and that is the river. Viewed from afar, or in proximity, this is the main feature: the flood winds its devious way in might and majesty, but in filth and squalor—slips, mud-banks, crant jetties, obscene sheds and warehouses, bound its stream. Everywhere else a river is a source of health, wealth, and beauty. In this commercial capital the tide is turned to thrift, and that alone. A river flowing through a rich country is the glory of the landscape: in a city, while it enriches and aggrandizes, the varied banks and busy shifts adorn the stream. The bridges lend another majesty; but the solid quay walls and open esplanades exhibit from either side the opposing structures, across the glittering field of water! A quarter of a mile, from side to side, would also show the distant towers and steeples. All this is lost to London. The sewage question is leading on, however, to the development, which, arrive when it may, will open, as it by enchantment, scenes that glow in every returning sun, but which must remain unseen and unknown, until the river quays and esplanades disclose their reality.

#### SANITARY MEMS.

**Water on Sundays.**—The City Commission of Sewers are very properly endeavouring to induce the New River Company to afford a supply to some of the poorer districts late on Saturday. It is to be hoped they will succeed. We have shown by elaborate examinations long ago the absence of water on Sundays in hundreds of houses, and the great evils resulting therefrom.

**Bethnal-green.**—Two inquests have been held at Bethnal-green; one on the body of a child, who died in Peacock's-buildings, Old Bethnal-green-road. The parents of the child were very poor, and Mr. Moore, the surgeon of the district, was of opinion that death resulted partly in consequence of the want of sufficient food; but that "death had been accelerated through the unwholesome state of the neighbourhood in which the parents reside: there is a large open drain at the back of the house where the deceased died, and there were several pestiferous nuisances at the rear of the house, and other manufacturing trades carried on immediately on the spot." Mr. Moore said,—"There were two other children at present ill in the same house, and unless they were at once removed they would certainly die in a few hours. He considered that the other inmates in the house were also in danger, and that steps should immediately be taken for the improvement of the place. Another inquest was held on a child who died at No. 20, Old Bethnal-green-road. The jury returned a verdict, "That the deceased died from natural causes, accelerated by the poisonous condition of the house in which the parents resided." And it was remarked that the attention of the Board of Health should be called to the place. A juror said that they paid heavy sewers' rates, yet the inhabitants of Bethnal-green were the most neglected in the east end of London. The district is inhabited by a large number of the very poor, who require the blessing of good drainage even more than those in better circumstances.

**Scarcity of Water in Edinburgh.**—A report (says the *Edinburgh News*), was given in by the Lord Provost's committee, on the remit to them, to inquire into the cause of the deficiency of the water supply, on the occasion of the fire in James's-court. The report stated, that they had a conference with a deputation of the Water Company, on the 28th ult. on the subject. Mr. Newton, on the part of the Water Company, stated that the present drought has been of unusual intensity and duration, and to this ascribed the deficient supply on the occasion in question, as the company were unable to supply constant service for the town, and the water had unfortunately been turned off from the locality when the fire occurred. He, however, assured the committee that, should it ever happen that the water was turned off from a locality in which there might be a fire, every effort would be made to turn it on without delay; but in answer to a question by the Lord Provost, did not know that anything beyond this was at present in their power. He stated that they were pressing forward their new works, and that when they were finished, which would be on or before July, 1859, they would have a greatly enlarged supply, which would prevent any such deficiency as that complained of.

It was argued that the domestic dwellings should be supplied before the manufacturers, distillers, brewers, &c. but it was shown that if the public or private works were stopped, some 30,000 persons would be thrown out of employment.



## CHURCH-BUILDING NEWS.

Mr. M'Laren said, what they had to complain of the Water Company was, that they should be taking in new manufactories and works to supply water to, when they knew they were not able to supply the public; and that their conduct was like that of a merchant who took payment twice for the same goods, for they obtained money from the inhabitants for constant service, and yet, while they failed to discharge that duty, they supplied other classes.

Respecting the houses of the working population, a correspondent of the same paper says,—"I have no hesitation in stating, that the working classes of Edinburgh would be amply satisfied if they could get houses with a good room and kitchen, closet, well, presses, water-closet, and soil-pipe, and I think that such houses could be built for 100l.; and certainly such houses would be one of the greatest boons that could be conferred on the working classes; instead of as they are just now paying 4l. to 5l. for one room (per annum), and 7l. and 8l. if you have a room and kitchen; and there is no tradesman who is able to pay 7l. or 8l. without having lodgers, or some other way than his wages. I allude to such as masons, joiners, plumbers, plasterers, slaters, and such like, . . . and I am sure that there are hundreds of working men in Edinburgh who will strain every nerve to second the enterprise by purchasing the houses if they are sold at prime cost."

## A SANITARY COMMISSION FOR OUR ARMY IN INDIA.

THE urgent appeal which we were impelled to make three weeks ago, calling for the appointment of a sanitary board, with men to carry out their instructions, to proceed at once to India for the preservation of our troops (the enlistment of science and forethought against ignorance and carelessness), has been very loudly echoed by our contemporaries, but no steps have yet been taken that we are aware of to meet the requirement. The *Daily News*, the *Morning Post*, the *Standard*, and many other papers, reprinted the whole of the article, and the letters we have received from men best fitted to form an opinion on the subject have strengthened our convictions, and afforded fresh evidence of the good that would be done by such an appointment. The *Sheffield Independent*, commenting on our appeal, says,—

"Such a staff might be a new thing under the sun, and its duties would be very delicate and difficult—possibly involving danger of collision with the officers and many of the usages of service. But we conceive the thing is not impracticable, and that it would work well. Very great credit is due to the writer for his clear and forcible reasoning, and if the plan here indicated be set aside on that score, it would imply a very unworthy feeling on the part of this country, as if we shrank from duty in war as to take the life of the enemy; and it is unquestionable that a distinct and sufficiently powerful body of sanitary officers, and also of workmen to carry out their instructions, attached to the Indian army, would be the means of saving thousands from an untimely grave, and thus of adding immensely to our available force. The cost of such an expenditure is not worth estimating, as it would eventually be an incalculable saving in every way."

After reprinting our observations, the writer continues,—

"These common sense views commend themselves to everybody's judgment, and ought to weigh both with the Recruiting-office and the Treasury. To preserve the life of our own is almost as great a necessity in war as to take the life of the enemy; and it is unquestionable that a distinct and sufficiently powerful body of sanitary officers, and also of workmen to carry out their instructions, attached to the Indian army, would be the means of saving thousands from an untimely grave, and thus of adding immensely to our available force. The cost of such an expenditure is not worth estimating, as it would eventually be an incalculable saving in every way."

The appointment should be made at once: not a moment should be lost; indeed, it might be desirable to give powers by telegraph to a *pro tempore* board of men already in India, pending the arrival there of the permanent staff.

Sir,—The news from India states that the brave General Havelock, when just on the brink of great success, was obliged to retire, not before the arms of the enemy, but in order to carry off his sick, a large portion of whom were suffering from cholera. A short time ago you suggested the necessity of express sanitary measures being employed for the preservation of our army in the East. I feel satisfied that each month will show more the necessity for such an arrangement. I do not mention this for the purpose of adding to the already great anxiety of connections at home, but believing that the lives of many of the brave men who are fighting our battles may be saved by the employment of proper sanitary officers, let me beg you again to urge the necessity of immediately sending to India a body of men similar to that which was employed with such excellent effect in the Crimea. The flower of the British army is leaving our shores to carry their arms into a dangerous climate. We live in the days of the locomotive and the electric telegraph: our soldiers no longer go into battle with the crossbow and buckler. Let us trust, then, in this age, which is remarkable for the progress of science, that those who have the great responsibility of preserving our countrymen will not neglect, until too late, the employment of such means as will have the sure effect of preserving many valuable lives. VIATOR.

*Eastbourne.*—The accommodation afforded by Trinity Church, Eastbourne, having become inadequate to the wants of its district, it is proposed to erect a chapel of ease to that church, at Sea-side. A lady connected with the parish has presented a site and the sum of 1,500l. as an endowment. Further subscriptions, amounting to about 980l. have also been promised, and collections made amounting to nearly 1500l. The estimated cost of the new church is 2,000l.

*Kilkeel.*—The parish church of Kilkeel, according to a Newry paper, has been for a length of time undergoing a general renovation, the nave being remodelled, the old galleries taken away, and a new gallery erected in the west end. The work was done, under direction of the Ecclesiastical Commissioners, by Mr. Robert Mance, of Newry, who is also preparing an open Gothic roof for the Church of St. Patrick's, Newry.

*France Lynch, Biele.*—On the 15th inst. at the village of France Lynch, situated on the border of Biele-common, the new church of St. John the Baptist was consecrated. The edifice has been erected chiefly through a gentleman unknown except to a few individuals. The church stands at the head of a dell sloping down to the Chulford valley. Mr. G. F. Bodley, of Brighton, was the architect. The edifice consists of a chancel, nave, and north aisle. The length of the nave is 57 feet 10 inches, and width, 18 feet; the north aisle is the same length as the nave, and is 9 feet 2 inches in width; and the chancel is 27 feet 9 inches long, by 17 feet 6 inches in width. There is a vestry, over which is the organ-chamber, which opens into the chancel. The porch is 9 feet long, and 8 feet 6 inches in width; and the height from the floor of the nave to the apex of the roof is 38 feet, and from the ground line to the top of the bell turret, 60 feet. There is accommodation in the nave and aisle for 228 adults and thirty-five children; and in the chancel for ten adults and fourteen children. All the seats are free except those in the chancel. At present, some of the windows are filled with plain glass; the others are filled with stamped glass, by Laver, of London. The roof is open, the timbers being of deal, stained and varnished; the bench ends are of oak, and the seats stained deal, and all varnished. The seats in the chancel are carved oak. The floor of the nave and aisle is laid with common Staffordshire tiles, of black and red colours: the chancel floor is covered with Minton's encaustic tiles. The chancel steps and the font are of Devonshire marble. The pulpit is of Painswick stone. The reredos is composed of alabaster, marble, and Minton's figured tiles, and in the centre is a circular panel, in which is a cross of marble of different colours, inlaid on a white ground. There is a carved cornice over, of Painswick stone. The corbels and caps of the arches will also be carved. There are two shafts of polished marble on each side of the chancel arch, also marble shafts at the east window; and it is intended to have polished marble shafts to all the windows of the chancel.

*Chichester.*—At a recent meeting of the Local District Board, tenders were opened for the erection of a boundary-wall and two chapels, and the lodge, for the new cemetery. The tender of Mr. Charnock, of Christchurch, Hants, was accepted for the erection of two chapels and the lodge, at a cost of 1,820l. For the building of the boundary-wall, the tender of Mr. Chase, of Marden, was accepted, at a cost of 157l. 10s. The following is a list of those who tendered,—ten in number; Mr. Charnock, for the chapels and lodge (accepted), 1,820l.; boundary-wall, 215l.; Mr. Ellis, Chichester, chapels, &c. 1,980l.; wall, 224l.; Mr. Chase, Marden, chapels, &c. including the tender for the wall, 157l. 10s. which portion was accepted by the Board, 2,281l.; Mr. Johnson, Chichester, 2,276l. for the chapels, &c.; Mr. Fabian, Brighton, chapels, &c. 2,176l.; wall, 255l.; Mr. Clear, Purbrook, chapels, &c. 2,326l.; wall, 250l.; Messrs. Caley and Bourdman, Hambledon, chapels, &c. 2,659l.; wall, 214l.; Mr. Philcocks, Brighton, chapels, &c. 2,470l.; wall, 443l.; Mr. Chase, Emsworth, chapels, &c. 2,750l.; wall, 180l.; Mr. Reynolds, Brighton, chapels, &c. 2,523l.; wall, 439l.

*Ugthorpe.*—The Roman Catholic Church of St. Ann, at Ugthorpe, nine miles north of Whitby, was reopened on the 15th inst. with great ceremony. The church was erected in 1855. The chapel has been converted into a school-room. The interior has been walled and floored, so that about 100 scholars can be accommodated. The church is built in the transition style of Gothic architecture, the chancel being a little more ornate or advanced in period. The plan consists of a porch, entering beneath a tower, nave and aisles, chancel, and vestry. The total length of the building internally is 85 feet, the nave being 62 feet long. The greatest width is 39 feet, the nave being 19 feet wide. The internal elevation is 31 feet up to the ridge of the nave, and the tower rises externally to a height of 45 feet at present. A spire, which is

projected, would increase the height to 70 feet. The nave is lit by a large western window, with geometrical tracery in the head, and small clerestory lights. The aisles have two light windows, with pierced heads. The nave arcades are formed by stone arches, on circular shafts, with caps and bases. The chancel has three side windows of two lights each, and an eastern window of three lights. The roofs are all open timbered and boarded. The chancel has now been beautified with a mosaic tile pavement from Messrs. Maw's manufactory at Broseley. The lower portion of the chancel and its roof are decorated, the former in tints of maroon, green, and gold, by Mr. W. Stonehouse, of Whitby. The stained glass eastern windows of the chancel and south aisle, and the west window of the nave, lately put in, are by Messrs. Hardman. The east window consists of three lights and tracery, in the Early Decorated style of architecture. In the centre light is a figure of Our Lord enthroned, instituting the Eucharist, and surrounded by ruby seraphim, surmounted by a floriated canopy, in which are introduced half-figures of angels bearing a scroll, with appropriate legend. The lower part is filled with foliage, arranged in form of crosses. The whole is bordered by a coloured ornamental margin. In the side lights are figures of the Virgin Mary and St. Anne, upon diapered backgrounds. The west window, of four lights and tracery, contains the fifteen mysteries of the rosary, three mysteries in each of the four lights, and three in the circles of the tracery, the groups being connected by the branches of a rose-tree, which is carried throughout the window. Over the porch at the outside is a statuette of St. Anne. The window in the south aisle has two lights and tracery, and comprises a group of the holy family, including St. John the Baptist. The Virgin is seated upon a throne, holding a rose, and Our Lord, standing upon her knee, turns towards and blesses the advancing figure of St. John, behind whom St. Joseph kneels in adoration. The groups are surmounted by an architectural canopy. Throughout the church the architectural detail is of the simplest possible description, but uniform in character. Whatever of ornament there is in the fittings or completion of the fabric is concentrated in the chancel. The entire cost of the edifice, which is erected of stone, lined throughout with brickwork, to ensure internal dryness, and including furniture, adornments of stained glass, &c. is about 1,500l. Mr. Wm. Falkenbridge, of Whitby, was the contractor. Messrs. Waightman, Hadfield, and Goldie, of Sheffield, were the architects.

*Wolsingham.*—A memorial window, by Mr. Wailes, has recently been placed at the east end of the newly-erected chancel of Thornley Church, Wolsingham, Durham. The window consists of three lights, the centre light representing our Lord on the cross, and the Magdalene clasping the foot of it; in the left light are the Virgin and the other Mary, and in the right light St. John and the Roman Centurion. The tracery above is filled with angels bearing emblems.

*Lochlee.*—The Free Church, Lochlee, was reopened on the 10th inst. by the Rev. Dr. Guthrie, of Edinburgh, in presence of the War Minister, Lord Panmure; Mr. Hay, the architect of the building, &c. The new church is situated on a rising knoll, and forms a picturesque object in the approach from Broxburn, and from Invercumb, the shooting lodge of Lord Panmure. It is a simple parallelogram, 61 feet long and 31 feet wide, with a campanile or tower, part of which forms the vestry. On the south side is an open porch, about 13 feet square. The church is Gothic in its general treatment, with semi-circular arched windows similar to the Norman, divided into five bays, a three-light window at the west, and a two-light window at the east end. The roof is framed with semi-circular arched trusses, purlins, and rafters, all painted and varnished in imitation of oak. The architect's design, it is said, has not been fully carried out in some particulars, such as the building of the wall, and especially in the roofing of the church with the fine grey Forfarshire flags.

## SCHOOLS IN THE PROVINCES.

*Sheffield.*—The foundation-stone of St. Marie's Roman Catholic schools for girls was laid in Suffolk-road, on the 15th inst. by the Duchess of Norfolk. The site is a vacant piece of land immediately opposite the Farm. These schools are intended for poor girls, to consist of an apartment 80 feet long by 30 wide, for the more advanced pupils; and a room 52 feet long by 24 wide, for infants. To both schools are attached class-rooms, and a corridor or gallery, which connects the two together, will be used for a dining-room and for recreation. There are rooms for the teachers, and play-grounds attached. The buildings will be constructed of brick, with stone facings, in a simple style of ecclesiastical architecture, in accordance with the objects in view. The site (half an acre) is the gift of the Duke of Norfolk, and his Grace is a subscriber to the building fund, which is raised by volun-



try contribution, aided by the Privy Council grant. The entire building will cost 2,600*l*. The architects are Messrs. Weightman, Haddfield, and Goldie, of Sheffield; and the contractor is Mr. George Wade, of the same town.

**Hull.**—The foundation-stone of St. Paul's Church New School, for boys, was laid last week. The building, the plans of which have been approved by the Committee of Council on Education, will be in the Early English style, of white brick, with stone dressings. The principal school-room will be 73 feet 6 inches in length and 30 feet in width, with desks arranged along each side capable of seating 250 children. There are to be two class-rooms 20 feet by 16 feet 6 inches each, in one of which there will be a gallery. The roofs are to be open timbered, with principals having arched ribs springing from stone corbels, and all the timbers stained in imitation of oak. At the intersection of the school and class-rooms, there will be a ventilating turret. The area of the school and class-rooms is 2,865 superficial feet; and, according to the rate of 8 feet per child, on which the committee of council have their calculation as to capacity for teaching, accommodation for about 350 children will be provided, and a play-ground will be attached to the school. Mr. Botterill, of Hull, is the architect; Mr. Hall, the builder.

**Hunslet.**—The foundation-stone of a new Sabbath day school, in connection with Wesley Chapel, Hunslet, was laid on the 14th instants. The site selected is in Leathley-road, Pottery-field, the centre of a dense and increasing population; and the school, when completed, will comprise a school-room 76 feet long by 85 broad, and master's residence, and will accommodate 250 boys and girls, and 150 infants, as day scholars, and a still larger number as Sunday scholars. The estimated cost is 1,706*l*.; of which 1,500*l*. have been raised, including a grant from the Committee of Council on Education, of 886*l*.; the balance having been raised by subscription.

**Newcastle-upon-Tyne.**—New Roman Catholic schools, with a master's house attached, have just been completed at the Brooms, in the immediate neighbourhood of the Consett iron-works. The buildings are Gothic, and are of stone, with open timbered roofs, stained and varnished, projecting over the eaves, and finished with an ornamental ridge tile. The walling is built in long, flat courses, pointed with dark mortar. The school is entered by two porches, for boys and girls respectively, constructed of timber and stone, and set upon a stone base, the timber being moulded and stained, and filled in between with small courses of stone. Upwards of 150 children attend the school, and, with the exception of a few pounds subscribed, the whole cost has been defrayed by the Rev. G. Dunn, of the Brooms. The architect from whose designs and under whose superintendence the buildings have been carried out, was Mr. Archibald M. Dunn; and the contractors were Messrs. Gibson and Stewart, both of Newcastle.

#### THE MARLYBONE FREE LIBRARY.

THE statement made by "One of the Committee" of the above unfortunate and mismanaged institution, in the *Builder* of the 12th inst. is not altogether satisfactory. I do not think the placards, announcing its close and the return of books to the members, could have been widely distributed, as alleged; they could not have been diffused throughout the borough without my seeing them. Some time since, in a conversation I had with Mr. Somers, the secretary, he said they contemplated transferring them to the Pension (Archbishop's) Library, at the back of the National Gallery. I think a central situation like that was more suitable for the transfer than the Fitzroy Teetotal Association could be, in an out-of-the-way place, very imperfectly known; or even preferably, the London Mechanics Institution. If application were made to many of the contributors, as stated, why was it not made to all? It was no more than they were entitled to, and displays a principle that can scarcely be defended.

CLAN CHATTAN.

#### THE SHEFFIELD CRIMEAN MONUMENT COMPETITION.

THE following letter from Mr. T. L. Donaldson, to the committee in this matter, dated 17th September, will show what has been done:—

"I beg to report to you that Messrs. Pashley and Jackson having arranged the drawings and models sent in by the competitors, at the rooms of the Royal Institute of British Architects, Messrs. Mitchell, Thomas H. Wyatt, Owen Jones, and myself, attended there on Friday, the 13th instants, and conferred and examined the several designs. Mr. G. G. Scott could not attend, being out of town. Mr. Mitchell also attended on Monday, the 14th instants, with Mr. G. G. Scott and Mr. Owen Jones, as also myself, and we again examined each drawing and model. The three referees again conferred together, and there being a difference of opinion on the merits of the respective designs, a paper was handed to me as umpire to decide thereon.

It appeared that two of the gentlemen voted for 'A. In memoriam,' a Gothic design; and two voted for 'In memoriam,' a model with an obelisk and figure of victory, distributing wreaths—for the first prize.

Two also voted for a Gothic design, with the motto, 'Victoria,' as the second best; and two for a drawing of a pillar, with the motto 'Tout est pour le mieux dans le meilleur des mondes possibles.'

In virtue of my office as umpire, in consequence of the equal balance of votes, I adjudged the first prize to be awarded to the model, 'In memoriam' aforesaid; and the second prize to the Gothic design, 'In memoriam' aforesaid.

In consequence of the equal balance of votes among the original referees, I conceived that the committee may exercise a discretion in the selection of which of these two should be carried into execution, in order to choose the one which may be the most adapted and best suited to the local circumstances to carry out the views of the subscribers in the most satisfactory manner. But in either case the committee must take care to assure themselves that the authors respectively will execute their projects in an able and satisfactory manner. The one to which I have awarded the premium requires much taste and experience to carry out the sculpture in a first-rate style; and the construction of the Gothic design is so defective, as to require considerable modification to render it a stable and permanent erection."

#### HOUSE AGENTS' ACTIONS.

As a caution to my brother agents and surveyors I send you a decision of the Judge of the Brompton County Court in an action in which I was the defendant. Being the agent of twenty-two houses in one terrace, most of them empty, I put the plaintiff in one to take care of them, giving him on a written paper what his duties were to be, and what he was to be paid per week, besides a commission of 24 per cent. for every house of the twenty-two that a tenant was found for. Subsequently, some six months after, eight of the houses being on mortgage, were taken possession of by the mortgagees, and I was deprived of the agency, leaving me but fourteen to manage.

In one of these fourteen my servant, the plaintiff, still continued to live and act for me; but his weekly salary having been reduced, I permitted him also to act for the mortgagees of the eight houses, telling him that I would have nothing to do with the payment for them, but he must make his own arrangements with him. This he did, verbally, and two of them having been let, he sent in a written claim to the mortgagees for the same 24 per cent. commission as I was paying him on the letting of the fourteen houses. The mortgagees declined payment, and the plaintiff, whom I had in the meantime dismissed, then sued me as the agent, putting in the paper I gave him on first placing him in charge.

The Judge decided that I must pay, because I had not given my servant, the plaintiff, a formal notice in writing to say that I was not the agent for the mortgagees, and thus neglected to withdraw the said paper, which, indeed, I had forgotten all about.

This, Mr. Editor, may be law, but it certainly cannot be justice, to make me pay for the letting of houses of which I was not the agent when let. W. Moxon.

#### THE ARCHITECTURAL ASSOCIATION.

THE opening *conversazione* will be held on the 2nd of October, when an address will be read by the president, Mr. Wigley. Papers have been provided for all the public nights, as follow:—

Oct. 16. "On the Public Libraries, Art Schools, Museums, and Buildings in London, with the Advantages they offer in Architectural Education," by Mr. S. C. Capes. 30. "Architecture in connection with Competitions," Mr. E. Mallandaine.

Nov. 13. A paper by Mr. J. H. Christian. 27. "Review of the Instructions on Ecclesiastical Building by St. Charles Borromeo," Mr. G. J. Wigley.

Dec. 11. "The Education and Professional Lives of the early Italian Architects, Artists, and Sculptors, contrasted with the Education and Practice of Modern Times," Mr. R. Druce.

Jan. 8. "Chimneys," Mr. S. E. Rosser. 22. "Conversazione."

Feb. 5. "The proper Limits of Imitation," Mr. W. Young. 19. "Fresco Painting as applied to Works of Architecture," Mr. J. Norton.

March 5. "Speculation and Competition: their Effects on the Buildings of the present Day," Mr. J. W. Penfold. 19. "Science of House Building," Mr. G. Aicken.

April 16. "The value and due use of the Picturesque in Architecture," Mr. A. Graham. 30. "Conversazione."

May 28. "London before the Fire," Mr. B. J. Benwell; &c.

#### ARCHITECTURAL UNION COMPANY.

SUPPORTERS of this undertaking are gradually consolidating themselves, and are coming in; but in the mean time the directors find they are obliged to close with, or to reject the advantageous offer of the premises in Conduit-street. They must pay the alterations, &c. to make. Will you permit me, through your pages, to call attention to the fact that some 3,000*l*. are still to be provided, and that as the directors pledged themselves, in the first instance, not to proceed unless they could do so "safely and easily," they will, in an immediate opportunity, unless enabled to act at once by an accession of support? Their position is all the more tantalising because they have received a number of offers of aid, which are not in due form, but which are, no doubt, all intended to be fulfilled, though delayed from some cause or other. I trust before Tuesday next shares for the greater part of the above sum will be applied for.

The Auxiliary Donation Fund continues to receive accessions, and among the more recent are Messrs.

Lucas, of Belvedere-road, and Mr. Thomas Grissell. Surely there are many more among the great and wealthy contractors who will lend a hand on this occasion.

That part of the scheme which supplies galleries for the Architectural Exhibition and its adjuncts should be of especial interest, as it is sure to add greatly to the profits of all connected with building manufacturers. The warm way in which Mr. Magnus, Mr. Peirce, Mr. Jennings, &c. &c. have entered into the matter, is a proof of their appreciation; and they are able to judge.

JAS. EDMESTON, Jun. Hou. Sec.

#### ST. CROSS HOSPITAL.

As one who has taken and does still take a deep interest in the above magnificent and noble institution, with reference to the malversation of its richly endowed property, I was much gratified in reading the pertinent observations which appeared in a recent publication. The funds of that hospital, or more properly of the two, "the hospital of St. Cross," refounded by Henry de Blois, in 1157, in the parish of St. Faith, for a prior and thirteen impotent men, as a curative hospital, and the "Alms-house of noble poverty," founded within the precincts of the former, by Cardinal Beaufort, in 1444, for a master, thirty-five decayed gentlemen, two chaplains, and three nurses, are, when ultimately restored, and the charities obtain their right, capable of maintaining near 400 permanently crippled veterans of our army and navy, instead of at present only thirteen non-digible men. The charity of Cardinal Beaufort has long ceased to exist, and the thirteen impotents reside in that foundation, their own having been razed to the ground years ago.

The church is, as you justly observe, a most beautiful specimen of art, and being public property, ought to be exhibited to public gaze without filthy larceny; but, sir, it may be gratifying to your readers to know that the days of the trustees who sanction such things are numbered, for, from the mastership of the hospital being proved, and admitted to be an ecclesiastical benefice, the Court of Chancery have no jurisdiction over it; and Mr. Knight, the member for West Worcestershire, intends bringing the whole of this nefarious case before the House of Commons, and a noble lord before the House of Lords, as nothing but Parliament can, under such circumstances, deal with it for the future; and when all the infamy is fully exposed—as exposed it shall and will be—to public view, they will, as you hint at, if not corrected, apply the "apple-twist" remedy most unsparingly.

H. HOLLOWAY,

Late Churchwarden of the Parish and Parish Church of St. Faith and St. Cross Hospital.

#### THE HIGHWAYS OF MILE-END.

MAY I ask the favour of being allowed, through the medium of your very useful columns, to say a few words on our public highways?

I would take this opportunity to express to you the pleasure I often feel in reading the many papers in the *Builder*, in which the merits of the workers in the useful and the beautiful are discussed; and also with the severities with which you treat occasionally those offenders who will venture their flinches and their phantasies to the public.

It is pleasant, sir, to note the many improvements now going on in the town—the demolition of the old hole-and-corner order of things, in the dark purlims of which crime and infamy had so long and so securely nestled. These are the beginnings of a healthier characteristic of metropolitan life than that known to the fathers of the present race, and which, without doubt, in due time, produce a sounder and worthier tone in the domestic arrangements and tendencies of the coming generation.

But to my object. I would introduce to public consideration, not the peculiarities of art, or any of her deeds, but a plain fact—the disgraceful condition of some of the highways of the metropolis. The one I would particularly introduce to public notice is that of Whitechapel-road, with its continuation of Mile-end. This road, the most airy, spacious, and pleasant of all our main thoroughfares, running in one broad, straight line from the town, is obstructed and disfigured to an intolerable extent. A thousand sorts of odds and ends are scattered partly over the pavements, and all over the waste ground, from the pavement to the road—old shoes, brockery, crockery, easternmongery, fish, shells,—the garbage of which are flung about and there left to rot, in all directions, in the open air. Then, again, on Sunday, out come the licensed victuallers in great strength, filling the pathways with their benches and their crowds of guzzlers. This, combined with the efforts of the smokers, hawking and spitting, from the boy of twelve to him of threescore, make up a scene truly disgusting.



Such is the state of things, particularly on Sundays. The pathways are then impassable; and unless you are disposed to fight your way through the filthy crowd, and fill your lungs with the foul effluvia, you are compelled to give up the footpath and take to the road. No wonder that the *Times* calls us a "rough lot" at Mile-end!

Now and then complaints are heard against the "authorities," for permitting this mischief; but all this is mere smoke. Why, it is the authorities themselves—I mean the people of the district—who originate and perpetuate the mischief. Shopkeepers, now-a-days, are not content with a reasonable display of their goods in their shops, but fill the pathways with them; thereby giving the passengers, not only an opportunity of seeing them, but of kicking them before them to test their true merits. Yet this exposure of their goods cannot be to the interest of the owners. Who but an idiot would buy White-chapel furniture? the varnish and joinery of which are daily exposed to the dislocating influences of the sun, the wind, and the rain.

As I understand the law, the vestry, as constituted by Sir B. Hall's Act, are vested with the power to manage the affairs of the parish throughout these details. If so, how can they look on the disgraceful state of their main thoroughfare without feeling the natural impulse to use their power in the endeavour to abate the evil? One would imagine that they would feel proud to use their power to cleanse and beautify this their public highway, possessing in itself so many desirable capabilities. I am willing, however, to grant that vestrymen have some curious fancies to encounter in these matters. The great Napoleon, it is said, found more difficulty in the little domestic squabbles of his own fire-side, than in his conquests of Europe; so with the vestrymen. The greatest parochial heart will throb with leniency when called upon to do its duty upon a chum, whom it sits beside in those cozy adjournments to the "Pig and Whistle," which will ever occur in the best regulated vestries.

A TAX-PAYER OF FORTY YEARS' STANDING.

#### ENCOURAGEMENT TO DESIGNERS.

##### ELECTRO-SILVER BEDSTEAD FOR EGYPT.

A LARGE German or electro-silver steel bedstead, manufactured by Messrs. Charles Williams and Co. of Oxford-street, is now on view at Willis's-rooms, St. James's. It is one of six which were ordered by the late Viceroy Abbas Pasha, in contemplation of the marriage of his son to the daughter of the late Sultan of Egypt. Three of them are camp bedsteads, which admit of being taken to pieces and deposited in a case of very small dimensions. The dimensions of the bedstead on view are, height 18 feet, length 7 feet 6 in., and width 5 feet. The head of the bedstead is composed of polished pierced work out of the solid metal, and is surmounted by a rich Italian foliage. The foot partly harmonizes in character with the head, but has on the outer side a shell-like ornament in bold relief too large in scale for the rest of the design. The sides are composed of rich Italian scroll-work, the open work being shown by crimson velvet lining. The base consists of polished Guilloché ornaments, and the entire work is surmounted by an arched canopy, supported by four light, brilliantly polished pillars. We understand that the cost of the six articles will not be less than 10,000*l*.

The manufacturer seems proud rather than otherwise of the fact, that the design is "taken" from a carved wooden bedstead shown in the foreign department of the 1851 Exhibition. We have not the same feeling on the matter, and regret that none of the 10,000*l*. spent is to go to art. This is encouraging our designers with a vengeance. The workmanship of the bedstead is excellent, but we do not appreciate the choice of the material for such a purpose.

#### STAINED-GLASS WINDOW FOR ELY CATHEDRAL.

MR. FRANCIS OLIPHANT, aided by Mr. Dyce, R.A. has just now executed a window for Ely Cathedral of more than common excellence in several respects. It will be remembered that it was proposed to set up here a choristers' window, but those to whom it was mentioned fell off when money was needed, and the present work, commenced under the original proposition, is insured. "In honour of God and his worship this window is presented by Thomas Ingram, some time chorister in this church." Mr. Dyce, we understand, gave his services gratuitously, in consequence of the circumstances, and the painter also met the views of the donor. The window is of three lights, and is an illustration of the text "Praise ye the Lord: all his angels, both young men and maidens, old men and children, praise ye the Lord." In the centre, David, seated, gives praise with his harp, and a crowd of worshippers behind raise their

voices. In the left-hand light, females, and in the right males and children, carry out the idea: the whole are under fourteenth-century canopies. The figures, although sufficiently conventionalized, are well drawn, and the expression of some of the heads—that of the female with the musical instrument in the left-hand light particularly—is excellent. The white glass, judiciously introduced in thin lines, is very good—pearly and sparkling. We may safely congratulate all the parties concerned.

Mr. Oliphant has in hand a large east window for the church at Diss, to be erected in memory of the Rev. Mr. Manning, the late rector.

#### NOTES UPON IRON.

THE iron trade has experienced a serious check in the last ten days. Nearly all communications between the British ironmaster and his very valuable customer on the other side of the Atlantic have been suspended until the money panic in America assumes a somewhat different feature to that which it now presents. During the time that we have named, a large number of orders recently sent from the United States market have been countermanded, and the execution of others has been suspended. The home trade, however, continues tolerably good; and since our last report there has sprung up a better demand for plates intended for girders for bridges, and other wrought-iron erections. There are now also about orders for considerable quantities of iron of a description which show that structures of a like kind are being multiplied in this country. Material of no ordinary quality is sought after in such instances.

The state of the trade cannot be spoken of so favourably as the manner in which we had cause for mentioning it last week. Most of the firms that are largely engaged in the American trade would now, we doubt not, be accessible at a shade lower rates; whilst iron of a quality equal to some sent from the larger number of those houses may be obtained at 20*s*. less than they are quoting. Still there is no good ground for declaring a reduction for the next quarter upon the rates which have ruled in the last, and for some time previously. Therefore, the preliminary meeting, which will be held next Wednesday at Wolverhampton, will pass off with a recommendation to the quarterly meetings, that will commence a fortnight afterwards, to confirm previous rates.

The trade in pigs remains very quiet; and very little was done in the way of sales either at Wolverhampton on Wednesday, or at Birmingham yesterday (Thursday).

#### LONDON FOOD.

It is feared that our cattle may be attacked by a murrain or distemper, very fatal, which may be called by some other name. In fact, it is thought that this complaint has not only reached Ireland, but also our own shores, for serious cases are reported to have happened in Worcestershire.

It is scarcely our province to inquire how these diseases, which are similar in their effects upon certain kinds of brute beasts to plague and cholera in human beings, are brought from place to place; but it is certain that, although the cholera is evidently not infectious, it attacks particular districts under certain circumstances, when people are stricken down as if by the sword. We have conquered various plagues which have sorely beset humanity in this metropolis city; and it is shown day by day that we are by sanitary arrangements driving away those local agencies which attract malaria and kill multitudes. The same good management which saves the life of man will save that of beasts.

Let us therefore most impressively direct the attention of those who have the care of cattle to those sure sanitary laws which will save them.

Cows and horses, and singing-birds, will no more be free from peculiar fevers and pestilences, in ill-conditioned places, than their owners.

If this murrain of cattle should unfortunately spread in England, then it will demand the consideration of those who have the management of these affairs, if it would not be better to remove the animals, under the advice of those who understand the value of proper drainage and the working of these plague diseases, to neighbourhoods which may be more salubrious.

Let us recommend to those who have cows kept in London, to see that the sheds in which they dwell are well ventilated and drained, and kept thoroughly cleansed, both for the sake of the cows and the inhabitants; and it also will be most important that the officers of health should most carefully inspect the food of the poor, for we cannot believe, although some statements have been made to the contrary, that animals which die from disease can be proper for the food of either children or adults: the cooking cannot carry off the effects of putrefaction.

It has been thought that the improved arrange-

ments at the new cattle-market would have been sufficient to have prevented the admission of any unwholesome oxen, pigs, sheep, &c. into that place for sale. We fear, however, that discretion has not been shown on this point, for only on Friday last we saw some cows, the flag end of the market, being driven up to town, which attracted every one's attention. The backs were arched up: in parts the bone was seen through the skin: they were, in fact, in the last stage of disease; and yet, notwithstanding the sad condition of the poor brutes, the udders were of extraordinary size. It is sickening to think that these cows had been recently supplying milk, and were probably going then to be used for the food of the poor. The driver, when asked where he was taking the animals, said "To the Zoological Gardens." The authorities of Smithfield market ought not to admit into that place animals which are unfit for human food: some special supervision should be established.

#### PROPOSED BLACKBURN INFIRMARY.

WITH reference to the plans for this structure about to be chosen in competition, Mr. Lang, a surgeon of the town, has addressed a letter to the *Preston Guardian*, rightly urging that the principles acted on in the construction of the large hospitals in France, should have full consideration before the plan for Blackburn be selected,—“that each sick ward should occupy the entire width of the building, that there may be no blank walls, but the windows opposite each other along the entire sides: these windows should extend to the very top of the room, be exactly far enough apart to admit two beds, with an intervening space of 3 or 4 feet between them. No bed should be under or opposite a window, nor within 8 feet of the wall, nor nearer than 12 feet from the beds of the opposite side of the ward. A ward sufficiently large for thirty beds is infinitely preferable to five wards of six beds each. The best mode of heating an hospital is by means of large fires or stoves in the rooms, and no mode of ventilation will be successful which disregards the window arrangement described. A finely-perforated metallic plate may be adapted to the top of each window, as it will be required in windy weather. Each ward should be completely isolated, the entrance being from the open air.” The writer says correctly, that some of the most recently-erected hospitals in this country have been badly planned, and are consequently the cause of protracted disease and death to many of their afflicted inhabitants. The editor of the *Guardian*, in a note on Mr. Lang's letter, makes kind and flattering reference to recent articles in the *Builder*, on the subject of hospital construction, wherein we set forth and advocated the arrangement adopted by Mr. Lang.

#### NEWHALL-HOUSE, MILWAUKEE.

This large and recently erected hotel was opened on the 25th ult. and a grand festival in honour of the occasion given at the Albany-hall; also a new structure immediately opposite. The committee alone consisted of 500 persons, and the citizens took five thousand tickets, of five dollars each, thereby rendering the celebration the most important of the kind that has taken place in the north-west. We understand the entire cost of the building is about 160,000 dollars, and 70,000 dollars for fitting up and furnishing, a large portion of which came from the East. The building has a frontage, to Main-street, of 180 feet. It is six stories in height, exclusive of basement, and is faced with Milwaukee brick, which is stated to be of excellent quality. The grand entrance is in Main-street, and leads to a spacious hall whence branch the corridors off which the principal apartments are provided. Suites of rooms, comprehending all the usual arrangements and accommodation in such establishments, are provided. Situated at the rear of the building is a magnificent and very large dining-room, frescoed by an eminent artist, Otto Fritz, who is also decorating the Hyatt House at Janesville. Immediately above the ladies' private staircase is an enclosed piazza, usually appropriated for smoking purposes. The saloon, or bar, occupies a prominent position, and is said to be "replete with all the comforts for the inward [outward] man." A splendidly appointed billiard-room is also added.

The fourth, fifth, and sixth stories are appropriated to bed, dressing, and bath rooms, &c. the supply of hot and cold water being very complete, by means of water-works, with engine, in the basement story. Each room has its fireplace, and ventilation has been carefully provided for. Large tanks, with a perpetual supply of water, are constructed on the roofs, and so arranged as to flood the whole building, or any portion thereof, in case of accident by fire. Cooking provision is made for 600 persons, and the kitchens, with laundries, drying and ironing rooms, with accommodation for servants, are in the basement. All the in-



terial appliances, furniture, &c. are said to be of a most costly character. Several local merchants and others have rented suites of apartments. This gigantic speculation is the work of one individual, Mr. Newhall, who has borne the entire expense himself: it is now leased to Messrs. Rean and Rice, two enterprising and well-known hotel proprietors.

#### RECENT PATENTS.\*

**WILLIAM RICHARDSON**, Ranelagh-grove, Pimlico. — *Improvements in the use of Iron, or any other Metal, by itself or in combination with other materials, for structural purposes.* Dated 13th February, 1857. — The essential principle of this invention is the use and application of iron, or any other metal, in segments bolted together in combination with bricks, tiles, or any kind of pottery, or concrete, or wood, as a lining to the iron, so that the parts and the materials being connected with each other, and securely fastened together, and the joints made good, the whole combination shall form an air and water-tight structure of great strength, the iron being the outside, and the other materials referred to the inside of such structure.

**D. A. LAMB**, Berwick-upon-Tweed. — *Water-closets.* Dated 13th February, 1857. — This invention of improvements in water-closets consists of an arrangement by which any given quantity of water can be supplied to the basin, the flowing being regulated by pressure.

**MARMADUKE WILLIAM HALLETT**, St. George's-road, Eccleston-square. — *Securing Windows, &c.* Dated 13th February, 1857. — This invention consists in an improved arrangement of apparatus for securing windows and other openings in buildings. For this purpose vertical bars are employed, and these bars are ranged at a short distance apart across the window or opening to be secured as when ordinary fixed bars are employed, but in place of being permanently fixed at a distance apart, they are connected or jointed together, so that they can be folded or brought close to each other, and packed out of sight in the spaces at the sides of the window or other opening where shutters are usually fitted.

**WILLIAM COOK**, Cornhill, London. — *Ventilating.* Dated 14th February, 1857. — This invention consists, first, in an improved method of constructing ventilators of wire gauze or other perforated material, so that they may be suitable to be fitted to the sash of a window or door, so as to occupy the place of one or more squares of glass or other material.

**HENRY YOUNG DARRACOTT SCOTT**, Brompton Barracks, near Chatham, Kent. — *Cement.* Dated 19th February, 1857. — This invention of an improved manufacture of cement relates to certain improvements in a process previously patented by the present patentee, and bearing date April 17th, 1856, wherein burned lime is subjected to the action of sulphurous acid, and thus a plaster stucco or mortar which will quickly set and attain a considerable degree of hardness is produced, the action being apparently due to the presence of a small per-centage of sulphate consequent upon this treatment. The object of the present invention is to impart to quick lime the properties of a cement by means of an inexpensive and convenient process, which is carried out in the following manner: — Lime prepared by any of the ordinary methods is by mechanical means reduced to a powder, and is intimately mixed with from 5 to 10 per cent. of its weight of gypsum, sulphate of lime (commonly known as plaster of Paris), or sulphate of iron, or sulphate of magnesia may be added thereto. In order to produce a sufficiently pure state of division and intimate admixture of the several ingredients, he finds it convenient first to mix the lime and either of the sulphates above-mentioned by hand, and then to grind them in a mill, and finally pass them through a bolting sieve. The lime should be perfectly fresh when used, but should have been drawn from the kiln a day or two, according to the state of the atmosphere, before grinding. The resulting mixture is packed in bags or casks for use, and is treated as other calcareous cements.

#### Books Received.

*Soyer's Culinary Campaign.* London: Routledge and Co. 1857.

**M. SOYER**, in all his works, strives to advance a cause we have much at heart, — the improvement of the condition of the masses, — and has, therefore, our earnest commendation and support. The waste of food on the part of the poorer members of the community, through want of knowledge, is enormous. Meat which, properly prepared, would have been both nutritious and agreeable, is made indigestible and repulsive, and much is thrown away which might

be made useful. In his "Culinary Campaign," just now published by Routledge, which purports to be Historical Reminiscences of the late War, with the plain art of cookery, for military institutions, the army, navy, and the public, the end aimed at is the same, though the bulk of the book consists of an amusing and interesting relation of what befell when the energetic, 'cute, and clever *chef* went to the Crimea. It is to be hoped that much of what he taught will be adopted in our army and navy generally. The Duke of Newcastle wrote to him at Scutari, — "Your philanthropic labours in this country deserve the thanks of every Englishman; and, for one, I am grateful for what I have seen of your good work at Scutari." This is high praise, and we believe he deserves it.

#### VARIORUM.

**MR. THOMAS HOPELEY**, the author of a lecture on Respiration, some time since noticed in our columns, has had published, by Churchill, of New Burlington-street, another of the same series, titled "A Lecture on Bodily Exercise, being the second of a series of plain and simple lectures on the Education of Man, written with a view to delivery in London." Mr. Hopeley's object is to aid in the formation of a correct popular opinion on the importance of observing and obeying the laws of our constitution in all that affects the health, so as to insure, as far as possible, the possession of a sound mind in a sound body. His style of treating his important subject is vigorous and effective, and is likely to strike forcibly on the minds of his readers or hearers, and to induce them to think for themselves on a subject with which all ought to be well acquainted. It is strange how ignorant the public are of the wonderful construction, mechanism, and laws of their own bodily and mental constitution. The public curiosity is ever turned outward and away from such a subject, and anything, however trifling as a source of scientific or general interest, will attract attention rather than the grand "Nose teipsum," which truly is beyond all else in importance as a subject of either scientific or popular research. — The publication, by Waugh, of Sydney, of the first monthly number of "The Sydney Magazine of Science and Art," in a form similar to that of our own Society of Arts Journal, affords a good indication of scientific progress in an important colony. Amongst a variety of other subjects it contains reports of papers and proceedings of the Philosophical Society of New South Wales, of which Sir William Denison, the Governor-general of the colony, is the president, and of the Australian Horticultural and Agricultural Society. *The Builder* is (we may almost say of course) a contributor to its miscellaneous columns.

#### Miscellaneous.

**CATHEDRAL AT DADIZEELE.** — On the 8th inst. the Bishop of Bruges laid the first stone of a new cathedral at Dadizeele, in the diocese of Bruges. The church is to be constructed of brick, with French stone dressings. Upwards of 11,000 persons witnessed the ceremony, amongst whom were the Bishop of Ghent, the Princess of Luxembourg and Montmorency and daughters, the Counts of Beaufort Litrup, the Baron de Nonilles and Bethune, the governor of Bruges, &c. &c. Messrs. Pugin and Murray, of London, are the architects.

**OPENING OF OAKLANDS CHAPEL, SHEPHERD'S-BUSH.** — This chapel has been opened for Divine service. It will accommodate upwards of 500. The entire cost, exclusive of the ground, granted by Mr. Peter Broad, and valued at 500*l.* and of 300*l.* for building materials, also gratuitously contributed, has been about 2,800*l.* of which 1,200*l.* remain to be collected. The building is of the Corinthian order, from the design of Mr. G. G. Searle, architect, the details of which have been carried out by Mr. Ennor, the builder.

**THE WELLINGTON MONUMENT MODELS.** — Allow me to ask whether the valuable specimens of monumental design recently exhibited in Westminster Hall are to remain in the studio, neglected and forgotten, and entirely lost to the admirers of British and foreign art? Surely this should not be. I would suggest (before it be too late) that the Crystal Palace Company endeavour to prevail upon the artists to allow their models to be exhibited in a department there, entirely devoted to that purpose. Every one must be aware that the artists have not only expended much time and mental labour in the preparation of their several designs, but also incurred very heavy expenses. I would add, that a small additional sum might be charged for viewing them, and the proceeds applied to a fund for their ultimate purchase. The collection, be it remembered, is the result of the most strenuous exertions of men of all countries, and should such be permitted to vanish from the sight without a single voice being raised to rescue it from oblivion?

HORACE PERKINS.

**WEST-END TERMINUS FOR RAILWAYS.** — With reference to the suggested adoption of the site of the Grosvenor canal and basin for a west-end terminus, Lieut.-colonel Pottinger asks us to say that its availability for the purpose was first suggested by him, and brought to the notice of the Crystal Palace Company. We comply with the request, although it is by no means evident in the documents sent to us that this really was the case, however assured of it the writer himself may feel.

**GLASGOW HARBOUR.** — One of the heaviest and most costly works ever undertaken by the Clyde Trust is now approaching completion, — the new addition to the South Quay wall. The length of the new wall is nearly one-third of a mile, and when it is completed there will be a stretch of quay-wall westward from Glasgow-bridge of 2,028 yards, or fully a mile and one-eighth of quays for vessels on the south side of the harbour. The section of the wall is curvilinear in front and vertical at back, is in thickness seven feet at top and sixteen feet at bottom, and contains in all about 650,000 cubic feet of masonry and concrete, or about 47,000 tons weight. Some of the stones employed in the wall weigh fully three tons, and the only dressing they receive is from the "pick." It is intended to give a depth of 20 feet at low water, so that the largest vessels when laden may lie afloat at all times of the tide, as in the docks of London and Liverpool; and in this respect it forms the most important addition that has yet been made to the harbour. Its cost is about 50,000*l.* — *Scottish Press.*

**SHIPWRIGHTS' AND CARPENTERS' STRIKE AT WHITEHAVEN.** — About ninety shipwrights and thirty joiners have been idle for a period of seventeen weeks, when, during the whole of that time, the former might have been receiving 1*l.* 4*s.* and the latter 1*l.* 1*s.* per week. At Maryport the hands were only off work a day, which sufficed to show them the folly of a strike. In all, 120 men have been voluntarily off work seventeen weeks; and the loss to the community of Whitehaven will in that time amount to nearly 2,500*l.* A considerable number of hands are out of employment in Liverpool and other places, and the resources of the union are growing more and more inadequate to the demands upon its funds. The strike must, therefore, shortly terminate. — *Cumberland Packet.*

**ARCHAEOLOGICAL ASSOCIATION FOR WARWICK AND WORCESTER.** — In accordance with a resolution passed at the recent joint meeting of the Worcester Diocesan and Birmingham Architectural societies, a meeting has been held at Birmingham for the purpose of taking the necessary preliminary steps for the establishment of an Archaeological Association for the counties of Warwick and Worcester. Mr. C. H. Brasbridge presided. Resolutions were passed to the effect that the new society be entitled the "Midland Counties Archaeological Association;" and that the subscription be 10*s.* 6*d.* per annum, members of other archaeological, architectural, or antiquarian associations being admitted on payment of 5*s.* annually.

**BURNS'S MONUMENT TO BE HIDDEN.** — The trustees of Burns's Monument at Ayr, lately requested the promoters of the new church at Alloway to suspend the contractors' labours for a little, in order that the public might have an opportunity of subscribing the sum necessary to defray the expense of its removal to a less obnoxious site; but the result, it appears, has only been that the building operations are now ordered to proceed with increased vigour.

**THE CABINETMAKERS' STRIKE AT LIVERPOOL.** — Five journeymen cabinetmakers, John Griffiths, Bos Warber, James Rowe, James Harris, and William M'Millen, have been committed for trial at Liverpool, under a charge of conspiracy. They were brought before the police magistrate charged simply with intimidation, having attempted to force one Walter J. Stevens, employed by Mr. Thomas Bradley and others, to refrain from working for them as a journeyman cabinetmaker. The case arises out of the strike which has continued since 9th May last, and has greatly obstructed the course of trade at Liverpool ever since, although only a small minority of the men had conspired against their fellows. Stevens had obtained from Plymouth. In order to carry out their illegal procedure, they had paid considerable sums advanced by Mr. Bradley to his men, in order to secure their co-operation, or rather their co-idleness, and had threatened others who had resisted their pretension to interfere with them. In the course of his examination, Mr. Bradley, for the purpose of showing that this strike was tyranny by the minority of the workmen, as bearing upon the majority of their fellows, produced a list of journeymen cabinetmakers in the country. It comprised 50,000 men, of whom only 1,000 were members of the association. In Manchester, he said, there were 600 cabinetmakers, seventy of whom only were members of the association.

\* Selected from the lists published in the *Engineer's Journal*.



# The Builder.

VOL. XV.—No. 765.



THE condition of various parts of London, in a sanitary and social point of view, the improvements required, and the results of efforts now making with a view to amelioration, demand continuous attention. So many-sided is London, so numerous are the points of inquiry it presents, so enormous and weighty the interests involved, that it needs many endeavours before the whole can be grasped, —the co-operation of many minds before much can be effected. It is no easy task to get a clear idea, even, of this mighty maze,—

"Of London, of its streets, its bridges, crowds;  
St. Paul's, the broad moon sailing o'er the dome;  
The rich-carved abbey, with its thousand frets  
And pinnacles, religious with the dead;  
Of the brave spirits who go up to woe  
That terrible City whose neglect is death,  
Whose smile is fame, the prosperous one who sits  
Sole in the summer sun; the crowd who die  
Unmentioned, as a wave which forms and breaks  
On undiscovered shores."<sup>1</sup>

Our business has long been to make known to one-half of its denizens how the other half live, and to this second half what the first half are doing for them. As we happen to be in the neighbourhood of King's-cross and Gray's-inn-lane, let us retread some of our former paths, and note what changes have been made. Near the bottom of Maiden-lane, or, as it is now called, York-road, a hospital has been commenced for the relief of the suffering poor of Camden-town, Somers-town, Kentish-town, New Smithfield, Highgate, and Islington. This still infant establishment was founded by, and carried on for six months at the sole expense of Mr. Statham, one of the medical officers; but as the number of out-patients had become on the average about 300 daily, and as many of these were pressing cases of disease and accident, it was resolved to enlarge the premises, and make them suitable for hospital purposes, for which more funds became necessary. These alterations have been carried out at a cost of about 600*l.* and a number of patients have been admitted. Dr. James Copland has become consulting physician, and Mr. Skey, of St. Bartholomew's, consulting surgeon to the hospital. During the first six months of the establishment of this institution nearly 12,000 cases were attended to.

The number of attendances and patients amounted altogether to 28,055. Of these cases, 1 in 192 are known to have died. The above figures show that assistance is needed in this neighbourhood, although at a first glance one would think that the Free Hospital in Gray's-inn-lane would have been sufficient. However, when we consider the immense populations of Camden-town, Agar-town, and Islington, it is evident that an establishment of this description cannot fail to be useful. It may be a matter of consideration whether it might not be advisable to remove further to the north. Patients are admitted without letters of recommendation, and we must mention that this, "The Great Northern Hospital," is now entirely depending on voluntary contributions for its support.

Feeling as we do the great need there is of medical assistance to a large class of the more moderately paid workmen and others, particularly those who have families of children, it has occurred to us that it would be wise if those

who are engaged in the formation of institutions such as these were to provide a department where persons of moderate means might, by monthly or quarterly payments, obtain efficient medical advice.

Additions have been made recently to the Royal Free Hospital in Gray's-inn-lane. In the winter of 1827, a wretched female, under eighteen years of age, was seen lying on the steps of St. Andrew's Churchyard, Holborn-hill, after midnight, actually perishing through disease and famine. She was a total stranger in London, without a friend, and died two days afterwards, unrecognised by any human being. This distressing event being witnessed by Mr. William Marsden, the surgeon, who had been repeatedly struck with the difficulty and danger arising to the sick poor, from the system of requiring letters of recommendation before admission to the public hospitals, and of having only appointed days of admission; he at once determined, with the co-operation of several friends, to set about founding a Medical Charity, to which destitution and disease should be sufficient introduction. On this principle the first Free Hospital was established in Grenville-street, Hatton-garden. By the influence of the late Sir Robert Peel the patronage of King George IV. was obtained, and the hospital went on extending in usefulness. In 1832, when the cholera first appeared in London, the governors at once threw open the doors of the hospital to all who were afflicted by the pestilence. More than 700 cholera patients were on that occasion admitted. In the years 1849 and 1851, when the epidemic again visited the metropolis, more than 3,000 in the former year, and 6,000 in the latter, were upon the same principle relieved by this hospital. The metropolis owes it a debt.

In 1842, the premises in Gray's-inn-lane, which had been originally erected as a barracks for the Light Horse Volunteers, being then vacant, and appearing suitable for the purposes of the charity, three of the governors, trusting to the liberality of the public, took upon themselves the responsibility of purchasing them. Since removal here, the number of patients has continued year after year to increase. From the date of its foundation in 1828, up to the 31st December, 1856, 565,780 (upwards of half a million) patients have obtained relief. During the last year, from January to December, the total number of cases relieved was 44,287.

We were glad to learn that the poor do not seem to be unmindful of the benefits received here, as is shown by the quantity of copper coin (part in farthings) which finds its way into the little boxes placed outside in the street to receive subscriptions. The pages of the book in which receipts are recorded show such entries as the following:—"Inclosing 2s. 6d. in thankfulness for first earnings from a little boy." "Inclosing 2*l.* from J. S. and half a sovereign, as a titling to God and his sick brethren." "A thanksgiving to God, from Matilda, 10s." "A thanksgiving in time of health for assistance in sickness, 1*l.*" "1*l.* 1s. a free gift for legs and arms."

A long list of donations, presented in a similar spirit, might be mentioned, had we space. We must not, however, omit to state, that during last year a poor mechanic left a brown paper parcel at the gate of the hospital, which was found to contain his watch, still ticking. In November, 1844, a Bank of England note, of the value of 100*l.* was found in the subscription-box: on the enclosure was written—"Winter is coming. *Bis dat qui cito dat.*"

The wards in the new wing erected in memory of the late Duke of Sussex are now occupied. There is plenty of room for the extension of the hospital; and even at present a much larger number of patients might be admitted if the funds were increased. Of the construction of

the hospital we will not now speak. We must treat of that on some other opportunity.

Hospitals and the dwellings of the poor come so much into view together, that we prolong our journey for the purpose of inquiring how matters are going forward in Tyndall's-buildings, Gray's-inn-lane, a spot to which we have before alluded. Much trouble has been experienced in getting the court reclaimed and put into proper order. The Society for the Improvement of the Dwellings of the Industrious Classes, at the commencement of their operations here, were anxious to prevent the removal of the numerous tenants. Matters, however, did not work well. The society were unable to get possession of the whole of the houses in the court, and the persons living there offered opposition: in fact, a spirit of dissatisfaction seemed to have been created, and eventually it was deemed expedient to clear the whole of the houses. All have now fallen into the hands of the society. It is painful to find that a body of persons upon whom a favour is being bestowed could be so thoughtless: it must, however, be attributed to ignorance and prejudice, which will before long vanish. In this place, when the alterations were commenced, a man kept his donkey and dogs in the dwelling, and it was necessary to use both persuasion and force before the removal of the animals could be effected.

Tyndall's-buildings (the former condition of which we illustrated some time ago) are now destitute of inhabitants, but are still lively with numerous workmen, who have nearly completed the repairs required, and have improved some of the arrangements. The place is much brighter than it was. It is true there are here no lengthened ranges of columns or other architectural beauties, but the whole place is now in repair, the drainage is improved, and each room is fitted with a view to the health and cleanliness of its future inhabitants. From top to bottom the place has been put into livery of snowy whiteness, and looks quite dazzling against the blue sky, which was as bright when we were last there as can be reasonably expected in the present condition of London. One great improvement must not be overlooked. If our readers will refer back to the engraving we gave of the former state of the bottom of the court, it will be found that it presented a scene of ruin. The house in the centre has since been cleared away, and an opening made through to the space beyond, and this has a capital effect: many of our London courts might be treated in the same way. It is intended, we are told, to build a church and schools on the vacant ground which surrounds the court.

Charlotte's-buildings, close by, will afford a contrast. When we examined it a few days ago—the weather was warmer than it is now,—it was in an abominable condition. The atmosphere throughout the court was unbearable: the broken pavement was reeking with rotting matter: the houses are in ruins; the inhabitants in misery. What the minds must be that are formed in such a mould, the world should by this time know.

In Fox-court, the ragged school continues to be kept usefully at work, and we are glad to learn that since our last report the funds have become more prosperous: the debt has been cleared off, and, what is unfortunately a surprising event in the history of these schools, there is a small balance in the hands of the treasurer. During the year, the Benchers of Gray's-inn have repeated their former grant of twenty guineas; the Skinners' Company and the Society of Staple-inn have each given 5*l.* and others have kindly helped with various sums. At the commencement of 1857, the managers of the school sent to many of their neighbours a circular, appealing for an increase of annual subscriptions; and it is worth mentioning that one of the first replies was from the head clerk

\* Alexander Smith: "City Poems."





*Alley in Court: Tyn Hill's-buildings, Gray's-inn-lane.*

in a law stationer's office, stating that he and his fellow clerks, twelve in number, had agreed to subscribe one penny each every week, and that they had doubled the first week's subscription to start fair with the new year: this is an example which might be usefully followed. If the kind thoughtfulness shown by the twelve clerks should be imitated by the establishments in which large numbers of persons are well employed, important results would follow. It is interesting to have to relate that in the once notorious "Thieves' Kitchen," in this court, a regular religious service has been established by one of the teachers of the school. Weekly lectures on popular subjects are given in this and many of the London ragged schools, and, at appointed times, from fourteen to twenty women assemble in the school-room with needle-work, and, while so occupied, a book is read to them. The little lending library begins to be used; and the sums subscribed to the provident clothing club, chiefly in pence and farthings, steadily increases. A ladies' working meeting has been lately commenced, to assist in making clothes for the children: this meeting is held at stated times, in the evening from six to eight o'clock. Our space will not permit us just now to mention other benefits which have been caused by the establishment of this school: we have said enough, however, to show that the exertions which have been made here are spreading good principles and inducing good acts in the place of those which formerly emanated from the "Thieves' Kitchen" and its surroundings.

We have alluded thus particularly to the Fox-court Ragged School, because it was founded in one of the worst neighbourhoods and is a type of those which are now planted in so many spots that individual notice is impossible; and, believing that the Ragged Schools will be an important means of raising the position of the more destitute classes, that they are Social Bridges over Moral Swamps, we again express an earnest hope that such of our readers as

can in any way help, will hunt out the schools in their neighbourhood, and see what can be done in aid. If we are rightly informed, the Ragged School institutions, 150 in number, now include 128 Sunday Schools, attended by 16,937 scholars; 98 Day Schools, with 13,057 scholars; 117 Evening Schools, with 8,085 scholars; and 84 Industrial Schools, with 3,224 scholars. The Day Schools employ 163 paid instructors, the Week Night Schools, 126, and the Refuge and Industrial Institutions, 43; besides 2,139 voluntary teachers. The Refuges are sixteen in number, and furnish food, clothing, beds, and education, to 500 inmates, to say nothing of the large number who have been enabled to go to the colonies, with every prospect of a good future. This is certainly cheering, and should encourage their supporters to persevere. Improve the homes, and teach the children, and we shall soon lessen the numbers of the "dangerous classes," prevent much suffering and misery, and enable men and women to live out the term of their natural lives, and to play their proper part in increasing the sum of general wealth and general happiness.

#### REPORT OF THE REFEREES ON THE MAIN DRAINAGE OF LONDON.

The plan for the main drainage of London, as recommended by the Referees, has been published, together with the Appendices; and the complete Report has been sent to the Metropolitan Board of Works. The several documents now form a bulky volume, including many interesting tabular statements, subsidiary reports and evidence, and particulars of schemes submitted to the Referees, illustrated with statistical maps, plans and diagrams. An Alphabetical Index of the names of persons who have afforded information, "and whose communications are alluded to in the Appendix," reaches to more than 260 names. So that, far from there being any justification for the impatience which was shown in some quarters, as to the appearance of the Report before the end of the session of parliament, apprehension might be felt lest the Referees should

have been brought to their "conclusions," without full consideration of the subject, and the quantity of matter accumulated by them. We have already given the main positions at which they arrived;\* and it will be recollected that one of the features of their scheme was a considerable extension of the points of outfall down the river, and provision for the flow of the sewage, in this extension, in wide channels of slight fall, and in great part uncovered. Such open channels the Referees believed would be made comparatively innocuous, since according to their scheme, the sewage would be largely diluted by tidal water to be admitted at Barking and Plumstead; whilst the provision of these channels would serve the desired object of sewage utilization, inasmuch as the problem regarding it could be best solved through private enterprise, for which the channels would offer facilities. As to the inhabited area, the proposal of the Referees did not differ in principle from the previous plans of intercepting sewerage, excepting that it provided for a larger area of drainage, and much greater increase in the population. The questions of agricultural value of sewage and utilization of that of London, as well as of the influence of sewage on the river at high and low water, at various points in its course, were referred to Dr. Hofmann and Mr. Witt, and form the subject of an elaborate report which is printed as the first Appendix. The second Appendix gives results of a microscopical examination by Mr. R. Etheridge, of Thames mud and Thames water. No use appears to have been made of any investigations of the Sewage Commission. The Report to the Board of Health, by Mr. H. Austin,† is slightly noticed. Many schemes involving sewage utilization, and other suggested improvements in drainage, and put forth specially for London, however, were inquired into, and, it would appear, rejected.

Appendix III. gives various reports and tables of experiments undertaken, and information collected, with a view to determining the quantity of sewage and rainfall for which provision should be made. The average discharge of the principal sewers during various durations of time was ascertained; and the discharge per acre and per head of population was estimated and tabulated. The rainfall, and percolation, and the water-supply were inquired into. One tabular statement gives the population present and prospective, of the metropolitan and subsidiary districts, with the area in acres; and another shows the sewage, rainfall, and population provided for, in the several high and low level sewers. These subjects are also illustrated by diagrams, and by maps, one showing the course of the main sewers, and the relative mortality from cholera in the several districts, and one marking the extent of ground covered by the metropolis in the years 1745, 1818, 1834, and 1857, respectively.

Experiments were undertaken by Mr. Blackwell on the effect of running water in moving substances such as might get into the sewers; and the results, with drawings of the objects, are given in Appendix IV. Appendix V. affords information as to the river and tides; and is illustrated with plans, showing the experiments with floats at Burnham, on the Essex coast, (applicable to the question of outfall in the German Ocean), and those made on the river in the present year; and has a diagram explanatory of Mr. Forster's experiments in 1851. To a later Appendix (IX.) is a plan illustrating Mr. Homfray's experiments with floats,—for the opponents of the Board of Works' scheme, also in this year. From these data, the Referees conclude that a float, put into the centre of the stream at high water, will move down with the ebbing tide, ascend again, and oscillate so that at the end of a fortnight, it will be found to have reached a point in the river about five miles below that at which it was put in. But it was also found that the floats had a frequent tendency to set in shore, and markedly so about the point selected for the outfall by the Metropolitan Board. The shoals there caused eddies and slack water, so that deposits of mud, similar to those at present to be observed in the Thames, and from which the chief nuisance arises, would be peculiarly liable to be formed. Some spot in the river where there would be the action of a strong current, would therefore be preferable, it is thought. Moreover,—whilst the floats were followed up and down, in the strength of the stream,—much of the sewage flowing in at every ebb-tide, would hang about in slack water, and be liable to be carried with the flood to a point much above that assigned as the probable limit by experiments made in the fair-way of the channel. This tendency indeed would appear to exist to a greater degree even than is recognized in the Report. The same Appendix (V.) is illustrated by sections of the Thames at the points proposed for the outfalls by the Referees, and diagrams showing the rise and fall of the tide at various places. Appendix VI. gives much information furnished by

\* See page 447, ante, "The Main Drainage of London."

† See page 447, ante, "The Sewage Manure Question."



Mr. Bazalgette; a map showing his scheme of drainage; sections of sewers with the flow in dry weather compared with that during storms; and elevations of the exits of sewers under the late Commissioners for Westminster and part of Middlesex. Appendix VII. gives the information as to local drainage obtained from the district surveyors and others, and Appendix VIII. reports by Mr. John Reunie, Mr. Gwilt, and Mr. L'Anson, supplying knowledge of its former condition. Appendix IX. affords information on special points in Mr. Bazalgette's plan, and observations on the expediency of uniting the drainage of the marsh lands near the Thames with that of the metropolis. It also includes statements of the opponents to the scheme of outfall as proposed by the Metropolitan Board. To these parties, the report of Mr. Holford was addressed. The Appendix also gives evidence from Mr. Rawlinson, and the commission for the Havering and Dagenham level. Objections by Sir Charles Barry to the construction of Mr. Bazalgette's proposed low-level sewer, near the Houses of Parliament, are also stated, and information is given as to similar objections by Mr. Cockerell with reference to St. Paul's Cathedral, in a similar case in 1831.

Schemes for the main drainage of the metropolis, submitted to the Referees pursuant to their advertisement, are given in Appendix X. with particulars of some clever contrivances for decolorizing and filtering sewage, and for lifting it where required. The main features of the schemes have been carefully tabulated; and the particulars and evidence are illustrated with maps and diagrams. A form of apparatus for lifting, on the principle of the Archimedian screw, suggested by Mr. Hubbard, deserves particular attention. Ordinary pumps would hardly be found to answer. Mr. Slate proposes a form of Persian wheel with the same object. Messrs. McClean and Sileman's plan for carrying a sewer to the German Ocean, is specially referred to in the report, and objected to on the ground that the sewage would deposit on the coast at the place suggested, rather than be carried out to sea; and amongst other objections, it is shown that compensation would be demanded for injury to the oyster fishery. In the similarly extensive plan of outfall for the south side of the Thames by Messrs. Richardson and Clark, the principal feature is the construction of a great iron tube for the sewer, above-ground, and supported on iron columns. The idea was put forth some time ago, through our columns. Evidence as to the use of the syphon in the drainage of Hamburg, is given by Mr. Lindley in Appendix XI. Appendix XII. gives evidence bearing upon the question of utilization; and Appendix XIII. with other information, gives sections and plans showing in a very striking manner, the difficulties which have to be met, arising from the extraordinary number of pipes and mains which there are under the street surface. The particular scheme itself of the Referees treats the drainage area, metropolitan, and naturally belonging by reason of levels to the metropolitan district, into two general divisions:—1. That "in metropolitan districts"; and 2. That "beyond the metropolitan districts." The "metropolitan districts," or over and above the "prospective area" of Mr. Bazalgette, the plan shows extending along the valley of the Lea to Hoddeston, beyond Waltham Abbey, and far south of Croydon, and including Barking and Wilsdon on the north side of the Thames, and Wimbledon and Chislehurst on the south; whilst the "prospective area" above referred to, provided for a comparatively small area comprised within the localities of Twyford, Hanwell, Brentford, Richmond, Barnes, and Chiswick. The "metropolitan districts" on both sides of the Thames, are divided into areas to be drained by gravitation, and areas from which drainage is to be raised by artificial means. The area of the former character on the north side of the Thames—33 square miles—includes Paddington, Hampstead, Holloway, Stamford-hill, Homerton and Bow, stopping short of Stepney and Poplar, in one part of the circuit, and just takes in St. Paul's Cathedral and Hyde-park, in the southern boundary. On the south side of the Thames, the area of the same character—48 square miles—following the northern or lower margin, takes in Roehampton, Putney, Wandsworth, Clapham, Brixton, Lewisham, and Greenwich (but not Deptford), Charlton and Plumstead (without Woolwich). Nearly coincident with the lower marginal lines as described, on each side the river, intercepting sewers are proposed to be formed, one taking the sewage to the commencement of the main outfall sewer at a spot on the river Lea towards Plaistow, and the other to a similar spot at the Ravensbourne, near Deptford. At both these places sewage would have to be raised. The areas remaining next the river,—that is, on the north, sixteen square miles, including Shepherd's-bush, Hammersmith, Kensington, Fulham, Chelsea, the south side of the Strand, the embankment of the Fleet, the neighbourhood of the docks and western margin of

the Lea; and on the south—twenty-one square miles—including part of Putney, Battersea, Lambeth, Camberwell, Deptford, and the lower part of Woolwich and Plumstead,—require that the drainage should be raised by artificial means. A main point of confluence for the sewage from Chiswick and Hammersmith, Whitehall and other localities on the north of the river, and from Lambeth and other places on the south, would be established at Battersea (part of the sewage being thus taken across the river), whence it would be pumped into the intercepting sewer. The sewage from Brompton and Deptford would pass to the pumping station at the Ravensbourne; whilst that from the docks, the Isle of Dogs, and Poplar, would be taken to the similar spot near Bow and Plaistow. Sections of the line of the two main outfall channels, from the lifting stations to the points of outfall below Mucking Light-house and Stamford-le-Hope, in Sea Reach, on the north, and at Higham-creek, below Gravesend, on the south, are supplied; and it is shown that the channels would have a fall varying from 1 foot to 6 inches a mile, for the main portion of the length. A total length of six miles on each side of the river, is to be provided for in the estimates, for covered portions in the neighbourhood of buildings and public roads.

It will have been understood that the harmlessness as regards health, of the open channels, and the proper flow of their contents, is made dependent upon the ample supply of water admitted from the river. The idea necessarily occurs,—what would be the effect of withdrawing from the river the enormous volume of water which might be needed? This point the Referees dismiss with the sentence—"We have considered the probable effect of these works upon the supply of the river, and we are of opinion that it will be inappreciable." But this is not the only point that seems to require further consideration. The fall of 6 inches in a mile for ditches—as pointed out by Mr. F. Doulton,\* less by very much than that of the river where shoals have been constantly forming,—seems to need very careful consideration ere the expenditure of the 5,437,265*l.* (or 3,144,300*l.* for the outfalls alone), is sanctioned. The scheme, as we have shown, leaves the questions of utilization, separation of rain-fall from sewage, and others, as they were; or rather, in some respects, it opposes itself to propositions of the kind alluded to. Whether any further assistance in the settlement of such questions may be got from the Appendices, we may have another opportunity for ascertaining.

#### RAMSGATE.

RAMSGATE has had a fair share of visitors this season, and will doubtless long continue a favourite resort,—with its grand sea views, fine pier, good accommodation, and pleasant localities hard by for excursions. Those who are most immediately interested in the well-being of the town should, nevertheless, lose no opportunity to increase the facilities for visiting the place, and neglect no means of improving it in a sanitary and artistic point of view. The roundabout railway to it from London is a dreadful nuisance, and the company appear to take little pains to smooth the journey or attract passengers. At certain times the fares are moderate, but let the luckless sight with tender wife and daughter be forced to hasten or delay his coming or going, and let the cost be more than doubled. The desirability of keeping time, too, on the line, seems scarcely to be considered, and considerable irregularity is practised.

The faintest whisper not long ago that draughts prevailed in the town sent many persons home. This, of itself, should teach the governing body the necessity for the greatest care, and the wisdom of adopting all practicable means for ensuring as far as practicable the healthfulness of the place. Wandering through parts of it late at night recently, and on the beach, very offensive odours were perceptible, and we were led to suppose that the drainage was scarcely so well arranged for as it should be. According to the town surveyor, Mr. Hinds, there is a main sewer to the principal streets of Ramsgate emptying itself at low-water mark, and having two flushing-tanks, one at the top of the High-street and a second at the top of King-street, with a flushing-sluice from the royal harbour. The other houses not on the line of sewer have cesspools, it appears, in the chalk formation. There is a sanitary committee, and an inspector of nuisances, exercising a supervision over the whole town, with a board of commissioners acting under a Local Act.

Why, amongst other noticable detriments, do those concerned permit the dredging-engine in the harbour to belch forth clouds of dense smoke? They should set an example to other steamers, even if they cannot control them.

\* See p. 466, ante.

The penny-wise-and-pound-foolish system is exemplified in the staircase of a hundred steps," in lieu of the "Jacob's Ladder" of old times, leading from the cliff to the sands: the stone used was too soft, and the tread is at all days so worn away by the young ladies of Royton and elsewhere that they will soon be unsafe, if they are not so now. These Ramsgate sands, by the way, at least the parts where the bathing takes place, are certainly on a par in their appropriation, the sordid, crowded, and filthy, particular hours of the day, in bathing crowds of filth, a band of Nigger harmonists, peripatetic merchants of inexpensive sweetmeats, and a guitar-playing friar, the whole collected and—so said by the aquatic sports and frolics of mer-maidens clad in pink or blue calico!—Firth's picture will hand it down to a woeful ring, if not an admiring posterity.

There appear to be few works going on in the town just now. In the yard at St. Augustine's, built, as our readers may remember, by the late Mr. Wilby Pugin, the eugenic inheritor of his name is erecting a chantry chapel for the family of the late Mr. Digby. It is of the Decorated period in style, and displays some Devonshire marble in the shape of small columns.

St. Peter's, on one side, with its early Norman nave-arches and other handwriting of various past periods; and Minister on the other side, perhaps the first church built for the English Christians, still showing Saxon work, and with its Norman transepts altered into Early English, afford points for interesting investigation to Ramsgate visitors.

The newly-established Kent Archaeological Society have an abundant harvest waiting their hands, and although we object to this infinite multiplication of archaeological societies, and consequent dissipation of strength, we cannot but be glad that the antiquaries of this county will receive fresh attention and further elucidation. The Isle of Thanet itself is a rich mine for the archaeological digger. On Thanet fought the Romans and the Britons; and here the Anglo-Saxons first landed, and were isolated some years before they spread over the rest of the country. To Thanet, as we said in our recent notes on Canterbury, came the first missionaries of Christianity; and here, if St. Martin's at Canterbury was an existing structure converted for their use, the first Christian church was built. The men of that period, however, have not left us such tangible memorials of their presence as the Romans have at Richborough, and Reculvers. The remains of Richborough Castle are amongst the most interesting relics in this country of that wonderful nation, the conquerors and teachers of the civilized world.

#### WORCESTER CATHEDRAL.

THE renovations long since undertaken, and still in progress, in the building of which I propose to present a brief sketch, have at length expanded into a partial reconstruction. The work has naturally been watched with anxious attention by the many to whom the condition and upholding of our sacred edifices are, happily, no larger subjects of indifference. The interest which must in all cases attach to the conservation of the monumental glories of our land has, in this particular instance, been so greatly heightened by the circumstance to which I have alluded, that the present occasion cannot be deemed an inappropriate one, to endeavour to recall to recollection the pristine beauties and peculiarities of this interesting cathedral; and the less so as, without a previous knowledge of these, we can scarcely hope to arrive at an accurate estimate of the merit of what has been effected in the way of restoration and substitution. As, in passing review the various parts of the edifice, I shall necessarily be led to speak of every architectural style which has prevailed from the eleventh to the sixteenth century, it may be necessary to premise that, in alluding to each one the distinctive designation of the nomenclature almost universally accepted, I am guided by no trustworthy documentary evidence (which, indeed, I do not possess), but solely by the intrinsic evidence of the successive phases exhibited by medieval architecture, and of the mutations through which it passed to its final disappearance.

The Lady Chapel of Worcester Cathedral I believe to be one of the most spacious in plan, as it is undoubtedly one of the most beautiful in style, of the period to which it is to be referred. Whether we regard its satisfactory proportions, the exact symmetry and correspondence of its parts, the care and conscientiousness with which every detail, moulding, and ornament is worked out, we recognise fully developed Early English, admirable in every way. The piers dividing the area into central and side aisles are erected in their very plan, represent a quadrilateral, with four large shafts at the cardinal points, and smaller ones at the intersection of the foils, all standing clear. The ribwork, long them at mid-height, and continued over the core of the pier, is a bold, prominent, filled rib, the shafts and boss circular: the



former, of the section of the best period of Early English, an overhanging round, deeply undercut; the latter, of the usual profile, remarkable for its horizontal spread. The slender outline is retained to the very floor, the tall plinth being of this form. I lay the more stress upon this circumstance because it constitutes a striking diversity between Early Pointed as exhibiting itself in France and in our own country: there its adoption appears to be quite exceptional, the old Romanesque richness and acuteness is the plan of piers and abacus clinging to it to its last period. The greater heaviness of the arrangement adopted by our own architects must, I think, be obvious to every one.\* The pier arches, described about an acute-angled triangle, are of three orders, each order of four clustered rolls (one filleted), and the depth and richness of these compound arches may be imagined from the fact that the soffit is moulded into no less than seven rolls. They have plain dripstones springing from delicately sculptured leaves. The triforium openings consist, in every compartment, of two obtuse arches, each bisected by a bearing shaft supporting lancet-headed arches. This is the internal face of the wall, while the corresponding external face is relieved by an admirable arcade of six pointed arches on attached shafts. The clerestory opens upon the central aisle by means of a graceful screen of three pointed arches (the middle one set above the lateral ones) on bearing shafts. The clerestory windows of this part are insertions of the Perpendicular period. The detached shafts of the piers of the ground story, those of the triforium, the bearing shafts of this and of the clerestory, the rings around them, with the exception of a few encircled by a narrow brass band, the abacus, the base mouldings, are all of Pithechium marble, brought to light by disencumbering them of the accumulated coats of whitewash which had been applied to mar their beauty. The removal of this filth, as well as scraping of the walls and partially revealing the beauty of the foliage of the capitals (to restore entirely the sharpness of the carving, I believe to be now hopeless), will be generally approved; though I confess the painting, oil and varnish to which the marble has been subjected, appear but a poor substitute for the polish of which it is susceptible, and a little too near akin to the time-honoured barbarism of whitewash. How inferior the hue communicated to it by this process to the natural dark tone which contrasts so finely, and is itself contrasted by the softer colour of the stone, may be appreciated by a comparison with the new Purbeck employed in the great east window of the Lady Chapel, of which I must speak hereafter.

The surface of the side aisle walls of the Lady Chapel, of its end, and of the smaller or eastern transept, is enriched by a very well designed arcade of trefoil-headed arches (the upper foil pointed), formed of three rolls, resting on single shafts, not quite clear, and surmounted by a dripstone, with terminations of heads and various flowered designs. Every spandril has its sculptured representation of foliage, plants, grotesque heads, fabulous beings, legend of monastic origin, or event of authentic history, the variety of which displays astonishing fertility of invention, and opens a source of gratification scarcely to be exhausted. The beauty of this arcade was originally enhanced by colour, in which it predominated the deep vermilion and green I have everywhere found so largely introduced into the polychrome decorations of Mediaeval artists. The original windows of the aisles have been replaced by others of Perpendicular character, but those of the sides and of the north front of the smaller transept remain unaltered, with the exception of the tracery, inserted, perhaps, in the fifteenth century. A somewhat minute description of this part of the building is necessary, because, as will be shown, it has been adopted as the model of the reconstruction of the south end of the eastern transept, and of the eastern termination of the Lady Chapel, and so must materially influence our judgment of the propriety of the selection and the success of the adaptation.

The internal face of the wall, then, is pierced into an open arcade of two stories of three arches each; those of the lower tier of equal height, the central one of the upper range being stilted above the side ones. They are divided by piers composed of four detached Purbeck shafts, with as many intervening reed-like fillets, the shaft in front rising uninterrupted to the spring of the arch mouldings of the upper story. The thickness of the wall affords space for an ambulatory or gallery, divided into two stories by a ceiling on the level of the summit of the lower arcade. In the external face of the wall, corresponding to the screens, are opened windows of the same form. In all accessories, as the rings which encircle the piers, the round

\* All the piers are not precisely of this plan, but in all the circular outline is adhered to, and this is the point to which I wish to direct attention. Perhaps the closest resemblance, in this particular, to the Early English practice, may be found in the fine open porch at the west end of Notre Dame at Dijon, where, amongst a variety of very beautiful piers, occurs this identical one.

abacus and base, the foliage of the capitals, the grouping of the multiplied slender rolls of the arch-mouldings, we find complete parity with these members already described—the same pure, beautiful, and well-developed Early English.

The vaulting of the central aisle of the Lady Chapel is four-rolled, with the addition of the longitudinal ridge rib. The transverse, diagonals, and wall-rib, all rest upon the capital of a marble shaft at the height of the clerestory string, which is itself supported by a second shaft of less diameter, descending to a rich corbel in the spandril of the pier arches. The triforium and clerestory strings, a filleted round, form the upper members of the abacus of these shafts. In the side-aisles the ridge rib is omitted, and the groups of triple vaulting shafts rest upon the floor.

The state of the eastern portion of the building being such as has been described, and the reconstruction of the south transept front and eastern termination of the Lady Chapel being confessedly called for by their dilapidated and dangerous condition, the question naturally arises,—on what principle should the new work be based, and in harmony with which of the pre-existing architectural styles should it be sought to place it?—with the earlier or the later? And, first, it may be remarked that, except its comparative antiquity, the loss of the great east window leaves little to regret. It was of the geometrical tracery period, of nine lights, with a tracery at mid-height, and two very insignificant roses in the head, the whole as poor in design, as meagre and ineffective in mouldings, and as coarse in execution as can well be conceived—a little, and but a little superior to the one still remaining in the west front. It requires no great effort of imagination to picture the embarrassment which may arise in the reconstruction of a part of an edifice into which have been adopted the features of successive styles as they arose, a practice invariably followed by the Middle-Age architects. A portion thus surrounded by examples of every period of architecture, perhaps equally prominent and equally beautiful in kind with itself, renders selection a perplexing task, and preference not to be justified by any very conclusive reasons. But I apprehend that where, as in the instance we are considering, the architecture of so much of the building as can be embraced in one view is perfectly homogeneous (and this would be the case, even if the choir itself were had open by the removal of the screen which shuts it out from the Lady Chapel), much of the difficulty vanishes, and that really but little liberty of choice is left. To give the preference to a later style, merely because it happens to prevail in a comparatively remote part of the structure, would be unnecessarily to introduce discordance, and break the unity of a consistent and perfect whole. I think, then, that judgment to be commended, which, without allowing itself to be seduced by a straining after originality, has contented itself with the humbler praise to be gained by a faithful imitation. In working out the south front of the transept, the architect has simply copied in all its minutest details the opposite one; and in the Lady Chapel, for the triplet, has substituted a quintuplet of lights, the lower story of uniform height, and graduated only in width; the upper ones diminishing both in height and width from the centre. The execution, in general, is creditable to the skill and intelligence of the workmen employed. It would be too much to affirm that in working out the foliage of the capitals, the exact spirit of the original has been transferred to the copy. Of these exquisite enrichments of the edifice I have in the previous description said nothing, because I feel that to convey an adequate notion of their beauty is beyond the power of words, an assertion in which I shall be borne out by every one who has examined the cathedral of Worcester. It would, indeed, be wonderful, if the attempts of modern workmen, called but at rare intervals to exercise themselves upon this species of decoration, should vie with the productions of those "master masons" whose eye and hand were trained by constant practice in a sculpture which entered into every conception and formed a component part of every building,—civil and ecclesiastical. However skillful the imitations of our own day, they are still but imitations,—the sickly bloom of the exotic, not the fresh and hardy flowers of the indigenous plant.

The choir, an elevated platform, so to speak, being raised by a flight of six steps above the eastern and western transepts, is, with some slight variations, identical with the Lady Chapel. Thus, the pier-arches are obtuse, and the two most western ones on each side are enriched with two bands of the tooth ornament in the hollow mouldings. The second pier from the west, on the north side, differs from all the rest in plan, the shafts being much more bulky and attached, and the capital of different design. I am unable to offer any satisfactory explanation of this singular discrepancy, for it seems equally unlikely that this

isolated pier should be the remains of an earlier building, or that it should have been interpolated at a subsequent period. The windows of the clerestory, like those of the Lady Chapel, are of the Perpendicular era, as are also those of the side aisles, and these are preceded by the like screen of triple arcades on shafts, except in the most western compartment on the north side, where it takes the form of a pointed multifoliate arch, a variety not unfrequently met with in the Saracenic or Moorish architecture of Spain.

With the choir ends the pure Early English construction. The four archways at the crossing of the western transept are of Decorated character, being composed, both the vertical and curved portions, of an accumulation of circular bowtells; with intervening half-circle hollows and square fillets; short capitals of foliage, woven horizontally around at the impost, and base of the proper section. The sides and fronts may be dismissed in a single word; they are unmistakable specimens of "Churchwardens' Gothic," with the exception of the window in the south front, which is a restored triplet of lights. The preservation of the groups of triple vaulting shafts descending to the floor is pretty good evidence that this part of the building was in its origin conformable to the Early English of the choir and Lady Chapel.

Of the nine compartments of the nave and aisles seven are also of Decorated character; and though the detail be not in all respects of the best kind, the general proportions and aspect are satisfactory, and the whole not an unworthy accompaniment of the eastern part. The piers are composed of bundles of circular bowtells, twenty-four in number; three of these in front and behind being appropriated to the support of the vaulting ribs. The triforium has no marked characteristic of the style, being simply two pointed arches in each bay, subdivided into two smaller ones, without tracery. In the inner face of the clerestory wall are pierced three unconnected openings, the central one tallest and widest; the window in the corresponding outer face being bad Perpendicular.

The vaulting shafts rise to the clerestory string, where they receive the transverse, diagonals, and wall-rib shaft. This description has a general application to both sides of the nave; but there are some noticeable distinctions, which may guide us in a conjecture as to their comparative antiquity. The bowtells of the archway mouldings on the south side are of equal diameter, and some of them carry on the face an immediately broad square fillet, a certain mark of late and inferior Decorated. Bowtells and hollows run together without the relief of any rectangular portions, and there is no clear distinction of orders. The foliage of the capitals is coarse, and confined to the convex portions. On the north side, variety is obtained by the employment of rolls of different diameter: one is filleted, another carries the double fillet; and the introduction of rectangular portions breaks the mass of mouldings into well-marked orders. The foliage is various and well worked, and continued over the whole outline of the pier. Again, on the south side, the pier arches and triforium have no drip-stone, which exists on the north side. The heads of the clerestory apertures are formed not of segments of circles, but of two straight lines meeting at the vertex; and under the windows of the side aisles (these are Perpendicular insertions) there runs a bold string of the scroll moulding on the north side, which is omitted on the opposite one. Usually, the vaulting of the north aisle is plain quadripartite, with the addition of longitudinal and transverse ridge ribs; whilst on the south are introduced other shorter ribs parallel to these, so as to make a sort of reënforced pattern. I possess no dates of this part of the cathedral, but I think there can be little doubt, from the intrinsic evidence, that a quarter of a century intervened between the completion of the opposite sides of the nave.

The two bays on each side nearest the west front are relics of a much earlier epoch; a very characteristic and pleasing example of the Transitional era, marked by the intermixture of circular and pointed forms, and the use of pure Norman ornament. The pier-arches are obtusely pointed; the capitals of a sort of fantastic foliage, which has no type in nature. The triforium presents three circular-headed openings, enriched with a variety of the chevron ornament, very well cut, included under a pointed arch, and the solid wall between them is occupied by a decoration of which I can give no description. The clerestory consists of three isolated round-topped apertures, the central one broadest and highest; opposite to which is opened a window of the same form. The larger opening has its shaft in the sides, and Norman ornaments in the arch mouldings. The original vaulting shafts of this part still remain, and the vaulting itself of the south aisle is a genuine Transition example, the transverse ribs only being pointed, the diagonals circular.\*

VIAFOL.

\* To be continued.



### A CENTRAL "PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH ACROSS THE WATER.

THE chief point in the previous and the following letter of our correspondent "EPHILION"—the proper utilization of that part of Lambeth which lies near the ends of Waterloo and Westminster bridges—also adverted to by others who have written to us on the subject of the property on the "Surrey side of the metropolis,"—being one of very great importance to London, it may be well to refer to our leading article of December 13th, 1856, on the subject of Westminster-bridge and sites for other bridges, in which article, it is perhaps due to ourselves to say, the point in question was prominently advanced; and we may also say that it was steadily kept in view (petitionally, as may have appeared to some readers) in our notices of the designs for the Government Offices. Our exertions for the prosecution of the works of Westminster-bridge have been successful; but the objects to be served by the provision of bridge-communication will be fallen short of, until there are provided other and ample means of access to the *quadrant space*, as we called it, which is again in question. The objects referred to by us, as in the well-timed letters of "Ephilion," were the appropriation of what we showed was really the heart of the metropolis, to some of those purposes for which ground was greatly needed,—purposes, such as the erection, in the needed central situation, of public buildings and improved dwellings for the poor, and the removal of an Alsatia for the lawless and dangerous classes—who were just so much out of the main routes as to be free from observation, yet sufficiently near to be capable of affecting the peace and morals of the metropolis. Such objects, we felt, required not only the maintenance of all the existing communications, as well as the removal of all tolls, but the complete *éclaircissage* of the district, and the equalization of the opposite sides of the river, by a considerable increase in present and proposed bridges. We adverted to different schemes which had been put forth for a new bridge from Charing-cross—those involving the removal of Northumberland House, or otherwise—and we have some reason to believe that we were successful in drawing the attention of architects who sent plans in the Government competition, to the sites for bridges open for selection, and to the general importance of what we have here reverted to—as to which as noticed by us at the time, the plans showed the unanimity of opinion which was felt. The subject is one to which on every ground the attention of the Government should be at once closely directed. The only real difficulty that we discovered as to the utilization of the district, was that arising from its lowness, and as regards this point, the formation of the embankment, and the level to be chosen for the principal floors of buildings, suggestions are much needed.

In continuation of the remarks, on the above subject, which you kindly inserted in page 542, of a previous number, I would again draw attention to the map of London.

The scheme that suggests itself to me would create in the centre of our great town a kind of twin *Place de la Concorde*, one on either side of the river, such as exists in Paris only on one side. The bridge that would connect these two portions should not be less than from 100 to 200 feet wide, and horizontal like Waterloo-bridge. The extreme length of vista thus gained, from the present National Gallery to the centre of the area above described on the other side of the river, would be about half a mile or something more, and around this double spot might arise some of those great public buildings the sites of which are now mooted.

I am well aware that the above idea may raise a smile as visionary, and especially so because it is so large; and it may be one that even despotism could with difficulty carry out; but my individual impression is, that if the Emperor Napoleon had a similar architectural card in Paris to play, he would play it.

I cannot see why we should be desirous to carry our architectural and artistic schemes so much to the west, and why the most accessible part of London, the centre, should not receive our chief care. The river itself (in abeyance, as regards passenger traffic in great measure since the days of Charles the Second) has now again resumed its natural office of being a great highway, and a highway on which each year witnesses a great increase of transit. Any removal of the nucleus of London from the river will be removing it from its greatest, and what is of vast importance to the mass of the people, its *cheapest* highway.

The river has certainly now got a bad name for want of cleanliness, and with reason; but if London is to go on increasing as a city in any direction, the sewage improvements must be carried out, and to

doubt that our energies will be successful in this point at last is absurd. It will be a work of time, of course; but, that it will be done, and that the river of the metropolis will eventually become a clean river, is beyond reasonable doubt.

Then, as regards the smoke of London, it is satisfactory that that has already abated. In practice, it will probably be found much more easy to abate the smoke of furnaces and workshops than the aggregate smoke of private houses; and the banks of the Thames may in consequence become eventually one of the clearest parts of London.

I allude to the above points because it is probable that two of the readiest objections raised to a scheme that would emphasize the centralization of London on the banks of the Thames, would be the present unclean state of the river and the smoke of the factories. But neither of these appears to me available objections, especially in relation to the above scheme, which would probably take many years to carry into full effect.

I alluded in my former letter to the influence such a central arrangement as I indicate would have on relieving the traffic of the metropolis. This going from west to east along the Strand begins to clog about Somerset House; but people will not avail themselves of Waterloo-bridge because there is the toll to pay; besides, it makes a great angle coming from or to the west. On the other hand, did there exist a toll-free bridge for vehicles direct from Trafalgar-square to the Borough side of the water, somewhat to the west of the Suspension-bridge, many heavy waggons, besides other carriages, would avail themselves of this route, especially as part of my plan is that on the Borough side there should be highways, radiating or otherwise, direct to all the other metropolitan bridges, for which a glance on the map will show that the spot indicated offers peculiar advantages.

As regards the main traffic of London, viewed in its broadest aspect, it now travels along the *outer* bend of the river, on the north side. If, on the other hand, the best facilities were afforded for inviting it across the river to the *inner* bend at its centre, which occurs near Trafalgar-square, and conducting it away (towards the east especially), there can be no doubt that the present clogged state of many of the thoroughfares in the City would be much amended. These points, however, can be judged of only by reference to the map.

According to the above scheme, it is evident that a great improvement in value would accrue to the property on the borough side generally. From the central area on the south bank would radiate roads, not only to the various bridges, but to Kennington, Camberwell, Brixton, &c. which by this means would become, as it were, portions of London, all which places at present seem, as it were, to be ignored by the north bank. In fact, the north bank of the Thames seems to regard the south bank rather as a sort of poor relation, to be ashamed of! It is quite time, I think, to get over this prestige, especially as, by a scheme so substantially uniting the two divisions, the north bank could lose nothing, while the south bank would gain immeasurably, and a very few years would show the force of such a change in a more healthful and better ventilated class of buildings, in the borough generally, taking the place of those already in existence. In fact, as soon as the aristocratic brother on the north side had thoroughly acknowledged his more dingy "*confrère*," by being substantially hand in hand with him across the river, the latter would begin to brush himself up in honour of the companionship!

As I mentioned in my former letter, the full development of the above scheme would include the removal of Northumberland House (as the best spot, on the map, for the north end of the bridge to start from, seems to lie between Scotland-yard and the Suspension-bridge), and Northumberland House would stand in the line between this and Trafalgar-square; but in the first place I would suggest that sufficient openings might be made towards Whitehall on one side, and through Northumberland-street in the Strand on the other, to answer, for the time, all practical purposes. Thus the main architectural effect of an expanded half-mile vista from the present National Gallery across the river to the south area might be left after efforts.

Supposing the above scheme to have reason in it as affording facilities for the just development of London, then I repeat it might be well for Government, with this view, to possess itself of the area indicated in my last letter, viz. the space lying between the river and the South-Western Railway, and the Waterloo and Westminster-bridge roads, or, at least, of a considerable portion of it, and to do this while it is occupied in its present way, and before some great company lays its giant grasp on it.

I have by no means exhausted what I have to say on this subject, but will not—at least at present—intrude more on your indulgence.

EPHILION.

### THE UTILIZATION AND ADORNMENT OF RAILWAY BANKS.

THE railways of London are raising new neighbourhoods into existence, and along the line which skirts the north-eastern extremity of the metropolis, a fringe of houses is in course of rapid erection. It is curious to reflect upon the change of feeling which has taken place since those days when the landowners and others dreaded the approach of the locomotive as much as they would have done that of some devouring monster.

Now, however, lordly owners of large estates will rather coax the railways through their domains than drive them elsewhere. This rapid grouping of houses and other buildings about them is a subject worthy of consideration, for it is certain that before many years are passed, the metropolitan and suburban railways will be important thoroughfares, which will be daily traversed by thousands. It is true that the progress through districts is rapid, but, notwithstanding, it is necessary that the architectural boundary of these iron roads in streets should be made as agreeable as possible to the eye. It is scarcely necessary to allude to the unsightly appearance of our great water thoroughfare, yet, what a magnificent frontage might have been there displayed, if timely measures had been taken.

At the present time, the views from most of the railways in the neighbourhood of London is anything but agreeable. Look, for instance, at the dilapidated and dangerous groups of dwellings which are seen from the carriages in passing over Berners-street, Rotherhithe, Lambeth, Vauxhall, &c. This, under existing circumstances, is scarcely to be avoided, except by heightening the palings; but in new neighbourhoods a great deal might be done.

Along the line from Chalk-farm to Blackwall, the embankment is very extensive, and falls at a moderate gradient. This is now covered by weeds and other matters, which convey an idea of the greatest neglect. In the neighbourhood of some railway stations, the embankments are beautiful with shrubs and flowers; in other parts, good crops of grass, have been gathered; and this appearance of cultivation is better than the weeds just alluded to. Of course, in some soils, nature generally presents features which, by their picturesque forms or colour, are pleasant to the eye. Passengers by several of the lines of railway near the metropolis, may note that neat cottage residences are built near the lines, with gardens and pretty terraces, which come close to the embankment, and then we see the weeds. Might there not be some arrangement made between the railway companies and the proprietors of the adjoining property, that by the building of some wall and ornamental railings, those living in the houses near might be permitted to cultivate the now waste places?

It is a pity to see the waste of land on embankments, which are generally well drained. In all the surrounding market gardens we see places cultivated which would not be so good as cuttings or banks, for certain products most useful to London. A little dressing of proper manure would make many of our railway banks most fertile. Once upon a time the Bishop of Ely's garden, near Holborn, was famous for its strawberry-beds, and why should not some of those banks along the rail (now in the suburbs as the other place was), which present a favourable plain towards the sun, become equally celebrated for these and other matters?

Seeing the attraction which railways have for dwellings, we ought to give attention to what faces those important thoroughfares. We should not, for instance, see the blank and sham-built portion of a church, or other public building, turned towards the rail.

Our best taste has led us to cultivate landscape gardening, and in this art the professor has made his study to hide objectionable matters "discreetly from the view." Why should we neglect so wise a discretion in connection with railways, for many thousands will travel by the suburban lines, simply for the sake of pleasure and recreation; and those who do so will be more likely to be attracted by what gives pleasure to the eye than by deformities. Unless attention be awakened to the subject, the railway banks will be as disgraceful to us of this generation, as the banks of Father Thames are to those who lived before us.

WOOD SALE AT HULL.—On the 24th ult. Mr. Edward Chaloner, the timber-broker, of Liverpool, offered for sale by auction, the cargo of the *Sveadan*, just arrived in Hull. There was a good attendance of buyers, and everything went off at good prices, except a few loads of birch. For these only one bid of 70s. per ton was made, and it was, therefore, reserved for sale by private contract.



## ON CAUSES RETARDING THE IMPROVEMENT OF THE WORKING CLASSES.

In a lecture by Mr. P. A. Fraser, recently published,\* this gentleman maintains that evil examples, arising out of our present commercial system generally, and more particularly out of contract competition and over-speculation, along with the public and eleemosynary character of the interest taken in the welfare of the working classes, retard their moral and intellectual progress infinitely more than do the want of education, industrial training, and recreation.

The lecturer, one of whose former discourses, it may be remembered, was noticed some time since in our columns, modestly urged, as a claim on the attention of his audience while treating of the welfare of the working classes, that for six years of his early life his associates were principally those of the working classes, and that the personal superintendence he had given to various works on which he had occasion to employ workmen during the past ten or twelve years, must have afforded him good opportunities for renewing his acquaintance with the wants and feelings of working men.

The want of practical knowledge among those who now undertake contract works is one of the first and most important points to which the lecturer draws attention.

"I believe most sincerely," he remarks, "that our indifference as to whether contractors and tradesmen generally are or are not practically acquainted with the works they undertake to perform is productive of serious consequences to us all. I cannot suppose there are many, if any, here ignorant of the fact that the non-practical contractor of all work cannot trace his descent far back in the genealogical annals of trade. Sixty or seventy years ago it must have been a circumstance of rare occurrence that of a contractor undertaking the performance of work with which he was not practically acquainted; and for although 'bubble schemes' had shaken commercial society severely in this country more than seventy years before, tradesmen as such kept their attention directed to the attainment of what was then considered the highest aim of their ambition, that of perfecting themselves in the arts and mysteries of their crafts, and in performing faithfully the duties of their respective callings. Then it was that a contractor agreed to perform certain works for such an amount of money as, from his experience and practical acquaintance with his business, he considered a sufficient remuneration. Then it was that the employer agreed to pay the amount asked without stipulating for penalties for non-performance, he in general having no reason to doubt either the honesty or skill of the tradesman. In short, business contracts were then, and for long, long before, simply agreements between parties possessing confidence in each other, and were not considered, as they now are, essential for the growth of energy and enterprise, nor adopted as safeguards against imposition.

But those were times differing from the present in many ways. A tradesman contractor does not now require to waste his time in acquiring practical knowledge. Provided he can obtain the use of capital, he will be at once considered capable of undertaking the performance of all and every conceivable sort of work, subject, however, to these qualifications and restrictions;—he must not yet intermeddle with either the emoluments or the duties of those engaged in the practice of law or physic. Lawyers and medical men may, as contractors, undertake to build ships and houses, and construct railways and harbours; but were a tradesman, even aided by an experienced foreman or manager, to offer to conduct a lawsuit or to cure the sick, he would certainly find the good old prejudice in favour of practical knowledge a barrier to his progress. And is it not right that he should? If so, why should any honest tradesman who, by patient industry in the exercise of his talents, has acquired a practical acquaintance with his business, be driven into competition with, as it may be, an untaught adventurer—a man who may never have spent one hour of his life in endeavouring to understand practically the nature of the business he so readily and so recklessly undertakes to perform?"

Few, he supposed, were ignorant of the fact that many contractors rely quite as much for remuneration on the opportunities that may occur for evading their obligations, as on the faithful performances of their duties. Gambling, bankruptcy, and other evils followed in the train of such malpractices, and these considerations led him to another of the causes at present retarding moral and intellectual improvement amongst the working classes, namely, the growing

\* "On some of the Causes which at present retard the Moral and Intellectual Progress of the Working Classes: A Lecture delivered to the Members of the Edinburgh Scientific and Literary Association, on 18th February, 1857. By Patrick Allan Fraser, of Hospitalfield, Edinburgh: Edmonstone and Douglas, 1857.



ROUEN: ENTRANCE DOORWAY; 1602.

disposition to view manual labour as derogatory to the dignity of the sons of respectable people, and arising out of this feeling the neglect of honest and industrious parents to teach their children the duties of some industrial calling.

"Many a decent, honest working man now believes he does the utmost extent of good within his power for his sons when he gives them a little more education than he himself received, and afterwards places them as apprentices in banks, shops, writers' or railway offices, and allows them to trust to any knowledge they may perchance pick up there for making their way in the world."

There is unfortunately far too much truth in these and other remarks made by Mr. Fraser in his very sensible lecture, which we quote mainly for the purpose of inducing our readers to peruse it for themselves.

## SCHOOLS OF ART.

**Torquay and Brixham.**—A provisional committee, consisting of representatives of all classes, has been appointed to organise a school of art and drawing for Torquay and its neighbourhood. Dr. Harris, the rector, as chairman; Mr. E. Vivian, as treasurer; and Mr. Edmonstone as honorary secretary, have agreed to act provisionally.

**Greenock.**—For some time past drawing has been taught at Greenock by masters from the Paisley School of art; but the demand has so much increased, we are told, that a committee has been named to establish an independent school for the town.

**Dunfermline.**—The school of art here, it is re-

ported, is about to be closed for want of funds to repair the building, which was purposely erected not five years ago. It is to be hoped that the town will act with spirit, and preserve the institution.

## DOMESTIC ARCHITECTURE IN ROUEN.

ENTRANCE-DOORWAY OF A HOUSE IN THE RUE SALAMANDRE.

This semi-circular-headed doorway has a large amount of character; and, although of impure taste, the details of the pier and of the arch render it elegant. The open pediment allows the ornamental work to escape like a plume; the swan sculptured on the key-stone of the arch, by the natural grace of its form, tends to augment the elegance of the whole.

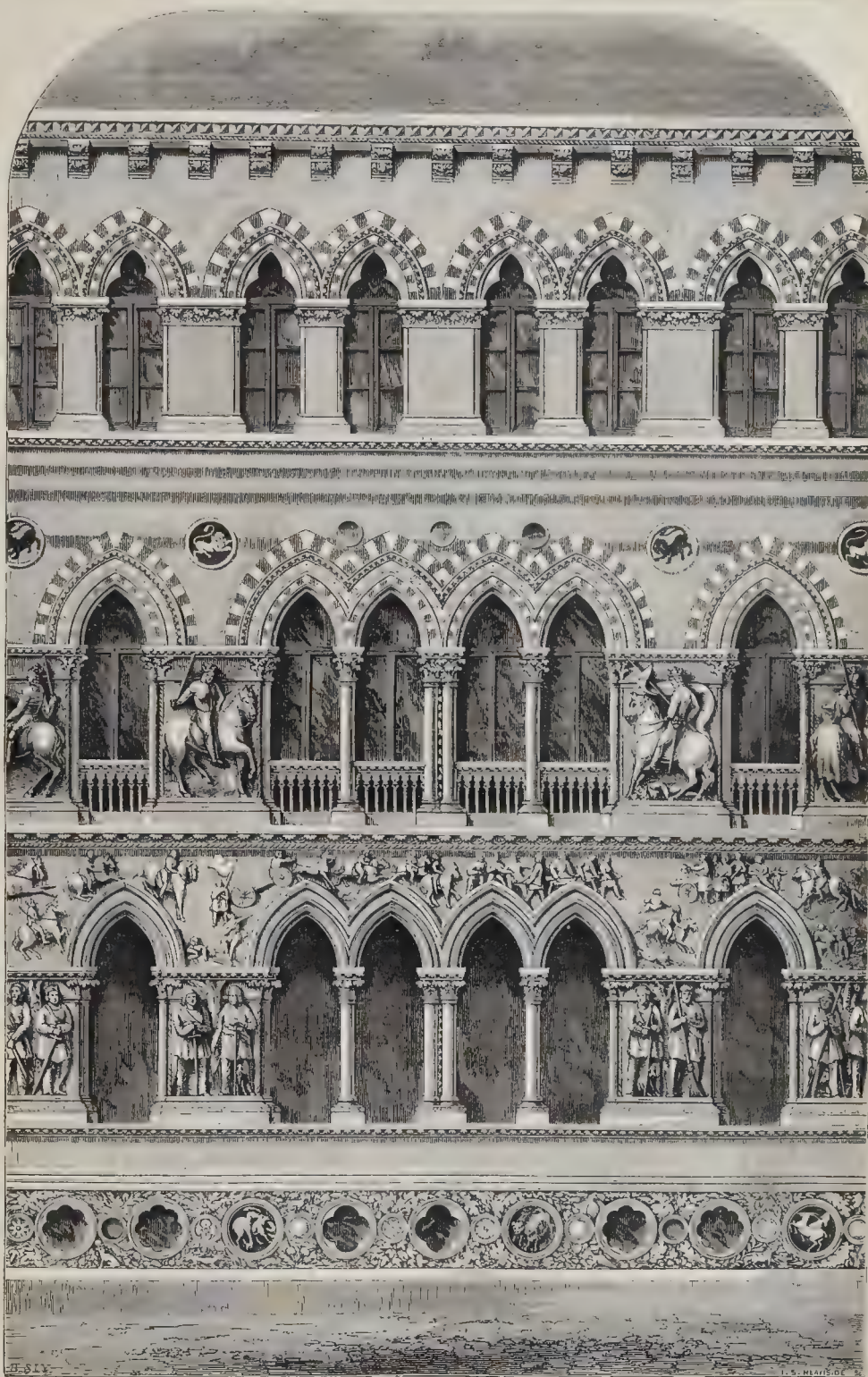
The interior of the arch is fitted with a wooden door, the decoration of which recalls the last moments of the sixteenth century.

The house bears on a shield placed at the top the date 1602.

## THE PREMATED DESIGNS FOR THE GOVERNMENT OFFICES.

Messrs. DLAKE and WOODWARD's design for the Foreign-office, to which the fourth premium was awarded, was mainly distinguished by the profuse and peculiar use of sculpture on the façades. We have been led, therefore, to engrave a portion of the front at large, in preference to a general view. A short description of the general design will be found in our detailed notice of the competition (p. 270, ante).





PORTION OF DESIGN FOR FOREIGN OFFICE, TO WHICH FOURTH PREMIUM WAS AWARDED.

MESSRS. DEANE AND WOODWARD, ARCHITECTS.



## MEMORIAL OF THE LATE SIR CHARLES HOTHAM.

The monument about to be erected in the Melbourne Cemetery, under vote from the Legislative Council of Victoria, of which country the deceased was the first governor, is approaching completion in the studio of Mr. J. Birnie Philip. The design by Mr. G. G. Scott, which was exhibited at the Academy, consists of a column of Peterhead granite, standing at the head of a plain sarcophagus of the same material, duly inscribed. The base of the column is relieved by the working in of Portland stone, a band of the same material bisecting the shaft. The head is of Portland, foliated, and surmounted by four niches—in the small columns of which granite is again used—figures of Mercy, Wisdom, Justice, and Fortitude filling each respectively, bas-reliefs embodying each attribute being introduced in addition in the foliated head, the "Woman taken in Adultery," being the subject beneath Mercy; Christ disputing with the Doctors, Wisdom; the Tribute Money, Justice, and the Overthrow of the Money Changers, that of Fortitude. The whole is crowned by a richly-carved cross. The entire height of the memorial is 52 feet, of which 28 feet are devoted to the head. Lady Hotham has herself largely contributed to its importance, having, amongst other things, determined on enclosing an area round it of 100 feet, with a granite curb, and an appropriate wrought-iron railing. The cost will be about 2,500l.

## MELBOURNE, VICTORIA.

STONE and brick are rapidly taking the place of wood in Melbourne as materials for building: inland, wood is still much used, and I must give colonial carpenters credit for building a house of decent appearance, and tolerable durability, in a very short time. Studds and battens are obtained from the saw-mills; shingles for roofing, and palings for walls, from the "bush" where they are split: doors and windows are brought up from Melbourne with the furniture, and in a month the carpenters are gone and the house inhabited. Basalt is the prevailing stone: some works very freely, and some yields metal for roads of a first-rate character. There are several freestones in the colony, but until this year they have not been much used. Gann (red, white, or blue) is nearly the universal timber: it has the peculiarity of being heavier than water, and of shrinking longitudinally to a considerable extent. Blue gum, from Van Diemen's Land, and Kauri pine, from New Zealand, are far better timber.

The building of banks absorbs the skill of the Melbourne masons. They are generally very elaborate buildings, but having no sympathies with the neighbouring structures, do not produce a good effect as a rule. The front elevation of the Bank of New South Wales, now in progress, is very costly, but unfortunately the sidewalls of brick tower above the adjoining houses. I think simple designs for edifices to stand alone would add more to the beauty of the city. The main streets are one and a half chain wide: in populous parts they are metalled, channelled, and curbed; flagging is wanting in too many places. A street of fine buildings of uniform character, with colonnades, would have a grand effect and be suitable to the climate.

There is hardly one decent piece of Gothic architecture in the city excepting the University, which is a fine building, unfinished as yet, in the Perpendicular style. St. John's was a happy specimen of Norman, the zigzag moulding being very effectively rendered in white bricks. The stone used in this church is basalt. A chancel of wrought stone has been lately added: it is very costly, and very tame compared to the nave. The Houses of Parliament are waiting for a façade to remove their gloomy appearance, occasioned by the carcass consisting of a mass of heavy blue stone: they occupy a magnificent site. The Library, also, without its front, is built of freestone externally, with plaster columns, and stone stairs done in wood internally. The doors, also, give a very good idea of how bronze would look. To make up for these mistakes there is a real tessellated pavement for the floor downstairs, and really good books up. The library is free and well attended, especially in an evening, when chairs are at a premium. The wholesale stores are very good specimens of warehouse building in solid stone. Colonial bricks are not burnt sufficiently to be very good, but their character is improving.

There is a fine stone bridge, 120 feet span, over the Garra, built before the discovery of gold. Until the railway to Sandridge and St. Kilda relieved it, the traffic was inconveniently great.

Across the same river are several other bridges,—at Richmond, Hawthorn, and Collingwood. The last is 170 feet span, consisting of three laminated arches, springing from stone abutments. I think its cost is 17,000l.

The roads round Melbourne are metalled for four or five miles. To Bendigo the road is made through-out, 120 miles. Ballarat is supplied from Geelong by a road also made, the last part being formed of planks, which seem to answer well.

The railway from Williamstown to Geelong is now open. The superintendent of locomotives was killed on the opening day, by stretching his body more than eighteen inches from the line of carriages, where it was struck by the uprights of a bridge.

I will wind up with a few "facts" this rather discursive communication.

Melbourne is in Victoria, which is no part of New South Wales or South Australia.

A very comfortable house, with a quarter of an acre of garden, verandah, shed, &c. may be had within four miles of Melbourne for 20s. a week. Omnibuses, every hour, 1s.; or by the week, to and fro, 9s.

Firearms are very abundant and very useless. Slop clothes are cheap; so are boots and shoes. Melbourne contains all manner of shops, in which tools adapted to the colony are to be obtained with far greater facility than in London, as the United States have supplied their inventions as well as England.

Bush-rangin is about as common here as garrotting in England.

Mechanics should bring such tools as they are sure to want, but not any with the idea of their not being obtainable here.

Mechanics earn from 14s. to 16s. for an eight-hour day; labourers, 8s. to 12s. without rations, or 20s. to 30s. a week with rations, that is, board and lodging. Meat is about 6d. a pound; bread, 2s. the 4-lb. loaf. G. B. P.

Victoria, July 4, 1857.

## ARTISTIC CULTURE IN BELGIUM AND PRUSSIA.

In the circular intimation of the commencement of the sessional courses in Architecture and Construction at University College, on the 18th inst. Professor Donaldson says,—

"In a short visit that I have recently made to Belgium and the Rhenish Provinces of Prussia, I have been much struck with the ample provisions made by the Governments, generally of those countries, and by the local municipalities, to provide the means of artistic instruction for all classes.

An earnest and intelligent spirit of enterprise is moving all, particularly in Belgium, to perfect themselves in every branch of manufacturing productions and works of art. They are therefore making corresponding progress in their endeavours to equal and even to surpass other nations.

Antwerp, Ghent, Liège, Brussels, and Düsseldorf, has each its well-appointed schools, with first-rate professors in all branches, and directors of the highest eminence. At Antwerp there are 1,300 (!!) pupils in the Art Schools, preparing to carry the fruits of their teaching and studies into the active purposes of after life, and who are distributed throughout the various productive classes of the community; some to be devoted to the higher objects of painters, sculptors, architects, engravers, or carvers; others contributing to the embellishment and refinement of the manufacturing industries,—all tending to elevate the taste.

I venture to call attention to these striking facts. Architecture also is there very thoroughly taught in all its branches, and young men are rising up who pursue an active, zealous training, to fit them for a future successful career."

Such a preparation is not as yet sufficiently appreciated in this country, where the course of study is more desultory, and the combination of artistic and industrial skill slow in its development.

## KESWICK WATERWORKS.

As there are many small towns in Great Britain without a public water-supply, or any other form of sanitary arrangements, we present the following abstract, from a report on the subject, because it shows how much may be done at a comparatively small cost in a small place. Keswick, as is known to thousands of tourists, is the capital of the lake district, and is beautifully situated in the Vale of Derwent. Wordsworth, Coleridge, and Southey, have made the place famous: the Marsh-hills, the Stangers, and the Lictches, have done much for the residents, with purse and pen. These gentlemen, with Mr. Joseph Hall, solicitor, and some others, have given the place the blessing of a good water-supply. The following analyses show the relative hardness of the pumpwaters, and of the new supply:—

Analyses of Local Waters.	Degrees of Hardness.
Mr. Hall's Pump .....	9.5
Royal Oak Hotel Pump .....	28.2
Pump near Museum .....	16.4
Lake Derwentwater .....	2.05
River Greta, near Keswick .....	3.05
New Waterworks .....	0.38

The five first analyses were made by Dr. Lyon Playfair: the last analysis was made by Dr. Robert Angus Smith, and shows that the water from the clay slate of Skiddaw is only about half a degree of hardness.

The works were projected in the autumn of 1853, the promoters at that time intending to apply for Parliamentary powers to construct them. The cost of such an application was, however, a serious obstacle, and it was determined to abandon the idea of a special Act, and to carry out the works by a Joint Stock Company, with a capital of 3,000l. in 600 shares, of 5l. each. Arrangements were entered into, by Joseph Hall, esq. solicitor, of Keswick, with Sir John Walsh, for a supply of water from springs arising on his land, on the west side of Skiddaw, and the work was commenced in March, 1856. Early in July following, water was delivered in the town, and at present upwards of 300 houses are supplied by the company.

Dr. R. Angus Smith reported the water to be about one-third of a degree of hardness, and free from vegetable and other impurities.

The water is collected in earthenware pipes from the several springs, and is conveyed to the service reservoir, and thence in cast-iron pipes to the town. Nearly two miles of earthenware pipes, and about 2½ miles of cast-iron pipes have been laid. The service reservoir (which is arched over) is capable of holding about 80,000 gallons. The total expenditure of the Company has been about 2,900l. The works were designed and carried out by Mr. Rawlinson, C.E.; Mr. John Lawson acting as managing engineer. At the first annual meeting of the shareholders after the completion of the works, held on the 31st August, a dividend of 2l. 10s. per share was declared. The directors' report sets forth,—

"The reservoir having been completed and the main pipes laid at Midsummer, 1856, the directors commenced supplying their customers with water on the 2nd of August, 1856, and the supply has since continued without interruption.

The yield of water from the springs has proved quite equal to the expectation formed of it, and will be found adequate to the supply of any amount of demand which may reasonably be expected to arise for some years to come. The quality of the water has, the directors believe, given entire satisfaction to every class of customers, and they are gratified in being able to add that the demand for it has increased rapidly and steadily since the opening of the works, and they entertain little doubt that the works will, in a short period, yield a handsome per centage on the capital embarked."

It may be stated that the charges for water supplied by this company are amongst the lowest made by any company in England, the poorer class of customers being charged only one penny per week.

The cash from shareholders for water rents, from bank and uncollected, amounted to 3,121l. 8s. 11½d.; and the expenditure by labour, materials, iron and earthenware pipes, fittings, engineering, law expenses, stationery, secretary rent, incidental expenses, &c. 3,077l. 18s. 11½d.; leaving a balance of 103l. 10s. 0½d.

The supply of water will be constant, and no tanks or cisterns will be required."

The volume of water at command in the driest season is not less than 100,000 gallons per day of twenty-four hours. The mains are capable of delivering 240,000 gallons per day of twenty-four hours. The pressure in the tower is about 130 feet. The reservoir, which is of the stone of the district, and arched over with Borrowdale slate, holds about 80,000 gallons, serving to equalize the day and night yield of the springs in the very dry season. The whole of the mains below the reservoir and within the town, are of cast-iron: the whole of the branch and house services are of wrought iron; so that the inhabitants run no danger of lead poisoning. The capacity of the mains and the pressure are sufficient to throw water over any house: there are fire-cocks throughout the town. The softness and purity of the water afford a great luxury, and there is not the slightest inconvenience felt in the use of water so soft. An addition of lime has not been found necessary to health, as some advocates of hard waters have asserted it would be the case. Iron house-fittings are found cheap, easy of manipulation in putting up, and efficient in use. The taps are Messrs. Guest and Chirnsey's patent screw-down, and are perfectly tight in use.

## BLIND WICKET TO THE GREEN-PARK.

SOME twenty years back there was an access to the Green-park from Park-place, St. James's-street, always open to the public: it was a solace to the inhabitants of St. James's-square, Pall-mall; and, indeed, to thousands of others migrating by St. James's-street to the Hyde. It has been closed for several years; the privilege of *entrée* being reserved only to a few who may have gained the ear of the Woods and Works, and the key of favour.

Now, small easements are sometimes of great value—more useful, if not more prized, than broad concessions. How could the multitude dispense with the little duct at Spring-gardens?—or what might be the effect of a foreclosure of the alley (locked one day only in the year) leading from Curzon-street to Dover-street?—why St. George's, Hanover-square, would be in open mutiny!

There was in the declining years of the poetical banker, Sam Rogers, some little tumult, occasionally, in the wicket passage adjoining his house. Numerous



and pertinacious wandering hours were wont to waylay and assail the benevolent old man on issuing from, or returning to his door. He never resisted their clamours, which he daily bought off with golden arguments; but they haunted the wicket passage, in which a single amazon might defy the whole St. James's police. Authority might then have interposed to check scenes so indecorous; and so the public use of the way was obstructed; but now that the poet is safe from these troubles, surely the luxury of a short cut to the people's parks might be thrown open to valetudinarians, nursemaids, children, and innocent idlers seeking an escape from noisy streets. The number of inhabitants is vastly swollen; the parks are beautified and much more sought after: officials are, or seem to be, more studious of the health and welfare of the people—why, then, cannot this strait and narrow way be opened? PERAMBULATOR.

#### CHURCH-BUILDING NEWS.

**Cambridge.**—The ante-chapel of Trinity College is to be adorned by a statue of Dr. Barrow, the celebrated theologian and divine, who was formerly the Master of Trinity. It will be the work of Mr. Noble, to whom the commission has been given by the Marquis of Lansdowne.

**Brantree.**—The repairs and restoration of Brantree Church are in progress. The roof has been completed, under the superintendence of Mr. Pearson, of London, architect; and a new porch is in course of formation. The edifice will afford additional accommodation to about 100 persons. The repairs of the chancel, which are much needed, rest with the owner of the great tithes.

**Bedford.**—The subscription for a memorial to the late Mr. Isaac Hurst having been closed, it was determined to apply the proceeds towards the erection of a monument over his grave in Bedford Cemetery. A design was placed in the hands of Messrs. Miller and Son, of Bedford, who have carried it out, and the monument has been completed and placed in the cemetery. The design was taken from the ancient monument in Iona, known as Maclean's Cross, which was constructed of whinstone, but the new monument is cut from a single block of Sicilian marble. The form is by some regarded as a Saxon cross, and the original is supposed to have been contemporary with St. Columba, and the oldest monument in Iona—probably the oldest Christian monument in Scotland. The marble shaft of the cross is 9 feet 4 inches in height; the pedestal, a piece of Portland stone, is 2 feet 1 inch in height; and the whole rests on a large York landing 8 inches thick. The shaft is carved on the front and back. On the side of the pedestal facing the south is the inscription.

**Felmersham.**—The old church of Felmersham, which has just undergone an extensive restoration, was re-opened on the 17th ult. It has had a new roof, new seats, and new windows: some of the latter are of stained glass, with symbolical figures and various emblems. Some of these windows are the gifts of persons at Felmersham and neighbourhood. The floor has been raised and re-laid, and improvements made in the churchyard. The expense of the work of restoration, exclusive of the windows, and the repairs of the screen, which cost 707, amounts to about 1,200, nearly 1,000, of which have been raised by private subscriptions and pecuniary rate. The stained windows are the work of Mr. Clutterbuck, of Stratford.

**Lindfield (Brighton).**—The foundation-stone of the new Congregational Chapel was laid here on the 21st ult. Messrs. Hubershon are the architects. The estimated cost of the chapel and schools is 1,200, of which 800, have been subscribed.

**Landford (Wilt).**—The Dowager Countess Nelson has contributed 1,000, towards the erection of a new church at Landford, the old edifice having been taken down and removed, in consequence of general dilapidation, and not affording sufficient accommodation for the inhabitants. The new building is to afford seat room for 129 adults and 54 school children, the population of the parish being about 250. The estimated cost of the edifice is 1,400.

**Wedgebury.**—King's-hill New Wesleyan Chapel was opened on the 22nd ult. The building, which is of the Romanesque style, measures, in the clear of the walls, 66 feet by 42 feet, with vestry at back, 16 feet by 12 feet, over which is an orchestra of elliptical form, to contain an organ at some future time. In the centre of an arch is a keystone, on which is carved an angel in relief. The height of the building from floor to wall plate level is 24 feet. The roof is of open framed work, stained and varnished. The interior is fitted up with circular framing, rising from the floor in amphitheatre style, lightly stained and varnished. In lieu of a pulpit, a platform is constructed 16 feet long, elevated 3 feet above the floor. The windows have margins of stained glass, the two over the communion being filled in with

ornamental embossed glass. The chapel is lighted with gas, from six standards, each bearing twelve lights, with crown and other ornaments of burnished brass work of the Mediaeval period: there are other branches from the walls. The architects were Messrs. William and Samuel Horton, of Wednesbury. Messrs. Trow and Sons, also of Wednesbury, were the contractors; Mr. S. Jellyman, clerk of the works. The total cost, including the purchase of land, gas fittings, ornamental pelisades at front, and architect's commission, was 1,700.

**Clifton.**—The tower of Clifton parish church is about to be rebuilt.

**Chelford.**—A new chancel to the parish church of Chelford having been erected by Mr. John Dixon, of Astle Hall, it was resolved by his tenants and neighbours to obtain for its large east window one of painted and stained glass, and the work has just been completed by Messrs. R. B. Edmundson and Son, of Manchester. The principal subjects are the Birth of the Saviour, the Crucifixion, and the Ascension; there being underneath each a figure of a kneeling angel bearing a scroll. The upper part of each light is filled with canopied tracery, and the Agnus Dei occupies the centre of the head of the window. The prominent colours throughout are ruby, blue, and yellow, with various tints of these and other colours.

**Whittington.**—The foundation-stone of the new Wesleyan church, at Whittington, near Cheshire, was laid on the 23rd ult. The edifice is expected to accommodate 300 people, and it has been originated by working men, who have been supported by the employers of labour at Whittington.

**Holbeck.**—On the 23rd ult. the Bishop of Ripon consecrated that portion of the Holbeck cemetery set apart for the burial of members of the Church of England. The whole of the cemetery, which is situated on the top of Beeston-hill, covers an area of 11 acres 2 roods. The division between the consecrated and the unconsecrated portions of the cemetery is marked by small granite pillars, placed at distances of ten yards.

**Stockton.**—The foundation-stone of a church for South Stockton and Thornaby was laid on the 22nd ult. by Mr. G. Gilpin Brown. The church is to be erected in a field given by the Earl of Harewood, situate opposite to the Stafford Pottery.

**Carlisle.**—The place of worship in Lowther-street belonging to the Wesleyan Methodist Association, which has been rebuilding, was reopened on the 20th ult. The exterior of the building, says the local *Journal*, is a great improvement upon the old one. The style of the front is Early English, and is divided into three parts, a centre and two side wings. The chief window is in the front, and consists of five lights, glazed with ground and stained glass. There are two principal entrances, one in each side wing, and each of the porches is lighted by a two-light window above the entrance. At each angle of the front there is a buttress crowned with a roof-shaped canopy. The front rises in a pyramidal form. The interior is also improved. Some parts of the old work remain, although altered in arrangement. The ceiling is supported on two ranges of pillars, its central portion curved and ribbed, and the sides rather inclined from the horizontal. In the centre is an elliptical dome-light of plain and stained glass. The improvements will cost about 500, and have been carried out under the superintendence of Mr. John Hodgson, architect.

#### PROVINCIAL NEWS.

**St. Alban's.**—The new corn exchange here has been completed, and was formally opened on the 23rd ult. The building is a light structure, 74 feet long, 21 feet wide, and 26 feet high. It is lighted with gas, by two sun-burners let into the ceiling. The light is diffused over the building by enamelled iron reflectors. The total cost of the building, exclusive of the lighting, is between 1,400, and 1,500, 1,200, of which were raised by subscription: 350, have been borrowed by the corporation.

**Dudley.**—New County-court buildings are in course of erection in Priory-street. Mr. Charles Reeves, of London, Surveyor of County Courts, is the architect, and Mr. Burkitt, of Wolverhampton, and Mr. Nelson, of Dudley, are the contractors. The building is in the Italian style, with stone front. On the ground-floor will be the public offices and other rooms, which will be 15 feet high, over which will be the court for the hearing of causes, extending the whole length of the building, and 57 feet long, 28 feet broad, and 26 feet high.

**Kidderminster.**—A new banking-house for the Storrbridge and Kidderminster Banking Company has recently been erected in Church-street, Kidderminster, beside the post-office. It has a front elevation 34 feet in height by 33 feet in width. The materials are stone and brick, and the building has pilasters, cornices, and carvings. The windows are of plate glass,

with bullet-proof shutters. The architect is Mr. Thomas Smith, of Stourbridge.

**Clifton.**—Colonel Serrell, an American engineer, of considerable reputation, says one of the Bristol papers, has lately revived the Clifton suspension-bridge project, and is now in this city, making an engineering investigation, aided by a local engineer, Mr. Ashmead, with a view to the commencement of the work. The work, it is said, can be completed at a comparatively small cost. The existing piers cost 45,000, but the old bridge committee are said to have agreed to make them over for 2,000, and take the amount in shares, the mode in which the necessary capital will be raised. Colonel Serrell, after examining what is done, has offered to complete the structure for 17,000, asking for no money till it is finished, only stipulating that the requisite shares shall be paid up, so as to secure him his money. He will return in the spring if called upon to do so.

**Burnham.**—The *Bridgewater Times* announces the laying of the foundation-stone of the new pier here by Mr. G. Reed, the founder of the Burnham railway and new pier.

**Plymouth.**—The corporation of this town have resolved to obtain plans for a new Guildhall by competition, and to proceed to its construction, according to the plans approved of, as they may find it convenient to lay out the money, so as to rear the building by degrees. A councillor suggested 20,000, to 25,000, as sufficient for the purpose.

**Cardiff.**—Such has been the demand for houses in Cardiff of late years that not a foot of ground is to be obtained whereon to build between the Glamorgan-shire Canal and the West Butte Dock, and the profits realised from the tenements, according to the *Guardian*, from which we quote, is in many instances as high as 15 per cent. In the neighbourhood of Canton also almost all the ground belonging to the Freehold Land Society has been taken, and villas are in course of erection, several streets are formed, and building is progressing with rapidity in every direction. A street has been formed, called the Cathedral-road, from the West Turnpike-gate across the fields as far as the Halfway-house at Pont-y-naun, and which will in all probability reach as far as the city of Llandaff. On the Roath side of the town houses are also rapidly built, and the Splott and Adamsdown bid fair to be surrounded shortly by a large suburb, as nearly 100 houses are in course of erection on the Splott estate. Two streets have been made diverging from Pluccane to the east, known by the name of Milton-street and Shak-peare-street. Towards the north of the town also building is being carried on. There is scarcely a shop in the principal streets that has not been made more capacious: a larger town-hall has been built, more market accommodation required, additional docks have been constructed, and more are in course of construction. A viaduct, extending from the Rhymney Railway to the Taff Vale side of the East Butte Dock, is now in course of construction, along the whole length of Tyndal-street. The first stone of a new building here, for the Young Men's Christian Association, was laid on the 24th ult. The cost of the building was estimated at 1,180, exclusive of 300, for fittings. The architects are Messrs. Hubershon. Mr. Daniel Jones, of Cardiff, is the builder.

**Shrewsbury.**—At a recent meeting of the local Improvement Commissioners, according to the *Chronicle*, the suggestion of Mr. Edward Jeffreys for the erection of a bridge over the Severn to Kingsland, and a market near the Crescent, was taken into consideration, and the merits of the design discussed. Other plans for a new market were also placed before the commissioners, including the site at the top of Pride-hill, top of Wyle-cop, and Mardol-head. It was ultimately resolved that a report should be presented to the council at their next meeting, upon Mr. Jeffreys's plan, and generally as to an improved communication over the river, and also as to a new market.

**Warrington.**—A local council was held here lately to consider the report of the paving and sewerage committee, recommending the immediate adoption of the scheme of Mr. Coxon, the borough engineer, for sewerage of the borough, &c. The report on the sewerage describes the existing sewers as bad beyond all previous conception, with little or no inclination; large sewers flowing into smaller ones; the sewage finding its way freely into houses and cellars (which are below the level of the sewers), and the deposit emitting poisonous gases. The form of all the sewers is a broad square with a flat bottom, with an average deposit of 9 inches of solid filth,—in many 18 inches, and others entirely choked up,—and 700 to 800 tons of this filth in the sewers, though there are only about five and a half miles of sewers in about twelve miles of streets and courts. The report of the paving and sewerage committee was unanimously adopted, and instructions resolved to be given by the council for the immediate commencement of the proposed scheme. The cost was estimated at 10,000, which would increase the rates 4d. in the pound.



**Dorington.**—The new bridge in Priestate, Dorington, crossing the Skerne, says the *Gateshead Observer*, has been washed away. It was not out of the hands of the contractor.

**Carlisle.**—A brick building for a theatre is to be erected here shortly, in the Botcherby-road.

**Hawick.**—A meeting is about to be held at Hawick to consider as to the plans and specifications of a new town-hall.

**Dunfries.**—The members of the Dunfries Mechanics' Institute, according to the local *Courier*, have decided upon building a hall, capable of accommodating an audience of 1,200 persons, on the garden ground in Nith-place, behind their present premises.

**Bathgate.**—The foundation-stone of a corn-exchange has been laid here.

**Pannure House.**—As we noticed some time since, Pannure House, one of the seats of Lord Panmure, has just been almost rebuilt, newly dressed up in front, and the interior entirely gutted and renewed. This latter part of the work was executed by Messrs. Wm. Thomson and Co. builders, Stirling. The building is five stories in height, and, including the wings, 500 feet in breadth. A considerable drawback to the elegance of the interior is, that the floors are in the same places as in the old edifice, thus rendering the ceilings of all the principal rooms ridiculously low; and, in the case of the large dining and drawing rooms, giving a feeling of oppression which is disagreeable, and doubtless something more to those who may be honoured with a long sojourn in them. The whole of the woodwork throughout the edifice is new. The mason work of the mansion was executed by Mr. Morrison, of Edinburgh.

**Bridge of Linn of Dee.**—The ceremony of the opening of this bridge by her Majesty took place a week or two ago. The builders were Messrs. John Fraser and Son, of Aberdeen. The arch is a Gothic one, with embossed parapets of dressed granite from the district. The designs were furnished by Messrs. A. and W. Reid, of Elgin, architects. The approaches to the bridge have been all reconstructed, and ornamented with shrubbery, faced with larch railings on both sides, and painted white. The position of the new bridge fully commands the romantic scenery of the Linn, which was formerly very much concealed by the old one.

#### FOREIGN INTELLIGENCE.

**Hanover: New Streets.**—This German town is shedding, as it were, its former appearance. The northern part of the town has been already transformed into a new town, and now the west end is to be similarly changed. A long street is projected, which will pass over the filled up ramparts, and terminate at the great railway station. The street is to be 100 feet broad, with an avenue of trees 16 feet wide, leaving room for a railway, connecting two of the principal roads of Hanover, &c.

**Berlin: a Huge "Dom."**—It is contemplated to build in the Prussian capital, a cathedral, which should be the St. Peter's of Protestant Germany. The style of building is not yet decided upon, but the estimates are laid down at several millions of thalers.

**Cologne: City Museum.**—There is a permanent committee sitting here for the purchase of art objects. They have offered the widow of the celebrated painter, M. Begas, 1,000 thalers for his portrait, and some cartoons, &c. For the sake of the large excavations for the foundations of the permanent bridge over the Rhine, the very ancient Frankenthurm has been demolished, by which Cologne loses one of its old city tokens. The statues have been carefully deposited in the Wallrafmuseum. This destruction is much to be regretted.

**Reserved Seats in the Alps.**—The barefaced graspingness of the age manifests itself in the fact, that enclosed galleries have been erected in many of the finest localities of the Bernese Oberland, &c. whence only certain cascades and other fine sights can be viewed. By the erection of these sheds the *genius loci* is completely expelled from these charming localities.

#### THE EGYPTIAN STATE BEDSTEAD.

PERHAPS the only way in which, with our Western ideas, we may be able to appreciate the feeling which prompts an Eastern ruler to convert silver or gold into bedsteads, is the consideration that in all probability the taste for such articles is a remnant of ancient Egyptian magical rites, in which "the sacred sleep" of enticement took place on "the beautiful couch" of the reposing god; or, as in the magical rites of Babylon (alluded to some time since in the *Builder*), in the "elegant bedstead" of which Herodotus speaks, and wherein the entranced or "God-possessed" lay in state, to be consulted as an oracle. It may even be a question whether our own stately British royal or state bedsteads be not a vestige by implication of similar ancient and pagan rites, practised as they were by the

British Druids. I recollect, by the way, of reading some time since, in the *Asiatic Journal* of Bengal, of an elegant carved bedstead, found in a royal tomb in the place where a coffin would be usually placed. Perhaps even such a practice as this may have had some relationship to the same rites of which the Egyptian *ankh* and "beautiful" bedsteads would seem to be a remnant; especially considering that the enticement on the "beautiful couch" or "elegant bedstead," was a symbolical death through which, at one time, all the initiated had to pass, as a nightly or "daily death," which would supersede and conquer "the last enemy," and immortalize, as well as illuminate the initiated "twice born," or regenerate. As regards the "elegant bedstead" in the temple at the top of the tower of Babel, at Babylon, I have an impression that it was of gold, but I have not Herodotus at hand here to refer to. J. E. D.

#### EXHIBITION OF ART TREASURES AT MANCHESTER.

It is now definitely fixed that the last day upon which the Exhibition will be open is the 17th of October, and on the 19th will be commenced the work of restoring to their generous owners the valuable treasures which have afforded instruction and gratification to about one million of our population. These works of art should return to their proprietors with enhanced value, from having been appreciated and enjoyed by so many, and the grateful good wishes of thousands of hearts will attend them on their return to the mansions of royalty, of the nobility, and the gentry of our land. Such an occasion proves the genuine sympathy which exists in England between all classes of the community, and goes far to strengthen good feeling and kindly consideration for each other. Those who confer and those who receive generous sacrifices are equally benefited, for, like mercy, such noble generosity

"is twice blessed";

It blesseth him that gives, and him that takes."

The following is a general statement of the numbers of persons who have visited the Exhibition, during the last few weeks:—

Working Friday, 11th September ...	56,396
do. 18th " ...	67,479
do. 25th " ...	63,326

On Saturday, 26th, there were 10,907 persons; on Monday, 13,664; and on Tuesday last, 11,198. Should the number of admissions daily increase, as they seem to be doing, there will in probability be no difficulty to be made up by the guarantee subscribers.

#### ELECTRO-TELEGRAPHIC PROGRESS.

It now appears that the telegraphic announcement of the successful laying of the Mediterranean line was not quite correct, the cable having fallen short by about twelve miles, and the end of it actually lost, although a buoy has been placed as an indication of its whereabouts, till a drag, which has been invented for the purpose, be used in fishing it up, if it can be got hold of. Surely, the end of the cable ought to have been beforehand so connected with a buoy as to allow of its being got again in the event of its running out too soon. Failing the drag, could not the cable, as laid down, be simply overrun by means of a rope and a ring, till the over-running vessel arrived within lifting distance of the lost extremity? Might not the lost end of the Atlantic cable also be thus fished up again, and 30,000*ft.* saved by the simple process? The Atlantic cable is to be stowed away in the Government dockyard at Keyham during winter, and carefully overhauled and tarred. The company are said to be haunted with hundreds of designs for laying the cable, and for improving the machinery for that purpose; and since the commencement of last month numerous applications have been made for patents in connection with machinery for submerging submarine cables. The portion of the Mediterranean Extension Telegraph Company's cable already completed, consisting of 582½ miles, has been tested at Birkenhead, by Mr. H. V. Physic, telegraph engineer, and Mr. Andrews, superintendent to the Mediterranean Company. The new line will connect Cagliari with Malta and Corfu, and the entire length to be manufactured will consist of nearly 1,000 miles. The Messrs. Newall, by whom the cable is being made, expect to finish the work by the middle of October, and the whole line will be submerged by the end of that month. The cable consists of a single conducting wire, with an outer protective sheath of iron wire; but the outer wires, unlike those of the Atlantic Company's cable, are not subdivided into a number of small filaments, but each strand is a solid mass and distinct in itself. A French paper states that an immense telegraphic line is about to be commenced, starting from Marseilles, extending to the islands of

Hyeres, thence to Corsica, and from island to island until it reaches Constantinople. It will thus unite to France the whole of the East. The line which is to unite Marseilles to Brest is to be finished in less than a year, on the 1st of July, 1858. This gigantic undertaking has been conceded to M. B. Lestrelin.

#### REPORT ON RAILWAYS.

THE report of Captain Galton to the Board of Trade, on the railways of the United Kingdom for 1856, has just been issued, and is calculated, on the whole, to strengthen the hope that, with improved management, the recovery in the value of this description of property will be steady and continuous. Notwithstanding that the pre-rental and loan capital constituted 43 per cent. of the whole of the railway capital raised to the end of 1856, and that the interest payable on this, owing to the state of the money-market, was higher than during any former period, the per-centage having been 5.08 against an average of 4.72 for the preceding seven years, the average rate of dividend available for the ordinary share capital was 3.12 per cent. being equal to that of 1855, and considerably higher than the average of the preceding seven years, which was 2.59. In 1854, however, the rate was as high as 3.30. Of the total 308,775,894*l.* now embarked in railways, 77,359,419*l.* have been raised by loans, 57,037,171*l.* by preference shares, and 174,359,304*l.* by ordinary share capital. This represents an expenditure of 35,459*l.* per mile, the cost of the English lines having been 40,288*l.* per mile, of the Scotch, 27,750*l.* and of the Irish, 11,057*l.* The period of extravagant outlay, however, was prior to 1819, the average cost of lines constructed since that period having been only 9,564*l.* per mile. The working expenses last year experienced an increase of 1 per cent. in England, and a diminution of 2 per cent. in Scotland and Ireland, the average being 47 per cent. as compared with 48 per cent. in 1855. The development of the goods traffic has gone on upon a rapid ratio, and its proportion to the passenger traffic is now 53 to 47 per cent. whereas eight years ago it was only 44 to 56 per cent. The total of passengers conveyed in 1856, was 129,317,592, being an increase of 10,752,457 on the previous year; and the number conveyed per mile of railway open was 15,213 against 14,503 in 1855, the receipts per mile being 1,194*l.* against 1,164*l.* The general effects of the raising or lowering of fares are detailed, and the result appears to be against the policy of high charges. The length of line open for traffic in the United Kingdom on the 30th of June, 1856, was 5,866 miles; and the persons employed amounted to 102,117, or twelve per mile. There were also 963 miles in course of construction at that period, of which about 205 were opened before the end of the year. The whole are double lines, excepting 2,511 miles. Between 4,000 and 5,000 miles authorised by Parliament remain to be constructed. The total will then be 13,173 miles, namely, 9,700 in England and Wales, 1,647 in Scotland, and 1,826 in Ireland.

#### THE ARCHITECTURAL UNION COMPANY.

YOUR kindness in giving insertion to my letter of last week, emboldens me to furnish further particulars of our progress, feeling sure that they must interest very many of your readers.

As a proof of the steady advance making, I append a list of shareholders who have joined the company since Sept. 4th, up to which time a list was made public; and of these Mr. Thos. Grissell, Messrs. Lucas, Mr. C. H. Smith, and Mr. A. Waterhouse (Manchester), are donors to the auxiliary fund—the latter specially in favour of the Architectural Exhibition;—and from this fund alone it is probable that some 70*l.* or 80*l.* a year at least will be available, to be permanently applied for the advancement of architecture.

It is certain that this undertaking cannot now, and must not, fall to the ground; still the total capital is not much more than one-half promised, and the directors will be obliged to borrow the remainder, unless more help is afforded. Surely the profession will not permit this; it will be strange indeed if the burden is to fall upon the few, when the good of all is equally considered. It seems the more unnecessary, when it is remembered, as has been observed before, that if the whole 15,000*l.* share capital is subscribed for,—as only about two-thirds, or a little more, of that sum are required to be expended; and if the directors borrow, as they would then be able to do most legitimately, a portion of this sum, really some 6*l.* or rather less per share, is all that would be wanted; and the whole would be done easily, instead of by taxing all the cheerful givers to the utmost.

I hope that every shareholder—and they now number more than a hundred—will feel this, and will exert himself among his friends, so that the greater portion, at all events, of the shares now in hand may be allotted before the next meeting of the directors.

With the certainty of a fair return for the money invested, the most prudent need not hesitate to invest with the knowledge also that this is no bubble speculative scheme, but one of the simplest character in its operation, and which can bring to unknown losses to those who may join it. How can a member of the Institute, any supporter of the Architectural Exhibition, or any one, indeed, with any love for the art, or who is interested in its well doing, directly or indirectly, be excused for looking coldly on, if he has the means to afford a practical aid?

J. EDMESTON, Jun. Hon. Sec. A.U.C.



List of additional shareholders who have subscribed for shares since September 4th:—

Messrs. E. N. Clifton, H. Dowson, R. J. Withers, E. Nash; Lucas, Brothers (donation fund); G. E. Magnus, or double if required; C. F. Hayward, A. Waterhouse, Manchester (donation fund), to be applied to Architectural Exhibition; G. Gutch, J. P. St. Aubyn, T. H. Lewis, Jno. Dwyer, Thos. Jackell, C. N. Cumberlege, W. A. Boulnois, G. Goldie (Sheffield); Wm. Taylor, Thos. Grissell (donation fund), Charles Hart, C. H. Smith (donation fund), E. Roberts, W. D. Griffen, G. Devey, J. Peacock, H. Baker, R. R. Banks, F. W. Porter, H. R. Abraham, W. R. de Havilland, J. and C. Tanson, and James Lockyer.

#### ISLINGTON NEW VESTRY-HALL COMPETITION.

Sir.—The columns of the *Builder* frequently contain many valuable suggestions for the government of competitions, seldom producing, however, apparent good results, very few competitions indeed being entered upon in a spirit likely to give satisfaction to any parties concerned, as the choice is too frequently made through interest, partiality, or other causes, rather than upon the merits of the design.

As the time for sending in designs for the above hall is at hand, I would beg to urge upon the Vestry the desirability of obtaining the assistance of a properly qualified professional gentleman or two (unknown to the competitors), who shall carefully examine the designs submitted, and the choice is too frequently made through interest, partiality, or other causes, rather than upon the merits of the design.

It is universally acknowledged that professional advice is essentially required for the selection and adoption of the best decision, and if acted upon (otherwise it is only a sham), will produce beneficial results.

If, then, the vestry will pursue the course here suggested, with the desire for the selection and adoption of the best design (which in justice they are bound to do), it will prove more satisfactory to the competitors, and better for themselves, as they will thereby have really the best design, and thus prevent the occasional occurrence of those marks which too often, and alas! too justly, follow the decisions of competitions. A COMPETITOR.

#### Books Received.

"Drawing for Elementary Schools: being a Manual of Method of Teaching Drawing, specially adapted for the Masters of National and Parochial Schools: published under the sanction of the Science and Art Department of the Committee of Council on Education." 8vo. pp. viii.—65: cuts. By ELLIS A. DAVIDSON, Head Master of the Chester School of Art, and Professor of Drawing at the Chester Diocesan Training College. London: Chapman & Hall.

This is a very concise hand-book—intended less for the ordinary student than for the masters of schools of general education, who may not have had the advantage of systematic instruction themselves, but who still see the desirableness of introducing drawing into their establishments. To such persons the methods of tuition are succinctly pointed out, as well as the means by which they may instruct themselves. Thus the best methods of placing the pupils opposite the black board, marking out the copy from the example, inspecting the work, explaining the nature of the subject, and interesting the pupils in their labour, are pointed out. It is pleasing to find that the home practice of the pupils of the Chester School has been the means of interesting their parents also in the acquisition of drawing as a desirable accomplishment. The examples supplied in the work, and suggested for delineation, are chiefly the forms of the most familiar objects, as capital letters, tools, wooden gates, stables, fire-irons, and leaves. This selection is judiciously made; but in some of the examples, very important details of form are omitted,—so that the selection could perhaps be further improved, in order that accuracy, and in many cases also inappreciation of beauty or fitness, might be avoided. But we recommend the work for the purpose for which it is intended. The production of a considerable number of good books of the same kind testifies to the progress which is being made.

"Ornamental Drawing and Architectural Design; with Notes, historical and practical. Upwards of 200 Illustrations." 8vo. pp. 122. Edited by ROBERT SCOTT BURN, Editor of the "Illustrated Drawing-Book," "Mechanics and Mechanism," &c. &c. London: Ward and Lock.

This work appears to belong to the series commenced by the late publishers with a re-issue of the "Illustrated Educational Works." It is lately published from the Office of the "Illustrated London News." A distinct claim on our attention to the "new editions" is made by the announcement that they "have been most carefully revised, and in their present state arrive as near perfection as possible, and by the printed opinion of one of her Majesty's Inspectors of schools, who will 'not fail to recommend them' in pursuance of his duties. We are placed in some difficulty in the case of popular works of this class, which seem to offer at a low price, abundant matter, not to be obtained with the same facility otherwise,

but which put forth some errors such as it may take much time to unlearn. The profuseness in illustrative cuts, which is desirable for the student, involves trouble in editorship, added to the ordinary duties as connected with the literary matter; and it is seldom that the supervision of draughtsmen and printers is what the case should demand.

As regards the work now before us, we are sorry that it is not to be held quite free from imputation on grounds above referred to. The gentleman whose name is placed on the title page, who is known as an industrious compiler and author of works on kindred subjects, can hardly have been allowed to give the full benefit of his exertions.

At the opening page, the two first diagrams are transposed; the engraving, as in the profiles of mouldings and in the ornaments of the Greek orders, is such as is calculated to mislead the student who may endeavour to make copies at large: at the last page, the Italian trusses are quite out of drawing; and much of the Gothic tracery is drawn, as to miles and cusps, so as to tend to misconception of the peculiarities of detail in the style in question. "Indian Architecture" should have been noticed with a reference, however slight, to a Mahomedan as well as a Hindoo style: we apprehend it is neither correct to date the Saracenic architecture from the time of Mahomet (seeing that it is doubtful whether, before they became acquainted with Greeks, the Arabian artists had much art), nor to speak of the "Renaissance" style as having for its masters, San Gallo, Palladio, Perrault, and some others; and the doorway, figure 184, is not Elizabethan, but pure Italian. We ourselves, notwithstanding, have derived interest from the book,—though it lays "no claim" to be considered as an exhaustive treatise, or on the score of "any originality in its arrangement and matter." It is put forth as "an attempt to embody a series of lessons, and of historical and practical notes, culled from various authorities, which may serve as the groundwork for more complete and elaborate practice, and form an incentive to the systematic study of the principles and practice of decorative and constructive art." The work has three divisions. Of these, the first division shows the method of delineating ornament in which right lines, or segments of circles, or free curves may be chiefly met with, and gives a few illustrations of ornament from tile-pavements and textile fabrics, with quotations from various authorities on the principles applicable to such designs: the second division gives very short notices of the chief styles of architecture; and the last division supplies a few examples of reduced plans, working drawings, and details. Paying regard to the reservation we have made, the work may afford useful information, and it is obtainable at slight pecuniary cost.

#### Miscellaneous.

FAIL OF A HOUSE AT BILSTON.—On the 22nd ult. a house in Lester-street, Bilston, fell to the ground. The cause was one not unfrequent in this district, the subsidence of the ground from mining operations. The occupant was badly bruised and cut about the face, but no other personal injury was sustained.

WEST-END TERMINUS.—Sir: Lieutenant-colonel Pottinger is not correct when claiming to be the first to suggest the Grosvenor canal and basin as the site for a West-End Terminus. One of the present promoters, Mr. Thomas Jackson, as long since as 1845, had surveys and drawings made for the same, which are now in his possession; and had it not been for the panic, which occurred immediately after that time, a West-End Terminus would have been erected on the proposed site years ago.—W. JAMES.

THE WELLINGTON MONUMENT.—I perfectly agree with Mr. Perkins that something should be done to prevent the Wellington models being lost to the nation, by being buried in the studios of the different artists. Doubtless the Crystal Palace would in some respects be a good depository for them; but it is a question whether many of the competitors would like to incur the expense of conveyance thereto; and as for making an additional charge for viewing them there, that would, I think, mar its success, much less raise a sum at all adequate for the purchase of them. *En passant*, would not the preservation of these models constitute a very good memorial of the Duke? To accomplish this, a large fund would be required, which could only be raised by subscription. I am rather surprised this matter has not already been taken in hand by some of the influential sculptor competitors. The members of the Sculptors' Institute seem very quiet about it. Suppose they called a meeting at their rooms to elicit the opinion of the several artists, who probably some of them might be adopted for the above purpose. Perhaps they are waiting the final decision of the Chief Commissioner. E. G. PHYSCHE, Secn.

TASTE AT HALIFAX: THE PROPOSED PUBLIC BATHS.—It is intended to expend the sum of 1,500*l.* in the ornamentation of the suite of baths to be erected in the People's-park, at Halifax. Promises to the amount of 500*l.* have been received by the committee having charge of the matter, and arrangements are being made for a thorough canvass of all the inhabitants of the borough, as it is considered desirable that the amount should be made up not from large sums alone, but from the small contributions of the humblest. The corporation will, of course, erect the baths: the above has reference only to the external decoration of the building.

RAILWAY TRAFFIC.—The traffic returns of the railways in the United Kingdom for the week ending Sept. 19, amounted to 518,798*l.* and in 1856, to 499,683*l.* showing an increase of 19,115*l.* The gross receipts of the eight railways having their termini in the metropolis, amounted to 214,695*l.*; and last year to 213,491*l.* showing an increase of 1,204*l.* The increase on the Eastern Counties, amounted to 1,577*l.*; on the Great Northern to 115*l.*; on the Great Western to 1,287*l.*; on the North-Western to 1,043*l.*; total, 4,003*l.* But from this must be deducted 86*l.* the decrease on the Blackwall; 343*l.* on the Brighton and South Coast; 1,124*l.* on the South-Western; and 1,145*l.* on the South-Eastern. The receipts on the other lines in the United Kingdom amounted to 304,103*l.* and for the corresponding period of 1856 to 286,192*l.*; showing an increase of 17,911*l.*

ARTIFICIAL LEATHER.—Mr. F. Charles Jeune, Gresham-street, City, has provisionally secured an invention for producing an elastic material having the appearance of patent leather, but not liable, like it, to crack or peel on the surface. He prepares an elastic compound, composed of masticated india-rubber, or india-rubber combined with gutta percha, and mixed with sulphuret of antimony and woollen dust or waste. This compound, which forms the base of the fabric, he spreads upon thin cotton cloth, and then subjects the same to heat, in order to effect what is called the "change" in the india-rubber compound. The fabric is then ready to receive japan varnish, which is laid on in the usual manner, and subjected to a dry heat: when the first coat is properly set a second coat is applied, and submitted in like manner to a dry heat, and so on, until the required finish or smoothness is imparted to the face of the fabric.

COATING IRON WITH METALLIC ALLOYS.—Mr. Joseph Poleux, according to the *Scientific American*, has patented, in the United States, an invention for preparing iron to receive the coating, by immersing it in concentrated mineral acids. As soon as the articles to be cleaned are immersed in the acid, one, two, or more small pieces of spelter are dropped among them, or the spelter is passed into the acid with the articles. The acid acts at once and rapidly on the spelter, holds in solution what it dissolves, and precipitates the film of it on the minutest portions of the iron surfaces the instant the acid has cleaned them, and this film protects such portions from any further action of the acid while remaining in it. The articles are next taken out; and, without being washed, dried, or undergoing any other treatment whatever, are passed immediately, though slowly, into the bath of melted alloy that forms the coating.

A NEW MODE OF APPLYING MR. BESSEMER'S INVENTION.—Messrs. T. Brown and G. Parry, Ebbw Vale, Monmouth, propose a mode of refining, purifying, or decarbonising melted cast iron by means of currents of air, in a covered or partially covered furnace, without coal, or other fuel. The metal being in a melted state (preferred from the blast furnace as being the most economical), they run it into a chamber or furnace, which is closed so as to prevent the temperature of the contents being too much lowered. They introduce air tuyeres from a blowing apparatus into the interior of the chamber above the level of the melted iron, and in such a position that air shall be blown down with considerable force upon the top of the melted metal, so as to produce a combustion of the carbon combined or mixed with the iron. The blast may be either hot or cold, and they continue the process until the iron has been brought into a state similar to that called fluey metal, or refined iron.

IRON SHIPBUILDING ON AN EXTENDED SCALE.—A model of a steam-ship, on a far more gigantic scale than the *Great Eastern*, has been exhibiting in Liverpool; and, if all the excellent qualities ascribed to it be accomplished, the ship will outstrip both it and all others that have been yet constructed, both in the rate of speed, internal accommodation, and safety. It is alleged that a ship built upon the principle of the model, of 39,000 tons, 1,000 feet in length, breadth 70 feet, depth 30 feet, would reach India in about 25 days. It is also contended that when ready for sea she would not draw more than 20 feet of water. The projectors will, doubtless, wait a bit till they see how the *Great Eastern* gets on.



**OPENING OF THE MIDLAND INSTITUTE AT BIRMINGHAM.**—Lord Brougham has consented to preside at the opening of the Theatre of the Institute, in Paradise-street, Birmingham, on the evening of Tuesday, the 18th of October. It is proposed that the certificates and prizes now being awarded to the students of the Institute, be distributed that evening publicly by Lord John Russell and Lord Stanley. The members of the Institute, the pupils of the National classes, and such of the members of the National Association for the Promotion of Social Science as are non-resident, will be admitted to the ceremony.

**MACHI TESTIMONIAL.**—About ninety friends of Mr. Sheriff Machi dined together at the London Tavern on the 22nd ult. to present him with a testimonial in appreciation of his exertions to promote the interest of agriculture. The testimonial consists of a centre table ornament in the Renaissance style, of massive design. There are figures of Agriculture, Commerce, Peace, and Plenty, seated upon a platform, supported from the basis by a centre column, decorated with agricultural produce. There are eight branches for candles, and the centre is fitted with a lamp. The design was presented by Mr. Digby Wyatt, and the plate has been manufactured by Messrs. Smith and Nicholson, of Duke-street, Lincoln's-inn-fields. The plate weighs 500 cwt., and cost 400 guineas. The testimonial bore a suitable inscription.

**ANTIQUITIES ON THE ARRAN ISLES.**—The ancient structures on the main island here were visited when the British Association were at Dublin. The dates assigned to these are from 500 A.C. to 100 A.C.: in other words, they were more than 2,000 years old. They consist of four forts, two of which are circular, called Dun Onagh and Dun Oghill; the latter the most perfect extant. They are built of loose stones without mortar, the main rampart varying in height from 16 feet to 25 feet, and having a thickness of about 15 feet, the ascending steps and the watch-towers on the summit being in some cases still discoverable. The diameter of the structure is about 100 feet, but an outer wall of some solidity encloses a much larger space. The other two forts have taken advantage of promontories, two sides of which are protected by inaccessible cliffs, washed by the Atlantic, and have thrown up ramparts of the like Cyclopean structure, in a semicircular form, to defend the approach from land. Of these Dun-Chathair is the oldest known, and Dun-Aengus the largest and most striking. Behind it the cliffs are 300 feet in height, overhanging the sea. The whole defences occupy about eight acres. Who built these massive works, and what may be their date, is matter of debate and speculation. That they are pre-Christian and pre-historic seems all that is certain.

**VALUE OF LAND AT ALDERSHOTT.**—The Government bought the land at Aldershot for, on the average, 17l. an acre. Instead of erecting the proposed barracks in the centre of the 8,000 or 9,000 acres bought, the engineers pitched upon a spot on the extreme edge of the Government land, and beyond which, of course, the military authorities have no control of any kind. The result is that a swarm of public-houses and beer-shops is hemming in the new buildings, while others are being built, and will of course be accompanied by houses of a still worse description. Of course the land in the rear of the barracks has risen in value more than fiftyfold since the buildings were commenced, and it is said that Government surveyors who came into the market the other day to purchase two acres on which to erect a hospital, had to pay upwards of 2,000l. for what eighteen months ago they would have obtained for 34l.; or have had for nothing, if the site had been chosen in the centre of their own land!

**SMITHFIELD IMPROVEMENTS.**—The plan of the proposed dead meat and poultry markets, prepared by Mr. L. H. Isaacs, the surveyor to the Board of Works for the Holborn district, for the committee for the appropriation of Smithfield as a dead meat market, and which has been laid before the Chancellor of the Exchequer, and by him submitted to the City authorities, comprises several improvements of the streets forming the approaches to the market. Amongst these are the formation of a new street 60 feet wide, from Holborn-bridge to Long-lane, which would do away with the pre-ent circuitous and inconvenient road by way of Snow-hill, and at the same time open up a view of the new structure from Farringdon-street and Blackfriars-bridge. It is also proposed to make Long-lane 60 feet in width for its entire length, and to straighten Smithfield bars and increase its width to the same extent.—*City Press.*

**STRIKES.**—The whole of the masons employed at the railway works and bridges, says the *Forbes Gazette*, have struck work, in consequence of the navvies having precedence in payment.—The Whitehaven shipwrights were to resume work on Monday last, at the wages offered by the masters, viz. 24s. per week.

**GAS.**—At the half-yearly meeting of proprietors in the Bristol United Gas-light Company, it was announced that the receipts for the past year were upwards of 27,000l., and the profits about 8,750l., which enabled the directors to recommend the usual dividend at the rate of 9 per cent. per annum, carrying forward nearly 500l. to the credit of the current half-year. The salary of the secretary was unanimously increased from 400l. to 500l. per annum.—The Kidsgrove Gas-works, at Tunstall, have been completed. At present the gas has only been introduced amongst private consumers. The works have cost about 3,000l.—A new gasometer, said to be the largest now in Scotland, has just been erected at the south back of Canongate, at Edinburgh. It is 37 feet in height, 130 feet in diameter, 390 feet in circumference, and will contain 500,000 cubic feet of gas. For the construction of the gas-holder itself, 120 tons of malleable iron have been employed, and eight tons of the same metal for each of the fourteen columns which support the girders and guide the rollers on the gas-holder as it rises; so that for the construction of the whole 232 tons of iron have been employed. Though five months constituted the period required for its erection, the whole operations have extended over two years. The tank was constructed by Mr. James Bow, of Pollokshields, near Glasgow; the gas-holder by Messrs. Horton, of Birmingham.

**A NEW VIEW OF THE SEWAGE AND THAMES QUESTIONS.**—At the last meeting of the British Association, held at Dublin, Dr. Barnes and Dr. Odling read a paper "On the Condition of Thames Water as affected by London Sewage." The authors had made twenty-five weekly examinations, microscopical and chemical, of the water at high and low tide. From their experiments it appeared that the sewage poured into the river was, for the most part, destroyed by the innoxious processes of oxidation and vital development, and that a very minute proportion only underwent the putrefaction, properly so called. The amount of organic matter existing in the water did not appear to be any criterion of the offensiveness of the water, inasmuch as the greater proportion of the organic matter was in the state of living beings. High water invariably contained a larger amount of organic matter than low water.

**SANITARY IMPROVEMENTS AT WORKING.**—All cesspools and places of deposit for refuse matter have been removed, the whole of the sewage, which was before conveyed into the sea in front of the town, being now carried away by means of a trunk sewer to a long distance eastward. A supply of water of the purest and most wholesome quality, drawn from the chalk strata of the South Downs, at a depth of nearly 400 feet, has been provided on the constant service system. By this water supply, also, the drains are flushed, night and day. In point of health, the town was before ranked by the Registrar-General as the second in the kingdom, and under its present more favourable conditions its salubrity is vastly increased.—*Engineer.*

**OPENING OF A PUBLIC PARK AT LEITH.**—This park was opened by the provost, magistrates, and council, on the 19th ult. in presence of a large concourse of spectators. The provost, in addressing the assemblage, stated that till very recently the Links belonged to the city of Edinburgh, but that the corporation of Leith having purchased them and rented the park, consisting of several acres, resolved, with the view of affording the people an opportunity of amusing themselves in an innocent and rational manner, that the park should be laid out in bowling-greens and cricket-grounds. Two spacious bowling-greens having been completed, they were assembled to celebrate the event.

**NOTRE DAME AT BOULOGNE.**—The statue of "Our Lady" has been placed with great ceremony on the summit of the dome of the new cathedral at Boulogne. All who have visited the neighbourhood have seen this large and imposing structure, which has grown up gradually, chiefly through the efforts of one individual. Some time ago we gave a few particulars of the building, and pointed out that good architectural assistance was wanting. The details are very bad. Beneath part of the cathedral there is a very curious ancient crypt.

**WESTMINSTER ABBEY.**—In the late competition in Westminster Hall, I particularly noticed how little attention was directed to the necessity of completing Westminster Abbey, by the erection of the central tower, that is wanting; for, besides completing that venerable building, the finest old religious edifice in London, and rendering it a still greater object of attraction and interest than it is at present; it would blend harmoniously with the three beautiful towers of the New Houses of Parliament. London has not so many fine public buildings, as that she can afford to neglect the few that she possesses.—O.

\* \* \* The asserted insufficiency of the existing piers has long stood in the way of this proposition.

**FALL OF TWO HOUSES.**—On Wednesday last alarm was occasioned by the falling in of two houses in Bartlett's-buildings, Holborn. For some days past the workmen of Messrs. Lucas, Brothers, builders, Belvedere-road, Lambeth, have been engaged in repairing the houses in question, for which purpose the inside of each had been stripped, leaving the bare walls and roof alone standing. At six o'clock in the morning the workmen commenced operations as usual, when they were suddenly terrified at hearing a cracking noise, indicative of danger. They lost no time in endeavouring to make their exit from the building; but ere they reached the exterior the whole fell in with a tremendous crash. Fortunately, all escaped with their lives.

## [ADVERTISEMENT.]

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## [ADVERTISEMENT.]

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15, Gate-street, Lincoln's-Inn-Fields.

GENTLEMEN,—In reply to your inquiry as to my opinion of your Shutters and other Work, I beg to say that the Brass Front and Stall-board Plates you made for me I think equal in finish, and, indeed, altogether such as are not to be excelled by any other in London: it wears well, and I think the colour of the Brass is excellent. As to the Shutters, it is now Eight years since they commenced work, and I believe Twenty Shillings will cover all charges for repairs during that time; they do, and have worked well during all that period, and I believe them to be as sound now as on the day they were fixed.

Yours obediently,  
JAMES MEDWIN.

## TENDERS.

For works at Richings Lodge, Colnbrook, Bucks, for Mr. C. Meeking. Mr. George Fownall, architect. Quantities by Mr. James Williams:—

W. Cubitt and Co.	£4,970 0 0
T. Arden	4,776 0 0
Holland	4,640 0 0
Geo. Mansfield and Son	4,435 0 0
Banders and Woolcott	4,580 0 0

For new warehouse in Greyhound-Alley, City. Mr. T. C. Clarke, architect:—

Lawrence and Sons	£2,092 0 0
T. Arden	2,078 0 0
G. Westacott	2,037 0 0
Asby and Sons	1,998 0 0
Browne and Robinson	1,932 0 0
J. Willson	1,798 0 0

## TO CORRESPONDENTS.

R. R. E.—D. H.—H. K.—C. G. (next week).—T. I.—E. M.—Vinot Amor, &c. W. J. F.—W. B. R.—M. I. H.—H. C.—P. and M.—D. H.—J. E.—W. B. P.—W. P. O. H. E.—A. R.—E. and Son.—J. W.—J. R.—H. W. S.—T. E.—E. L. G. (next week). Thanks.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

Books and Addresses.—We are forced to decline pointing out books or finding addresses.



## The Builder.

VOL. XV.—No. 766.



BRIGHTLY shines the sun, the air is fresh and invigorating, and, opportunity occurring,

"One who long in populous cities pent,  
Where houses thick and sewers annoy  
The air,  
Forth issues on a summer's morn, to  
breathe  
Among the pleasant villages and  
farms  
Adjoined."

Will you with us, good reader, not expecting too much in the way of information, but content to while away a day in walking through an old church or two, and loitering amidst the beauties of nature? We may be less technical than is usual in these pages, and say a word or two about a fine view if it strike us, not restraining an

exclamation of delight if a noble clump of trees, or a piece of man's handiwork call it forth, and yet find time enough to pick up sufficient knowledge to redeem the ramble in the eyes of those who think it necessary to be always working. The trees are still green, showing as yet but little of the autumn brown; the sombre yew is full of red berries, and the hedges and the fields are enlivened with flowers,—the elegant pimpernel, charlock (troublesome but sparkling), the harebell, the yellow tormentilla (who would guess it had its name from *tormentum*, because it cures the toothache?) wild geranium, and many others. And who will look at any one of these with the mind, and say there is nothing to be learnt from it by "artist or artisan?"

"Your voiceless lips, O flowers, are living preachers,  
Each cup a pulpit, every leaf a book,  
Supplying to the fancy numerous teachers  
From lowliest nook."

You might get a lesson from each, but we cannot stop so long, for we are in face of Lingfield Church, and would see what it contains. Lingfield is on the borders of Surrey, close to Sussex. The daughter of William de Hevere, of Hevere Castle, married Reginald de Cobham, in the thirteenth century, and the grandson of this Reginald, in 1342, founded in Lingfield, Sterborough Castle. The church contains many memorials of the Cobhams. One Reginald Lord Cobham founded a college in Lingfield, in 1431, but we did not see any remains of it. Aubrey mentions an inscription, formerly in the east window of the church, in memory of Reginald Cobham, *fundator*. There is a very fine brass on an altar-tomb in the north aisle of the chancel to Sir Reginald de Cobham, who died 1403, which is figured in Mr. Boutell's "Monumental Brasses." It is a very interesting example, because it shows the transition then taking place from the use of chain-mail to plate armour. It has the acutely-pointed bascinet and camail (cap-mail?) in connection with the cuirass and taces. His head rests upon his tilting helmet, from which the crest, apparently a head in profile, has been removed. The inscription in full is given in the Oxford "Manual for the Study of Monumental Brasses." Near to this brass, in the same aisle, is an altar-tomb with a sculptured effigy of a knight upon it, in mixed armour of nearly the same period, and wearing the garter. Manning and Bray, in their history of Surrey, and Brayley after them, say the head of the effigy is resting on a cushion originally supported by two marble figures, now much mutilated: in truth, however, it rests on the turbaned head of a Turk, the more deserving of notice as it would

seem to show a connection between this effigy, which has no inscription, and the brass last mentioned. The feet of the effigy rests on a small figure of a man with a long beard, and turban on his head, probably with reference, together with the head above, to some exploit in the Crusades. The effigy is in a very bad state, and should receive attention. It was originally elaborately painted and emblazoned. The church is full of noble and costly memorials. Mr. Brayley, we suspect, could scarcely have examined them for himself, or he would have given fuller particulars. In the centre of the transept is a large and handsome altar-tomb, of the Perpendicular period, on which are the effigies, in white marble, of a knight and lady, formerly painted and gilt, with numerous heraldic insignia, but no inscription. A large Purbeck marble altar-tomb, with panels full of tracery as sharp as when first executed; a brass of a female the size of life (the part representing the hair destroyed), and the brass of John Hadersham (a contraction of the last syllable makes it a difficult name to read), "*Qui obiit in festo apostolorum Symonis et Jude, 1117*," together with an ancient oak lectern, deserve attention. Even more so, from its greater rarity, does an incised memorial at the east end of the chancel, 4 feet long, and 1 foot 4 inches broad, formed of three tiles, and representing a figure with the hands clasped, and in the costume of the first half of the sixteenth century. It is curious as an imitation of earlier work without the skill of the early workers. There are two tiles remaining in the pavement of a second memorial of the same kind.

The body of the church—it is dedicated to St. Peter and St. Paul, by the way—shows nothing earlier than the Perpendicular period; but the failing tower, heavily buttressed, preceded it. The north side of the church externally presents a handsome range of seven windows. Between the third and the fourth of these there is a turret as high as the roof, with a door into it, which the historians of the church say does not appear to have any internal communication. We may add, however, that the turret may have led to the roof-loft.

The views about are beautiful, and on leaving the church, you will find in Plaistow-street, as the road is called, where another road crosses it, a picturesque structure of two stories (with a modern "cage" tacked on to it), called St. Peter's Cross, belonging to the last period of Pointed architecture. According to Manning, it was at one time surmounted by a cross, with a basin for holy water on the top of it! A picturesque old oak spreads itself over the structure, and forms a charming picture.

We journey southward, over the Sussex frontier, and find ourselves at West Hoathley, where the views are superb. Looking thence northward, in a most luxuriant valley, nestles an ancient residence, formerly called Gravelye, and now Gravetye; while the tower of East Grinstead Church, every where seen, helps the distance. West Hoathley Church has a lofty shingled spire. Rickman says the chancel is of the Decorated period, but this is an error: the chancel is Early English, and has three handsome sedilia, and a piscina. The font is of the same period; it had originally a central stem, with four smaller columns round it, at the angles, but the latter have disappeared. The original east window was destroyed when a flat ceiling was put up in the chancel. The church altogether has been sadly dealt with, but offers facilities for satisfactory restoration, which it may be hoped will be taken advantage of one day. The "priest's door," in south wall at east end, has a semicircular head; but whether this marks an earlier period for the first erection of the church than the body of the building would, or is a caprice, can scarcely be said. The fact, however, that one of the two small open-

ings in the upper story of the tower, on both sides, is circular-headed, and the other pointed, may strengthen the first supposition.

In front of the west door of the tower are memorials of the fact that there were iron foundries in Sussex at an early date, in the shape of two cast-iron monumental slabs, one to Richard Infeld, who died 11th September, 1619, and the other to a second Richard of that name, who died on the 11th of March, 1621. The former of these, when Horsfield wrote his history of Surrey (1835), was in the floor of the church. The ancient house of which we spoke just now, Gravetye, was formerly the property of the Infelds. Mr. Cutts, in his "Manual of Sepulchral Slabs," mentions an earlier example of cast-iron slabs at Burwash, in this county, but does not speak of these at West Hoathley. There is one also, he says, at Crowhurst, Surrey, dated 1591.

Nearly opposite to the church, is a stone house, consisting of a centre, with two gabled wings, which is connected by tradition with Anne of Cleves, and would seem to be of about the date of that lady. The centre has on both sides a long window, straight-headed, like all the other windows, divided by upright mullions into nine lights. The inside is much altered; the staircase is more modern than the building, and is not in its original position. The hall, however, is plainly recognizable, with its dais, and there are some stone chimney-pieces and carved woodwork, in other parts of the house, worth seeing.

The great features, however, of West Hoathley, are of nature's providing, and were turned out of hand before any distinct style of architecture had been thought of. We speak of what are called Chiddingfold Rocks, which will remind the visitor who knows Fontainebleau, of the charming forest of that wonderful place. Years ago Governor Pownall described in the *Archæologia* one of these rocks long known as "Great upon Little," and thought to be a work of the Druids. He pointed out discriminatingly what most persons believe now, that Nature had probably done the greater part of the work, whether the Druids had afterwards adopted it or not. This mass of rock, which we may call roughly 20 feet high, 15 feet one way, and 20 feet the other, and weighing probably more than 500 tons, stands on what in some positions looks little more than a point, and in others a ridge. Initials, dated in the beginning of the seventeenth century, are observable on the face of it, and some monograms, which belong, perhaps, to the previous century.

Elsewhere there are the Cave of Adullam, and the Picture-frame Rock (a title more expressive than poetic), the Cave of Vishnu, the Druid's Seats, and many other beautiful points; while seen from the other side of the brook the rocks take a more regular form, and look like those—

"Massy and mysterious giants  
Of architecture, those Egyptian fabrick,  
Which, point on Egypt's plains to tombs that have  
No other record."

The present excellent owner of the estate is proceeding with vigour and taste to develop its capabilities, and none, who will first ask permission, are refused access to its beauties.

Still going to the south we reach the church of Horsted Keynes, known for the curiously small sculptured effigy of a cross-legged knight, armed, which lies in an Early English trefoil-headed niche on the north side of the chancel. The stone out of which the effigy, with lion at the foot, is cut, is 2 feet 7 inches long: the niche is 2 feet 10 inches. A writer in the "Journal" of the Archaeological Institute (vol. iii.), seems to think that the niche was its original place: it has not, however, that aspect. The effigy was laid some time ago on a window-cill in the south transept. The niche was pro-







am paid according to their labour and iron; then why complain that I give you plenty?" Will men never learn that if you pay people in proportion to this or that, lines, or letters, or iron, you will get lines, or letters, or iron; especially if it costs them nothing?

These two professions must perish in contempt, or this whole system be repudiated, and designers become, like all other workers, *result-paid*. The result is to be regarded in a triple relation. "Well building," says old Sir Henry Wotton, "hath three conditions—commodity, firmness, and delight." Now of these, the first is quantitative—a foreknown measurable quantity—so much space to be inclosed, divided, and sheltered. The second element is one of degree, and affecting the first as a *quality*, thus: how is that amount of space to be inclosed, divided, and sheltered? In the frailest mode allowed by law? or in some stabler mode defined by a stricter law? as, for instance, the Mediæval and Renaissance one, that no timber support masonry; or Solomon's (1 Kingsvi. 6), that the carpentry be all removable, as by fire or decay, without affecting the stonework; or the old freemasons', that no piece of material receive cross-strain; or Wren's, that the masonry all poise itself without tiers of iron; or Fergusson's, that the shelter be independent of timber, as at Milan Cathedral; or by combining the two last excellences, imperishable as the Pantheon. In times of real architecture there must have been certain recognised degrees of stability, structural "orders," defined by rules like these, *universally* taught or known as "common things," and so it must be known as for each order, from the current one, or freest, easiest and frailest, up to the strictest, hardest, and most monumental, its own scale of designer's pay; or factored, to be applied to the price for given accommodation. The third element, Decoration, again, is quantitative and independent of both the former; being simply so much (or rather, so many designs of) ornament; no repetition of count counting for anything in the designer's bill. If C, F, D, then be the figures expressing these three elements, quantity of commodity, degree of firmness, quantity of Decorative design; the whole charge will have the form C F D.

Now even the Building Act tells us how to reckon C. The fees to district surveyors vary jointly as the building's area and number of stories. This is the rule I adopt and could propose, as to the charge for the utilitarian part of the architect's work: only the area should be *internal*, to be proportional to results independently of means; and thus it becomes simply a charge of so much per square (or areal unit) of flooring, stairs included. But there must be, for universal extension of the rule, at least four prices per square; the lowest applying to the current order of structure, or frailest allowed by the Acts; the second where masonry is not allowed to rest on timber; the third to unimflammable (or what is commercially called fire-proof) building, i.e. independent of timber except in non-essential fittings; and the highest to the really fire-proof or monumental order, independent both of timber and metal, for essentials.

Next observe that where portions exactly repeat one structural design, from any floor upwards, this is not as with mere decoration; but the designer's work must neither be valued so high as if they were all different, nor so low as if only one were built: for, besides the superintendence, it is often harder to contrive one design that shall suit two or more compartments of plan, than a design for each. Moreover, one mode of valuation would make it the architect's interest to design crystal palaces; and the other, such things as the new canopies adjoining Westminster Abbey. But as common sense dictates that the more times a pattern is to be repeated, the more valuable should it be, I charge in these cases for a mean proportional between *one* and *all* of the compartments; that is, the floors of so many only are measured as do not exceed the square root of the whole number that are similar.

Thus we dispose of CF, the charge for any first general design, fulfilling written instructions. If the instructions be then altered, charge for a second, half as much as for the first. It will teach people to know their minds. Again, the childish trick of getting one man's design executed by another, we can check by letting it be understood that if we promise to obtain no copyright we double the charge.

For the second stage, detail design, including specifications and all working drawings, *except of ornament*, either the same charge CF, or some fixed portion thereof (but for the present say the whole), is to be repeated.

Thirdly, for the decorative detail, we can only have a fixed price per drawing or model, of such as does not represent any natural object; a second for such as is vegetable; a third for animal; and a fourth for human form. Of course a design has no right to depend on anything the designer himself cannot model, and indeed this was never dreamt of till quite re-

cently. Observe, again, that by a just valuation, no mock features, or what Professor Willis calls "Decorative construction," from a Victoria-tower down to a "battreset," finding any place in the designer's bill, either as utilitarian design or ornament; all these things will speedily disappear. When only real ornament pays, real alone will be designed.

Lastly, for *Superintendence and successful completion*, there must plainly be a charge in a fixed ratio to the sum of the two last, or the whole detail design, structural and decorative together; and I should think their identical price repeated, not too much, provided always that this payment be deferred till the success be in some slight degree tested. It should not become due till the work have been an agreed number of years in use uninterrupted by any repair.

By any just system, and by this, any projector who really knows his wants, would be able to fix at the outset his precise expenditure on design and superintendence, however ignorant of that required in any other branch of the work. Again, in inviting a competition, the fixing a maximum cost would (far from being necessary, as at present) be hardly advantageous to any one. The things to fix, besides the amounts of room, are (1) the Order of stability; (2), whether the construction be without reference to air or sanitary laws;—as at present,—or how much space, if any, made self-ventilative; (3), whether "decorative construction" be admitted; and, if so, the mass thereof in cubic feet; (4), whether decorative material—uncarved—be admitted, and, if so, the portion of the whole outlay allotted thereto; (5), whether plastering, or plaster imitations, be admitted internally, or externally, or both, and the amount of either in cubic feet; (6), the order of decoration, namely, whether admitting no natural representation, or vegetable only, or animal, or human; and (7), the ratio the decorative outlay may bear to the whole, it being always necessary that separate estimates of the necessary and the decorative work be insisted on. No competition where these particulars, at least, have not been fixed, can be regarded as anything but a silly and mischievous kind of lottery; and if the State put down lotteries, it might consistently make such rules as to prevent them in this absurd disguise.

There is one more great fallacy in your correspondent's scheme. He advises architects not to compete "unless at least two premiums are offered." But no projectors, unless grossly deluded as to their own interests, or dishonestly sacrificing those of the public, would ever offer a second premium. I know of no other throwing away of money so demonstrably a pure mischief. For observe: in every memorable competition, the second "premium" (as it has been deceitfully called, for no purchase-money for drawings has any right to be called a "premium" at all),—the second, if not the first (for in the Westminster Palace case I believe it was the first),—has simply gone to purchase the largest number of strokes. Of course it has: nothing more natural or more just, if a second set of drawings was bound to be bought and only one building to be erected. "Look," say the judges, "what unwearied industry is here, what talent and 'enterprise!' Can we have the heart to leave all this unrewarded, and wasted to the world, merely because it seems yonder rough draught, of not a tenth the labour, and no striking ability, would have answered our purpose better had there been no further choice?" Of course not. Can we blame them? The error was the primal one of *promising to buy what nobody wanted*. If prize contests in architectural fancy drawing are thought desirable, give them by all means. O noble art-patrons, but don't steal the money. Raise it openly for this purpose,—not under pretence of expenditure on a public building.

But, now observe what this "second prize" necessarily comes to be,—I am not speaking of sculptural, or pure fine-art contests; they are another affair,—but in architecture it amounts (if made a rule) to nothing in the world but the sale of a name by auction; any man may buy it, as Didius bought the name "Imperator." The better who bought the first choice of a seat to hear Jenny Lind would be most useful in this capacity. Well, then, what I would propose is, that every building committee should save the community all this waste of Indian ink, and utilize this superfluous ambition, by simply advertising thus, "A single premium only; but the title of 'First of the Architects rejected,' for this building, will be sold at the Auction Mart, at twelve, for one precisely." Thus the victorious hatter, or what not, would "be called Daines his cousin," a handsome contribution would be elicited, but, above all, this would save the debasing of design and debauching of public taste therein, by such designs as the majority of those lately hung in Westminster Hall; half of which, never being meant for adoption, but only for a high place among the fourteen great rejected, never would have been produced had no secondary rewards been held out.

E. L. GARRETT.

#### ST. MICHAEL'S CHURCH, BOLDMERE, SUTTON COLDFIELD, WARWICKSHIRE.

THE foundation-stone of this church was laid by the Countess of Bradford on the 10th of September, 1856, and the building, which is in the Early Decorated style, was consecrated on Tuesday, the 29th of September last (being St. Michael's day), by the Right Rev. the Lord Bishop of Worcester.

The church is situated about two miles from the town of Sutton Coldfield, on the high road leading from Birmingham to Lichfield, and with the churchyard occupies an acre and a quarter of land, which, together with a site for the parsonage and 55 acres of glebe land, is the gift of the Rev. W. K. R. Bedford, rector of Sutton Coldfield, and patron of the new district. The church at present consists only of a nave, chancel, and tower; but provision has been made (by introducing shafts and arches—for the openings into the aisles), for the further extension of the building, as the increasing population may require. The total length from east to west, including the chancel, is 102 feet; and the width, 28 feet. It contains 350 sittings, 275 of which are free. The material of the outer walls is grey limestone, with white Hollington stone dressings; and the interior masonry is of Bath stone. The roof is of timber, stained and varnished, that over the chancel being formed into an arched and panelled ceiling.

The floor is paved with Minton's black, red, and buff tiles, in an appropriate pattern. The east window is of elegant design, and contains five compartments, which we should much like to see filled with stained glass. The sittings are open, and made of deal, stained and varnished, as are also the stalls and reading desk, which are decorated with poppyheads, well executed: the communion-table and lectern are of oak, and there is a stone credence on the south side. The chief ornament of the nave consists in a very handsome stone pulpit, the gift of the architect: the font was presented by the incumbent, the Rev. E. H. Kittos, a beautiful altar cloth by the Countess of Bradford, the very elegant communion-plate was the gift of Miss Pimms, and two tables of the Commandments, illuminated by the Rev. W. M. Gregory. The architect is Mr. J. F. Wadmore, of London, and the work was executed by Mr. Highway, of Walsall, to whom praise is due for the excellent way in which the design has been carried out. We regret to hear that, although the contract amounted only to 2,665*l.*, there is still a deficiency of 700*l.* to be collected from friends and well-wishers, to so good an undertaking. A parsonage-house has lately been erected by the incumbent, the grounds of which adjoin the churchyard.

#### A SHORT CUT BY A LONG ROUTE.

ABOUNDING in fine street lines which require but little opening or extension, this London of ours is a standing reproach to us. It is needless to recite how many improvements have been suggested by the *Builder* in all quarters of the metropolis: suppose, then, we take them up point by point, or line after line; and that, for the sake of facility in dealing with them, we only suggest such as demand not wholesale clearances, but short extensions, or partial enlargements.

That we should remain wholly stagnant whilst our neighbours are modernising and embellishing Paris, is wholly unaccountable: every blot, such as the Temple-bar gate, Middle-row Holborn, Oxford-street, and Tottenham-court barriers, the Soho and Lincoln's-inn-fields *impermeability*, with other "disgraces," too numerous to mention, are exactly as they were bequeathed to us!

Well, we can't help it. There is no fund on which to draw for great public improvements, and there seems to be no authority constituted for the purpose of carrying out grand metropolitan structural projects. Some that are in process of gestation, such as Farringdon-street, and Victoria-street, Westminster, lie in chaotic ruin: so be it.

With such facts before us, it may be thought idle to talk of any advance in the arrangement of great thoroughfares; nevertheless, as an introduction, and superadded to the *hundred and one* leading routes of intercommunication already laid down, there is a grand trunk line, central to the west end, which, as it leads direct from the north from Hampstead, and from Regent's-park, is worth jolting down by the way: it is the direct cut of Baker-street and the Audley streets (up to Audley-end) into Curzon-street. If this way were cut on in a right line, it would strike out on Piccadilly, straight through Hamilton-place, disclosing the Green-park at one end, the Regent's at the other!

Lines of street like this, revealing at either end verdure and fine trees, are the greatest ornaments to a city. Baker-street, being now converted, or rapidly merging, into gay shops, is the main artery from the densely-peopled neighbourhood of John's-wood, Portland-town, &c.: it bisects the great quarter extending



from Tottenham-court-road to Notting-hill, and from Piccadilly to Hampstead

A little care and a little money expended on the opening out of such a causeway would not be thrown away. The crooked strait of Park-lane has been an old blain, and a chronic complaint: the equipages of nobles, as well as the cabs, have tormented it philosophically; it was too crooked and circuitous for omnibuses, and the same faults consign it, so far as the public is concerned, to the average traffic of a third-rate street.

Whilst wars and rumours of wars disturb the mind, and shake the interests of the community, it is not very probable that extensive plans of demolition and reconstruction can be carried out; but improvements of existing routes, which require only a little elongation and emendation, might in a measure redeem the time; meanwhile, by such advances the metropolis would be the more prepared for the commencement of a new structure, when the great circle of capital and labour without which no great reforms can be introduced are useless or inefficient.

Whatever improvements be made at the issue of Park-lane into Piccadilly, and there is no great probability of the west end so inadequate to the traffic that some line would go in and of the great north line of Baker-street. Hamilton-place is in the direct range, and it would also come into the slightly swinging curve of the line; but as there are some costly incursions in the way of the Andover-street continuation, that route might, by a slight curvature, strike through the Strand-post-office to Bedford-street, and so by Dorset-street to Piccadilly.

As to the conservatism of retired state in favour of some night residences in Hamilton-place, it can scarcely be maintained that the population of London must be restrained from using an open street already paved, lit, and completed, that street being in the direct line of way: that they must continue an increasing traffic by the old uphill, crooked, and narrow lane, in order that those few magnates may enjoy undisturbed repose in their "cul de sac." If so, Acts of Parliament and valuation judgements be viewed as engines of public administration so far only as relates to the property of merchants, or traders, or of the mob. Men in authority have a great repugnance to the practice of their own favourite maxim, "debellare superbos."

The Dan and Chapter of Westminster, to whom the little intervening garden strip belongs, are too well known for their objections to public free admissions to cause any uneasiness with regard to their charitable concession of a great public necessity.

#### MR. SCOTT ON THE PRESENT POSITION AND FUTURE PROSPECTS OF THE REVIVAL OF GOTHIC ARCHITECTURE

At the meeting of the Yorkshire Architectural Society held at Doncaster, on the 23rd ult. Mr. Scott read a paper on this subject. First urging the importance of the movement against "the vernacular architecture of the day," he pointed out what was required of a national style, and proceeded thus:—

I would ask how our prevailing architecture has fulfilled the conditions demanded of a national style? It is idle to say that it has failed in the fulfilment; it has absolutely reversed every one of them. Instead of imbuing the popular mind with an instinctive love and perception of beauty, it has utterly extinguished those perceptions, and apparently substituted a preference of everything mean and ugly; so that whilst formerly the beautiful structures evinced an intimate sentiment of propriety and correctness of form in its design, such buildings are now disgusting to any cultivated eye. The elements of beauty to us by our forefathers, and which once beamed with beauty, every part of which showed the utmost care for nobleness of design, and which in the homestead villages were part of a model of planning and impressive simplicity, became degraded and disfigured by meannesses of every description, and were treated with no more love or veneration than if they had been stables or cow-sheds; while, if a new church was needed, unless, indeed, its position rendered it an object worthy of the high-priest's system before named, it was in nine cases out of ten erected without the smallest regard to beauty, and often in a style of the most abject baseness.

(The paper then referred to the cost of churches in the Greek style, put up when the first movement was made in favour of church building, and of the debased works which followed in the era of "cheap churches.") Better feelings, however, began to become more general.

It so happened, as if by an over-ruling Providence, that about this time a secret and almost unconscious progress was being made in the study and appreciation of our ancient churches. Some few architects, chiefly young men, who had hardly commenced practice, had been drawn towards them by an irresistible

attraction, not with any thought of making any practical use of their study, but by a spontaneous opening out to their apprehension of the hidden beauties which the ancient remnants contain. They began to make long pedestrian tours from village to village to sketch and study the architecture of the churches, and their minds and their sketch-books became filled with the details of true Christian architecture, almost before the thought occurred to them of turning them to practical account. At the same time, but quite unknown to these humble architectural students, a feeling of compunction began to become prevalent at the low estate to which the houses of prayer were being reduced, and a noble spirit began to show itself here and there for remedying their dishonour. The union of these two germs of better things has led to the revival which is now happily taking place.

About the time I am referring to, an immense impulse was given to the reformation of architecture by the earlier publications of Pugin. His "Contrasts," published in 1835, most vividly exposed the abject meanness which pervaded the architecture of the day, and while it carried the majority of our architects, it excited others most strongly to press forward towards better things. His "True Principles of Pointed Architecture," which appeared in 1841, was a gigantic step in advance. It grappled at once with all the fallacies which had corrupted modern architecture, and established a code of rules founded upon common sense, utility, and truth; while his "Apology," which came out a little later, showed the necessity of falling back upon our national style, and its ready applicability to every requirement of our day. In the meantime, the success of his own personal labours was truly astonishing; not only were the advances he made in the revival of Pointed architecture most rapid, showing genius in every touch,—this was in fact the smallest of his achievement,—he actually revived by his own hand, or his own personal exertions, nearly every one of its subsidiary arts. Architectural carving and sculpture, stained glass, decorative painting, metal work whether in brass or wrought iron, gold and silver work, jewelry, enamelling, embroidery, woven textures, paper-hangings, ecclesiastical tiles, the manufacture of furniture, and even of ordinary household crockery, ware, all felt the impress of his hand, and of his genius. Shortly after Pugin's death, public knowledge, the same cause began to be vigorously taken up in our own class. The seeds of reform in our nation with both universities were followed up by others in all parts of the country. That vigorous periodical, "The Ecclesiologist," though its zeal (in its early days) often outstepped the dictates of discretion and its critiques too often evinced the effects of party-feeling and individual partialities, did immense service in exposing the desecration and degradations to which our old churches were subjected, and in promulgating correct principles of ecclesiastical architecture and arrangement. A noble feeling for the subject rapidly spread itself as over all classes, the zeal for church-building and restoration greatly outran the increased knowledge. Acts of individual munificence multiplied on all hands, and an entirely new state of things came about.

The latest, perhaps, a wrong step taken by the more earnest-minded church architects was a due appreciation of the necessity for truthfulness of materials and genuineness of construction. Internal details were at first in plaster or cement instead of stone; deal was grafted to imitate oak, and plaster jointed to look like stone. These inconsistencies were but slowly got rid of. Those, however, who followed church architecture with earnestness and with a worthy sense of its claims (and they were and are still but a little band) at length attained to the courage requisite to follow it up in all the truthfulness and substantiality of ancient work. Our walls became as thick and more solid; our timbers often as stout, though not so often of the true heart of oak; our seating as massive; our arches, columns, and internal ornaments as uniformly of stone as in the ancient churches. But what was the consequence to ourselves?—simply that we could not produce a church, though we built at prices so low as would have astonished our fathers, at anything like the estimate of the multitude of our competitors, who cared for none of these things, and who brought forward showy drawings of highly ornamented churches, backed by estimates 20 per cent. lower than those we could venture upon for much plainer and more homely-looking buildings. It is this which was and still continues the hindrance to the progress of genuine church architecture, and which makes our revival appear to many a thing of frivolity and fashion rather than of deep and earnest feeling.

When it had arrived at this stage, our revival was strongly influenced by a new and most wonderful champion—I need hardly say that I refer to Mr. Ruskin. I cannot trust myself with the task of commenting upon the works of this most eloquent and

remarkable writer. This, however, is quite certain, that no man, Pugin alone excepted, has so strongly influenced the undertaking we have in hand, and no single individual, not himself a professed artist, has in our times exercised so wonderful an influence over the art of his day. Our opponents detect him as they did Pugin and the ecclesiologist before him, and find in his writings abundant grounds for reiterating, according to their custom, the charges of enthusiasm, exaggeration, inconsistency, and the like. It is probable that all unteaching reformers are more or less open to such charges; but in spite of all this, the effect of his writings has been enormous, and, in the main, most beneficial. Among the many directions in which Mr. Ruskin has influenced our revival, may be mentioned one which, though liable to be carried to excess, is nevertheless of considerable importance—I mean the attention he has called to the merits of the mediæval architecture of Italy, which had hitherto been viewed as an inferior style meriting little attention, but which is now found to contain a mass of material, which, if judiciously used, will supply many a hiatus in our own architecture, and greatly aid us in our future developments and adaptations. More important still is the study which has of late years been given to the French architecture of the thirteenth and fourteenth centuries, especially the former, which for vigour of sentiment and masculine boldness is unqualified among the works of the Middle Ages, and being, as it were, the great central type of Pointed architecture, claims from each nation of Europe an amount of study and attention second only to that demanded of each for the indigenous art of its own country.

Let us now consider for a moment what is the position in this great revolutionary movement which we have succeeded in attaining. I think I may, in the first place, say that we—that is to say, such of us as have followed up the subject with zeal and care—have succeeded in obtaining a fair knowledge of mediæval architecture whether at home or abroad, and of mastering its general principles. So far as this goes we have fairly cleared the ground before us, so that there is no more difficulty for a student in making himself acquainted with Gothic than with the so-called Classic architecture: this is no small achievement, to have thoroughly mastered the grammar of our art. Secondly.—We have revived a general feeling in favour of the study of mediæval architecture, and a feeling most strong and wide-spread in favour of its revival. Thirdly.—We have actually succeeded, and that to the fullest extent, in the revival and re-establishment of our style, so far as relates to ecclesiastical purposes. No revolution was ever, so far as it goes, more complete; for while forty years ago no one in building a new church would ever have dreamed of making it Gothic, no one now dreams of making it anything else. Whatever may have been our failures or shortcomings, in this we have been thoroughly and perfectly successful, that we have completely revolutionized our ecclesiastical architecture. Our opponents may severely grieve over it, or may publicly deride it as a fashion of the day—an affectation of high churchmen, or a dream of sentimentality; but, say what they will of it, the fact remains that the base architecture of the churches of thirty years back is overthrown, and the noble style of our mediæval forefathers re-established on its ruins. This fact is as indisputable as the Renaissance of the sixteenth century. It is too late for our opponents to wince, and object, and bring forward sapient arguments which are as potent against their own Renaissance as against ours;—the revolution is completed, and neither their wrath nor their lamentations will reverse it.

The next point which we may chronicle is this—that we have a staff of architects who are well able to carry on the success which has been achieved. True it is that, though our movement is yet young, the hand of death has not spared our ranks. Our leader has long since been taken from us, and several of the most zealous of our fellow-labourers have been removed. Yet, thank God, we remain a zealous and vigorous band, and our ranks are continually being strengthened by earnest-minded and talented recruits; so that the number of really efficient champions is ever on the increase. There is, too, a goodly number of young men, as yet unknown to the world, whose whole souls are devoted to our work, and whose whole time and energy are expended in its furtherance; these young architects form a noble army in reserve who will speedily come forward and do battle in our cause, and will form most efficient successors to those who first lifted up its standard.

Still more important evidence in favour of what we have been doing is the way in which our churches have come to be cared for. Instead of the abject and contemptuous neglect with which they were formerly treated, we find them now everywhere being restored to seemly order. New churches rise in every direc-



tion, the majority of them simple structures, as suits the enormous practical demands of the day, but others on a more magnificent scale, proving that while not losing sight of the urgent demands of a teeming population, we are not, on the other hand, unmindful of the exalted claims of the temples of God. Church arrangement, again, once so utterly lost sight of, is now fairly appreciated and understood. The wretched fallacies and shameless shams of the day are by the Gothic revivers utterly repudiated, and truthfulness established as the guiding star of all they undertake. The subsidiary arts of architectural sculpture and carving, decorative painting, stained glass, metal work, encaustic tiles, and everything which is wanted for the decoration of a building, are making advances more or less concurrently with architecture itself. Another of our successes is the advance made in the uses of varied materials, such as brick and tile of different colours, marbles, serpentine, polished granite, alabaster, and stones of varied hues, in such a way as to enhance the beauty of our buildings. Though these elements of beauty belong to all time, they had been utterly neglected at the period of our revival, and have reassumed the importance which belongs to them concurrently with the revolution in architectural taste. Even metallic construction, the great practical development of our day, has by our vernacular architects been in a great degree neglected as an æsthetic element, but assumes new beauties, thoroughly adapted to its conditions, when it comes into the hands of our revivalists.

Thus far I have dwelt only upon the bright side; I will now point out some of the drawbacks from which our cause is suffering. The first of these I believe to be architectural competitions. At first, sight nothing would appear more likely to serve as incentives to progress than such competitions, and it may be that in a healthy state of art such might really be the case, and even now that it may be so in a few exceptional instances; but at a time like the present, when, by the long prevalence of a foreign style in which no one took a personal interest, all feeling for architecture, and all instinctive perception (on the part of the public) of beauty of form, had been extinguished, it must be clear that little is to be expected for competitions in which a chance assembly of persons, probably without knowledge or taste, are to be the judges. So obvious has it become, that in nine cases out of ten those who have had the selection of designs in such competitions have been utterly incapable of distinguishing what is good or bad, and that a certain trashy showiness, backed by an estimate unblushingly low, would beat the most meritorious work of art, that architects of real feeling and skill have gradually withdrawn themselves from an ordeal from which so little was to be hoped. The consequence is that, with all the success which I have claimed for our revival, the great majority of works which has given rise to are not the productions of those who have promoted or care a straw for it, but of men picked up by chance, who only follow our style as the fashion of the day, have never studied old examples, much less worked out any original developments of their own, and are quite incapable of producing anything above the very tame mediocrity. The works carried out by the leaders of our movement, or by those who have devoted heart and soul to it, are but a mere fractional minority; so that, though the success of the revival as a great moral fact is only the more indubitably proved by those who care nothing for the matter, being compelled by the force of public opinion to follow it,—its actual artistic success is most seriously impeded and its character deplorably lowered by the unfortunate circumstance that most of its productions are by men who utterly neglect the study of their art. This evil is further increased by the appointment of architects from motives wholly unconnected with their professional competency. A particular architect is the son or nephew of a member of the committee,—a friend of some large subscriber,—a townsman,—a native of the country,—a pleasant fellow,—or anything in the world is too often considered a reason for his appointment, provided only that skill in his profession be not named;—if it is so, a hundred objections are at once started; indeed, there are whole districts in which a real church architect is never by any chance employed; and even in London itself they are almost systematically excluded; and there are at this moment men of the highest talent and knowledge doing next to nothing, while mere tyroes and adventurers are executing the works which are unjustly withheld from them.

A second hindrance of the same class is, that a multitude of architects who join our ranks seem to have little or no appreciation of intrinsic beauty. This arises from the low condition to which architectural art had generally fallen, and it has become so engrained into the English constitution, that nothing but a determined effort on the part of each student of architecture and of each individual architect—an effort prolonged during their whole career—will get over it.

We seem as a nation to have lost that instinctive eye for beauty which it is quite clear that our forefathers possessed, but which we see gradually failing during the three last centuries till at the commencement of the much vaunted nineteenth it had become almost wholly extinguished. This defect spoils nine-tenths of the works of our day in whatever style. Every architect would do well to mistrust himself, more or less, on this point, and to use every effort to cultivate his perceptions of beauty. Like persons who having long been pent up in a close unwholesome atmosphere cease to perceive its noxiousness, we are so surrounded with ugliness that our senses are blunted and our instinctive perceptions desensitized. It is only by accustoming our eyes to objects of a contrary influence that this can be corrected. We should seize every opportunity of visiting, contemplating, and drawing from works of a better age, particularly of those which we select as in some degree our models; we should, in our houses, surround ourselves with prints, photographs, and models of the works of such periods, not as copies, but as means of influencing our natural senses and counteracting the baneful influences to which they are hourly subjected; we should, above all, habituate our eye to search out and delight in the exquisite forms of nature's productions. These are over the great hope of a future, for their beauties remain untouched, the works of man never so degraded, and ever remain as the nucleus and germ on which art may be regenerated.

I now come, however, to the great hindrance to the perfect success of our revival, and the great object which we must set before us in all our future efforts. The hindrance referred to is the absurd supposition that Gothic architecture is exclusively and intrinsically ecclesiastical. Every form of architecture may in some sense be said to be religious, for each succeeding style has both arisen and culminated in the temple, and has thence spread itself through all other classes of building. How little do we know of the architecture of Egypt or Greece but from their temples! We scarcely know even what their houses were like. Of the Romans we possess, it is true, many stupendous secular works, but their architecture may be traced to the temple. And it is only in the same way that that of the Middle Ages is ecclesiastical. True it is, that its most glorious efforts were devoted to religion, and that its religious buildings were more glorious as its religion was more pure, but the same architecture pervaded every other class of building, and we know infinitely more of the secular works of our Medieval forefathers than of those of any of the nations of antiquity which architecturally we abundantly suppose to be so suited to secular use. We possess in numbers the town-halls, the places of the town and country houses, the warehouses, and even the agricultural buildings, built and made use of by the same men who carried out our ecclesiastical and parish churches; and we find that since our ecclesiastical period, and then, all only shaping itself in each instance to the requirements and uses of the particular structure. Why then, should we call the style which has developed these varied buildings "ecclesiastical," and limit it to any suited to religious use? Our revival has hitherto assumed a character almost exclusively ecclesiastical, I rejoice in this, because it is following the course reason itself suggests, and it is because it shows that we are endeavoring to return to the first basis of our labour; but it is not to be argued from this that our revival style is limited to other uses, any more than that those of Egypt and Greece were only applicable to temples. It was church architecture which first demanded our reform; it was the low estate to which the House of God was reduced that first made us appreciate its necessity, and it was the beauty of the ancient churches with which our land is so thickly studded that first suggested to us how that reformation was to be effected. We have, so far as churches are concerned, completely revolutionized our architecture, and completely revived a lost style. So far as that is concerned, our duty is now to press forward, to develop, to make the revived style our own, to adapt it in every way to our own wants, to our own ritual, and to the demands, wherever they may be so only that they are legitimate and just, of our own day. In this a noble prospect lies before us, and, with all our hindrances, I think we are in a fair way for realising it. What I have now to urge is, that the reformation thus successfully effected in church architecture must be carried into other branches of building.

The remains, however, which are left to us, are not so scarce as to fail in furnishing elements and suggestions on which to construct a glorious style of secular architecture. The generating of such a style is a truly noble task. It is one to which I have of late years devoted a large proportion of my thoughts and energies, and it is a subject which, the more I follow up, the more convinced I am of the magnitude of its capabilities. To redeem our towns from almost unmitigated ugliness,—to raise the tone of our

ordinary architecture from the abject condition to which it has been brought down, are objects worthy of the highest artistic effort—but we look for something far beyond such negative success; we aim at rendering our cities worthy of the present age in which we live—at rendering every object, however humble its purposes, a source of pleasure and an element of beauty, at rendering our public buildings glorious productions of art, and our private houses delightful, not only to their inhabitants, but to every passer by, and, finally, at restoring to our population that instinctive perception and delight in beauty of form of which they have so long been destitute. To realise all this we need only the united efforts of our architects and the active sympathy of those who feel an interest in the object. This unity of action must evince itself not only in the earnest determination on the part of every architect who has the cause at heart to do his part, and that as energetically as if the whole work depended on his single efforts, in thus regenerating our secular architecture; but it must show itself also in united aim, and as far as possible in a united view of the means by which our object is to be attained. We must not dissipate our force by working each on a different basis, but must strive to work upon the same data, and press forward in the same direction. We must not one assume the Elizabethan as our ground work, another the Tudor style, and a third that of the fourteenth century—this indecision as to our point de départ has been hitherto the great hindrance to our success. What I have already said of the unreasonableness of supposing Gothic architecture good for churches, and classic for houses, applies also to the varieties of Gothic architecture itself. We have by almost universal consent adopted the style of the latter part of the thirteenth century, or the beginning of the fourteenth, as the ground work on which to redevelop our ecclesiastical architecture. Consistently, then, demands that the same basis should be chosen for our secular developments. It is the noblest period of our modern art, and, as I am convinced, the noblest style of architecture which has ever prevailed, and to the fact that it is *our own*, why, then, should we let it from style to style, thus dissipating our energies and bringing feebly into our modern art? The style we have by common consent chosen for our secular buildings is not only the noblest, but it is so flexible as to admit itself to every other use with the most facility, and whatever is valuable in subsequent varieties may readily be translated back into this noblest phase. On this, therefore, let us all begin, as the firm foundation, on which all have agreed to build, for without a common ground-work no united effort was possible, and no new style be generated. Having once, however, agreed on a common basis, our course must be perfectly free and unfettered. Our aim, it is true, must still be one—to construct on this basis a style which will meet every exigency of our day; but in following up that aim there is the most scope for individual talent, and for the most exalted efforts of individual genius. The greater the number of minds brought to bear upon this work, the more copious will be the regenerated art, so only that all work upon the same foundation and aspire to the same result. That our end is not being reached, but yet attained by the genuine arts of modern civilization, and that result the development upon it of a style at once beautiful and glorious, truly symbolizing the greatness which belongs to our period in the history of human progress, and investing every requirement, every art, material, and every lot of our race, with a beauty proportioned to its intrinsic and practical worth, and a content with that our ecclesiastical structures, thus renewed in their forms and secular architecture in its present, noble, and harmonious whole. This is the object worthy of the highest efforts of art; nor is it a chimerical or a visionary aim, but one which needs only our united labours for a few short years to ensure its perfect realization.

#### MR E. B. DENISON ON MODERN GOTHIC AND DONCASTER CHURCH.

At the meeting of the society last year when Mr. Scott's paper was read, Mr. Denison made an address of considerable length in the new church on the Gothic characteristics of the building, with incidental observations on modern Gothic work and its shortcomings. The address is fully reported in the *Doncaster Gazette*. We confine ourselves to a portion of it under the latter heading. After commenting on what he termed "that stupid, and conventional, and unobscuring practice of all the architects' offices, of setting Gothic windows, as they do Italian ones, twice as near to the outside as to the inside of the wall," the speaker proceeded:—

In this church another of the common Gothic mistakes has been avoided, I mean that truly contemptible one of trying to make a false pretence of great size by cutting it up into a multitude of small



parts. This again has arisen from the same tendency which I spoke of before, to mistake the fundamental distinctions between good Gothic and bad. People have fancied that because you do not appreciate the real size of St. Peter's at Rome, till you find that an angel's thumb is as thick as your own leg, or some such measure, whereas the length of St. Alban's Abbey and most of our great Gothic churches, appears almost infinite from the arches being quite beyond the power of the eye to count them at once, therefore, you have only to cut up a building or a window into a great many distinct parts, and it must needs look large and Gothic. And on paper of course it does. Nobody could tell from the drawing of the church that this east window is forty-eight feet high, for instance, especially from those deceptive abominations called "elevations," which flatten everything to one dull and dead level, so that one can hardly wonder that those who are continually employed in making and looking at them, and sending them down to be worked from, and fancying they have then done their business, should always lose the power of appreciating the value of depth and shade, and massiveness, and think no more of a Gothic building as a picturesque thing, which ought to harmonise with nature, than I should in making the working drawings of a clock. But this notion of producing a cheap effect of great size by a multiplication of little bits, is a mere vulgar and ignorant mistake, and is, as it ought to be, always visited with the severe retribution of making the building look really worse than it need do, and not better. Look at the cemetery chapel here—or probably anywhere—with its paltry little windows with gingerbread-looking tracery: a splendid result of competition plans, by the way. On paper that thing would look like a good-sized church; and if all its parts could have been about twice their present size, and therefore the building eight times as big, the details would have been about the right size for such a church. But as it is, it is a sort of Gothic baby-house; and so are these chapels generally; and so they will continue until this mischievous modern notion of getting great effects out of small materials is eradicated: which of course it never will be so long as architects find that the most showy drawing for the money is pretty sure to be selected in a competition. I am far from meaning to charge the original plans of this church with any conscious tendency towards this error; but I am convinced that the three east windows would have had nothing like their present character, if they had been divided into nine and six lights respectively, as originally shown, instead of eight and five as they are now.

There is another of the same family, and arising from the same cause, that of working from drawings which represent nothing as it really looks, and still worse, of drawing the details on one scale, and the whole on another. Of course I know very well that large detailed drawings must be made at last to work from. But until architects, or their clerks, understand better than they generally do, how to carry in their eye, if they will not draw upon their paper, the relative size of the whole, and the distances and positions of the parts, we must not be surprised at seeing, as we so often do, ornaments and details of all kinds rendered ineffective and contemptible by being wholly out of proportion to their place or to the things they belong to, or so far off as to be lost; or, on the other hand, if gigantic ornaments being put close to the eye and overwhelming everything in their neighbourhood. Of these faults also I am happy to say we have very little to show you here. Although, however, there is not enough to do us much harm, there is just enough to serve me for an illustration. Look when you go outside at that band of diaper running up the west gable. You would hardly guess that that is all real carving, and that when it was laid on the floor here it looked very well. I should have been glad to keep it there, or rather to have it inserted over the west door, where it would have been very effective and beautiful; and if that west end had now to be pulled down in order to be extended, I do not think there would be any further opposition made to such a removal; for where it is, it is almost thrown away, and does not more, but less, than would have been done by some strong masonry diaper work without any carving, such as that most excellent and effective decoration of that kind which you see below the lantern windows, superior to any that I know in any similar situation, and curiously enough giving an appearance of additional strength to the tower walls, by its lines falling into that arrangement of "diagonal tracing" (as the engineers call it), which the eye at once recognises as the form of peculiar strength and resistance against vibration. In that respect, and indeed in complete appropriateness to its position, I think it very superior to the arched shown there in that internal view of the church which was exhibited in the Royal Academy three years ago, and is copied in Mr. Jackson's book. I am

sorry to be obliged to say that due attention has not been paid to the proportion of the details to the fabric of which they form part, in one other very important feature, and one which ought to have been among the best in the church; I mean the vaulting of the Forman chapel. The ribs are obviously either too thin or too few; and this vaulting altogether forms a painful contrast to that of the chapel of Nantwich, which is of about the same size and in the same style of architecture. This defect, also, I suspect has arisen from the same cause, of drawing sections of details by themselves without sufficient reference to the whole of which they form a part. There is no place in which modern architectural engineering is so often unsuccessful as in adapting the timbers of the roof to its distance from the eye, and to the size of the building generally, and therefore it is right to call your attention to this roof, which is, I think, free from that fault. You must remember, however, that the beauty of proportion of parts to the whole is just that which from its very nature can only be illustrated by failure, and not by success. For as the most perfect health has been defined to be perfect unconsciousness of the separate existence of any member of the body, so perfect proportion in a building consists in your unconsciousness of there being any part of it which particularly strikes your attention, except by any intrinsic beauty it may possess. I can therefore say no more of this roof than to remind those of you who saw it while it was laid on the ground, how enormous, and, perhaps, wasteful, you then thought the expenditure of timber in it. And yet it would now be easier to find out some places in it where one wishes for a little more substance than any where it could be reduced without spoiling it. But it suggests to me another point in which I believe that very erroneous notions are entertained. Some persons—perhaps most, have heard or read somewhere of the wonderful skill of the Gothic builders in raising such prodigious vaults, and towers, and spires, on such apparently small foundations; and spanning great widths of roof with nothing that strikes the eye as possessing the security of a tie-beam. And so it has been inferred that Gothic architecture ought to display a great deal of engineering skill, and to do everything in the way most consistent with mechanical science. But this, too, is all wrong; so wrong, that it is hardly too much to say that any ostentatious display of engineering is totally destructive of Gothic effect. As a matter of mere mechanics, the vaulting of aisles springing from half-way up the nave pillars is undoubtedly as wrong mechanically as Sir Christopher Wren thought it; and you cannot meet the difficulty by flying buttresses, as you can in the vaulting of the nave. And yet, if you are only to have either the aisles that are and were preferred. Again, the Medieval builders must have known just as well as we do that a rafter five inches by four is stronger if laid edgewise than flatwise; and yet they generally laid them flatwise. Once more, if you had to prescribe the strongest arrangement for walling, you would certainly require long and rather thin stones rather than short and thick ones of the same bulk; nevertheless those are what you see much oftener in the old and especially in the oldest Gothic buildings. I am not concerned at present to inquire why they did these things, except that they had evidently some kind of instinct that they looked better. They knew they had abundance of thickness and weight in their nave pillars to prevent them from being thrust over by the vaulting of the aisles, even when not balanced by the weight of a stone roof upon the clerestory; that their rafters were much thicker than was requisite to bear the load or the tiles they had to carry (blue slates were either not invented or not tolerated in the Gothic times); and that their walls were so thick that it did not signify whether the stones were long or short, or thick or thin, and that they might safely use them just as they came, large when it was convenient, but more generally as small as a man could lift. Whereas now-a-days we build churches which tumble down before they are built, and roofs which push their own walls down, in spite of the engineering and mechanical skill which we boast of so much as the characteristic of this century.

Oddly enough, however, there was one mechanical feature in the Gothic of old times, which we have ingeniously contrived generally to avoid—I suppose because attention to it is really essential to architectural effect; though we do not sufficiently remember that a building may be perfectly Gothic without possessing that feature at all. There is many an old barn and country church, especially in the very oldest Gothic styles, which has no pretence of buttresses, and yet is as truly Gothic as King's Chapel, with its buttresses deep enough to contain a little chapel between each of them. And so buttresses are not, as most architects seem to think them, essential to Gothicism. But when they exist—and they should not be added without some reason—they should be

good. If you ask what is good, I can only answer that all sizes may be good, and that it depends on the size and style of the building and of the buttresses themselves, what is the right proportion for them. I must add, that in my opinion some of our buttresses are the worst things here. They are almost all too square in their plan, at least too square for their general character and arrangement. Compare those of the aisles of the nave, which are 3 feet by 2½ feet, with the chancel aisle ones, which are 4 feet by 2½ feet, and you will have no difficulty in deciding which are wrong. Or to return to our usual repository for illustrations of defects, compare the large buttresses of the transepts with those, I will say, of the Bolton Abbey transepts, which are lower than these, and you will see at once that depth of buttresses (if they are of the styles to which deep buttresses belong) is essential to their Gothic effect. Not that I mean to advocate such exaggerations of that and some other Gothic characteristics, as you see in that gandy and pretentious church (not of the Church of England) just built near the Halifax railway station, with a spire as high as Wakefield, stuck over as thick as it can carry with crockets, and swelled in the middle to prevent its showing its real dimensions by a too sharp point, and set upon a base no wider than these aisles—the approved modern fashion of tower-building to be sure, from which better architects have not yet delivered themselves, even where they have not the excuse of being required to sacrifice everything to the nonsense of verticality and to work as cheap as possible besides.

A building may possess all the Gothic qualities I have enumerated, and yet fail entirely in looking like a Gothic work, or be deprived of its Gothic character, if it had it, at the last moment and by the last operation which the builder generally performs, that of what they call *cleaning down*; which means pointing up all the joints and scraping it all over to as uniform a surface as they can; a somewhat costly process when there is much beyond flat-wall to do, and certainly belonging to that class of operations which a departed alderman of this town rather happily called spoliation. I have said so much about this elsewhere, and so has Mr. Ruskin, that I am unwilling to dwell upon it now, beyond very shortly pointing out to you the specimens both of Gothic and un-Gothic surfaces which are provided for us here. The inside ashlar is made of the stone of the old church, which came from Brodsworth; a bad stone for external work, but fortunately having that variety of colour, that it produces a very pleasing effect in these walls and in the inside window joints and arches, making nearly every stone appear distinct; and so the cleaning down inside has, as it happens, done no harm. But you may see the effect it would have produced on the Steeley stone outside, which is of a more uniform colour, by looking at the inside of the porch, which I suppose the builder and clerk of the works considered a sufficiently doubtful territory to extend their scrapers to it, though it had been strictly prohibited outside. Then, again, look at the outside, and compare it with any other outside of a new church you like, and you will see at once how much more Gothic and how much better this is with the work left just as it is done, and no subsequent pointing up or scraping over. The stones being all worked with none of that trim and formal tooling, the lowest of all forms of art, but which builders think the highest, and put together "promiscuously" and not touched afterwards, they do in that way present the same kind of mottled surface, only got in a different way, which the Brodsworth stone presents inside by its natural variety of colour. We have here, too, a single illustration of the dead and formal effect of after-pointed joints; for the nave pillars were done so, whereas the tower pillars are not. The consequence is, that the former look as if they were painted round with a thin white line, like plaster divided into sham stone; whereas the latter, like the walling stones outside, have got a peculiar and irregular change of colour, which you see at the joints from the effect of the mortar penetrating the stone while fresh; and it is worth notice that wherever you see that, the stone itself has become harder and less liable to decay. In this, too, we have improved as we have gone on.

#### THE ARCHITECTURAL ASSOCIATION.

##### OPENING MEETING.

THE opening meeting of the session and *conversations* were held on Friday, the 2nd inst. in the hall at Lyon's-inn. Mr. G. J. Wigley, president for the session, in the chair. Mr. J. A. Bunker, hon. sec. read the report, which, after alluding to the proposed amalgamation with the Institute, proceeded as follows:—

"The subject of competitions has been forced upon the attention of your committee by two of the most prominent cases of want of integrity upon the part of the respective committees. Your committee felt it was their duty to interfere, and they are glad to say that the members of



the Architectural Association unanimously adopted the protests submitted by the committee, and afterwards sent to the Middlesex magistrates and to the committee of the Liverpool Free Public Library and Museum. It is a matter of regret that the Royal Institute of British Architects did not think it necessary to co-operate with the Architectural Association upon these occasions. In contrast with the last-mentioned cases, your committee desire to call attention to the result of the competition for the Midway Union. In this case architects were informed that the maximum amount to be expended was 11,000. When, however, the tenders were obtained for carrying out the design selected, the lowest was found to be 22,804. More than double the stipulated sum. The guardians immediately rejected that design, and have determined to obtain tenders for that which received the second premium.

Before leaving this vexed question of competitions, your committee are desirous of stating, that they have determined to do something more than look on whilst many acts of injustice are being done; they have, therefore, instructed your honorary secretaries to obtain all possible information as to future competitions. Your committee will then give the subject their careful consideration; and, should it appear to them that the competition is likely to be fair and honourable, they will take the earliest opportunity, at an ordinary meeting, of making the same known to the members; if, on the other hand, it should appear there are reasons for entertaining a different opinion, your committee will announce it in the same way as before, giving in both cases the statement of facts that caused them to arrive at the results. In entering upon this necessarily laborious and delicate task, your committee earnestly desire the support and confidence, not only of the members of the Architectural Association, but also of the profession generally. It is needless here to point out how useful such a plan of operations might be made. Since it is to say, that your committee are determined to do their best in this matter; and all information they may obtain will be at the service of any member of this Association.

[The report further mentioned, amongst other matters, that the committee had been in treaty with the Architectural Union Board, as to a place of meeting in the proposed building, but found the rent required would be beyond the present means of the Association; also, that the establishment of clubs was in contemplation. It was closed with an appeal for contributions towards the formation of a circulating library.]

The President said, in considering the prosperity and position of the Architectural Association, they must place before them the precise objects for which they were associated, namely, the constant study of their profession and the endeavour to progress collectively, as members of the same calling, instead of keeping in an isolated position. He was not unmindful of the fact, that in expressing his own opinions on this subject, he exposed himself to both public and private criticism. Professional men should be students all their lives, and the spirit on which all their studies should be based was a feeling that, to do honour to their own position, they must aim at the fullest development of the faculties which led them to adopt the career of an architect. Nothing that was indispensable to it should be left out of the curriculum of their studies. If their general education had been incomplete, they must endeavour, by private study, to make up for it; for any general want of mathematical or literary knowledge, would impair their capacity as artists. There was no doubt that the over-practical character of every pursuit in this country affected very much their architectural education. They should not rest satisfied with the *quasi* material teachings of daily office practice. More attention to the study of theory would save them much useless labour, and teach them the better to what points to direct their practical studies. Time should be devoted at the outset to threading of the elementary professional works. It was difficult to point out any standard work for the purpose. Perhaps a series of lectures on the art and science of architecture—such as University College afforded—was the best means of acquiring this. A common defect in the architectural education of this country was the little attention bestowed on the means of expressing our designs. Such advantages as perspective and colouring might, perhaps, be too much sought after by architects on the continent, to the detriment of more serious studies. Still they might serve not so much to catch the public eye, as to enable us to realize fully the effects and defects of our own compositions. As regarded the question of studies for artistic compositions, he believed that, besides a general study of styles, it was extremely useful for the junior student to habituate himself to the study of a special style, as it was difficult without to acquire a perfect harmony of composition. This should be done without too much exclusiveness, so as not to impair our capacity of learning from every style, the beauties of architecture being scattered throughout every school. Travelling and more extended professional experience would impress on us the fact, and would lead us to study the several features of architectural composition by themselves, and weave them into originality and harmony, instead of accepting ready-made the arrangement of any special style. In fact, no cycle of artistic studies could be complete until we had arrived at the point of analytic capacity, that enabled us to study instead of merely copying. Thus we should no longer pay so much attention to the decorative details with which early studies had stored our memory, but the main outlines of our composition would receive more of our

attention, and we should become architects in truth, instead of mere architectural decorators. The advantageous result of this would be, that we should produce more real effect at a much less material cost. He had often been struck with the manner in which the ancient Italian architectural masters arrived at the proper point of self-denial, of hardly doing more than indicating the general lines of buildings, the decoration of which they left to the warm effect of paintings, instead of endeavouring to acquire too much prominence by the design of much more expensive and much colder architectural carving and sculpture. From the consideration of such rules of study he would advert to a more real and most important part of their education, namely, architectural travelling. His experience perhaps entitled him to be heard on that point. Ample time should be bestowed upon travelling, and the want of it was one of our national defects. It was the general fault of the profession to travel too quickly. Other professions were not given to this fault. It was necessary to acquire gradually and properly the experience of foreigners in a profession embracing so many minute details; to live with them and learn their language. Much more real profit was derived from spending the same time in a suitable centre of architectural note, than in subdividing it among a number of localities. It was astonishing how real intelligent travelling showed the new studies they had to make, and led them to appreciate duly the ancient schools of truly artistic countries; while the mere passing hurriedly through them often left them in blissful ignorance of their own deficiencies. Painters and sculptors usually resided a long time in Rome. One great professional drawback was the national fault of expensive travelling, which was certainly the least intelligent travelling of all. True artistic feeling enables us to satisfy ourselves without so many material means as non-artistic persons resort to: we should learn that public estimation appreciates very differently the dignity of a true artist, and that of an individual who, for want of any other title to social utility, is called a gentleman. We should soon see in such a cosmopolitan artistic centre as Rome how thoroughly this was understood by the artists of every other nation. They ought to be able to undertake real professional travels at the same rate of expense as at home. In conclusion, he would call attention to the immense advantage to be derived from mutual exchange of information, such as was afforded them by the Architectural Association. The task of preparing papers for meetings compelled them to put more order into their studies—brought together as into a nucleus the scattered notions of bygone studies, and reflected new lights for the information of others. With a view to the proper development of the resources of the Association, he thought they should endeavour to carry out a code of rules in connection with matters of professional etiquette and professional competitions. The Association had already made a highly laudable effort to establish some sort of legislation on these matters, and he hoped the question would be taken up again and successfully carried out. After recapitulating the topics for papers to be read in the syllabus for the session, the chairman resumed his seat amidst applause.

Mr. Kerr congratulated the members on the commencement of another session, and was pleased to hear what had fallen from the president respecting the very important subject that formed the basis on which the Architectural Association was founded. There was no profession of equal importance in this country in which there was the same amount of what he would call culpable want of education. Architecture in the present day occupied a position among professions and avocations which was somewhat singular. They were architects, scientific men, and men of business all in one. They occupied a position midway between pure art, pure science, and pure business. They were quite as much artists as those who were purely artists; they required to be as purely scientific men as those who were scientific men; and as men of business they required to be possessed of all the tact and skill displayed by men of business. If, then, a scientific education—that was to say, an education on statistic and elementary principles—was the rule of the age, as it unquestionably was, *à fortiori*, it was necessary that in a profession such as architecture, a system of scientific education should be established, seeing that they had to acquire knowledge that was threefold, and which was, in some degree, antagonistic in its principles, if not in its application; and they had to possess, or if not to possess, to acquire, a threefold power of mind, which was scarcely required to be possessed in another avocation or profession. And yet, as was unquestionably the fact in this practical country and age, there was no systematic elementary practical mode of instructing the young architect. Our education was desultory in the extreme. It was devoid of all system: it was devoid of everything that could conserve it, or that could transmit to one generation in a concise and systematic form the require-

ments of another as the basis on which itself should work. However, in the absence of this scientific education, the Architectural Association held an important place in relation to the profession. When the Association was first established, it was established in the full view of a want of proper means of education,—as an indifferent means, perhaps, yet still the best that could be commanded, to obviate the want and supply the desideratum. As they could find no masters who could instruct the pupils, they called the pupils together to instruct each other. For a good many years the Association had met there with great success. Papers had been read and able remarks made, and a class of design had been established; and as he had not heard it mentioned on that occasion, he hoped it was not out of existence. ("No, no.") The class of design had been operating many years with very gratifying results, and a feeling of good fellowship and friendship had been created amongst brethren in the profession within those walls which would, no doubt, produce lasting benefits for many years to come. There was a point to which on the present occasion he wished emphatically and practically to refer, namely, that there were two great classes of designers in their profession. So rapidly did the progress of change proceed in their profession, so much more rapidly did fashion advance and progress than in any other art or science, that a generation which, in ordinary human life, and in the ordinary history of human thought and development of human action, was heretofore a cycle of some thirty years, was now, in the present ratio of accelerated action, brought within five or six, or ten years at the utmost. We should find the man who was now amongst us in the full vigour of imagination would in ten years' time be thought one of the old school; while, on the other hand, a man who ten years ago was at the head of his profession, was now—and they could recall half a dozen names—numbered amongst those of the old school. Consequently, a man who has advanced beyond a certain point of the profession, has got so thoroughly into the obsolete school of design, that if he does not progress with new principles, he cannot expect to keep up with those whose imagination is newer, and more fresh and fertile. The two great classes of practical designers in the profession to which he alluded, were those who designed for themselves and those who designed for others; and the explanation he had given regarding the rapid progress of art was the excuse that should be made for those more able men who are now obliged to work by the hand of others. Many remarks he had seen in print were tainted with great ill-feeling and discouragement towards those who were more advanced in life than some of those present; and he therefore took that opportunity of referring to the subject if for no other reason than to show that those of them who were not advanced beyond middle life did not wish to cast discredit on those who were more advanced in years, or who were unable to do the work of imagination by their own hands. If they looked around the Architectural Exhibition, they could distinctly trace the handiwork of one and another that they knew; and they could, moreover, trace, and see recorded on its walls, the valuable fruits that had resulted from the influence of the Architectural Association. Many of the young men who sent exhibitions there had been members of the Association, and many of those who were unknown to fame, and did not appear in the drawings or in the leading designs worked out for others, had acquired the style and spirit of that design in the schools of the Architectural Association. The peculiar circumstance from which this had arisen was this—the style of architecture progressing during the last ten years had been essentially the Picturesque. Fifteen years ago, at any rate, they were brought up in the classic school of their art, and were taught certain severe principles of criticism and aesthetics, consistent with economy, but inconsistent with the Picturesque. When the Gothic was first introduced into general practice, they would remember how classical it appeared, how symmetrical it was, how dependent on mere form and proportion, and on that style of design that had been practised in the classical school; but gradually this was lost, for the Picturesque is the essential principle of the Gothic. The Gothic became more Gothic, and still more picturesque, until now we had reached the limit of the Picturesque; and it would have been altogether landed on absurdity had it not been for the overruling influence on the part of young designers, in which he saw very much the influence of the Association. They remembered how the Romans, having put the Picturesque on Greek architecture, landed in a misapplication of details. They would remember how the Greek architects landed on all manner of eccentricities and absurdities, and they would still more plainly perceive how the Renaissance revivers of Classical architecture, in endeavouring to make it picturesque, which was, perhaps, essentially at variance with it, rendered it altogether



useless to art, and retarded rather than advanced it. It would have been the same in the country during the last ten years in the practice of designs, if it had not been for our young men, and that was very much the reason to which they might attribute the success of the Association's operations. It had pained him very much within the last year or more to hear of the decadence of the Association. He would, however, remind them, if periodically seasons of decadence appear, not to be discouraged thereby, as it was the mere natural process of cause and effect, to be observed in all societies, of much more importance and of less importance than their own. Old members had their energies and interests exhausted, and younger members were not found to come in with the same interest. The stone set rolling at first on level ground by the impetus of force, required a renewal of that impetus from time to time to keep it rolling, and so it would be here. They would find practically, in every year of their career, that they would have to establish some new principle of policy, or some new phase of practice, to be worked out with a reduplicated vigour, and to gather round them nearly a new class of that membership for which the Institution was originally founded. He was glad to hear that the Association was seriously entering the question of education. Some twelve months ago he memorized the Institute of British Architects on the question of education in his own view of it, and he received, as every one did, a very polite reply from that body, stating that they had had the matter under consideration for a very long time. He meant seriously to say, the Institute of British Architects had been considering this question for a very long time, and as they had come to no result, it was high time they called in the assistance of somebody else. He would now say a few words on one of the greatest questions connected with a culture during the past year, he alluded to competitions. He was not one of those who considered the competition for the Houses of Parliament degree barren of results, or that it was a failure or a blunder. On the contrary, he considered that competition, even had it been altogether a delusion, was one of the most important to be the Government could confer on it. He said expressly, and the expression would be better understood here, and have a more significant force—that it was a class of design on the very grandest scale: architects were called upon from all quarters of Europe, and this country, from in a competition of a subject which he undertook to say—there might be a difference of opinion on the matter, they understood to be a palace of the grandest character, and of the highest architectural order. When one considered the large number of artists, and of all ranks of merit, to be gathered in, who collected their contributions there, and who made a lounge of it for so many weeks, contemplated each others' works, conversed with others' views, and carried each other's principles, it would say this for the architectural profession, that he never heard of any society who were more coolly and brotherly feeling was displayed, and it could not fail to operate as a powerful stimulus to the progress of art for many years to come. It was only once in twenty-five years that such a competition, on an average, occurred. No doubt the competition that had lately closed was very far in advance of the competition that took place for the Houses of Parliament, the last in this sense being a competition in which the contest would be as far beyond that which had lately been held. Another competition that had given great satisfaction was that for the Wellington Monument. Sculpture was, of all other arts, the one beside their own in which they necessarily took the greatest interest; but that which mainly excited their attention in the Wellington Monument competition was the rivalry of the judges.\* Professor Cockerell was a man whose word carried very great weight in the lowest quarters. He was not only a man of great attainments and great accomplishments, but he was a man of boldness, a man of artistic feeling, and a man they were proud for many years to consider as the leader of their profession, and not only so, but as a prominent leader in fine art generally. Now, Professor Cockerell was favoured with reference to the Wellington competition, and entered against it a most grave and serious protest. It became, therefore, of the greatest importance, that they should consider what was the cause of this protest, and what was the object of it. The cause of it, said Professor Cockerell, was that the principle that seemed to be engrained on the Government mind of this country was the Government mind should decide questions of art. There could be no doubt that the principle was eminently sound at the very best, in this designing decisions on high art to Dukes and M.P.s and Doctors of Divinity, and that sort of thing. They were all

very well in their particular vocation, but when they came to the question of sculpture and architecture, what were they?—it was a mere mockery to say they were judges. In their competition they put on one architect, but in the competition for sculpture they put on no sculptor at all. They conferred with Professor Cockerell, and he did not marvel that Professor Cockerell, placed in that position, should feel in his own heart his responsibility to his profession, to the public, and to his boy, and that it was incumbent on him, perhaps, against other feelings that induced him to be silent, to come before them in the bold manner that he did, and to denounce a system that was absolutely rotten at the core. Mr. Bernal Osborne, famous for his witty sayings, said the other day he never had attained to much influence in the councils of this country because he was not a Brahmin. There was a great deal of truth in that with all who were Brahmins as well as others, and it was their duty to follow up Professor Cockerell's protest and leading, both privately and publicly, and to express their aggregate opinion that they were not content to rest any longer under the judicial decisions of the Brahmins in matters of art. He had been happy to hear suggested what had indeed been suggested many times before, and which was a grave matter if properly carried out, although perhaps open to objection and criticism—that a trades' union—he used a plain expression, for it went farthest in the end—should be established among those of them who were more engaged in competitions than others, in order to defend themselves against the system of decision that prevailed. If the profession were to raise some principle of law for the government of competitions, now was the time. There was a law for competitions, there was a law for everything, only it required to be written and acknowledged. The law of nature might be supposed to be the most incomprehensible of laws, and yet there had been men who, in the solitude of their studios of 6 feet square, had produced on the volumes which now form the code of legislation, and which were quoted in sentences and in cases in the courts. Whether this was the time to make a practical move he would not take upon himself to say; but he would only say that as the Institute seemed to decline to do anything in the matter, if the Architectural Association should appoint a few men, with power to add to their number, he should be happy to be one, and no doubt in any others would add their influence, and something effective might be done.

Mr. Edmonstone had listened with much pleasure to the professional comments that had fallen from Mr. Kerr, offering, as they did, some decidedly good rules for the benefit and better progress of the Association. He agreed with him in all that he had uttered, and more particularly in that portion of his remarks that pointed to the necessity of consolidating and establishing on as firm a basis as possible all the different elements in connection with a cultural progress, education, and improvement, and for which they were at present no effective arrangements. One age had given, comparatively speaking, very little to the next: the process of change was continually going on, and much that was good was lost, even if what that was equally so was found in the place. Without doubt, the meetings that took place in discussions there were productive of great good, as well as that arose out of the class of design. He fully believed that the Architectural Exhibition had the greatest good in that way. It might not be very apparent, but its beneficial effects were, so to speak, manifestly felt, as, year after year, the collections of designs and inventions were brought together, and thought over and considered, and a fresh status of perfection and improvement reached. The report alluded to another effect that was making, on which he would say a few words, namely, the establishment of a suitable place where all the architectural societies might meet together. It was a matter that had a most important bearing on the question before them, and he wished to correct a mistake as to what had been said about the terms on which the Architectural Association should join the Union. No terms had been proposed, but it had been intimated that the society was anxious to have them there, and as they were going to build large galleries, 120 feet by 40 feet, it was thought that 500, a year, or a guinea a night, would not be too much. He hoped, therefore, there would be no misapprehension on the matter, and that the proposal would not be allowed to fall a dead letter. A good deal had passed with reference to giving the Association the use of rooms at the Institute, the library, and so forth. That negotiation was not very well managed, but an opportunity was now offered of doing something else, in which the dignity and independence of the Association would not be compromised, and where they would not be the tenants of another society. No one was looking to profit in the matter, but the main object would be sadly defeated if an association like the Architectural Association, by any reason whatever, were left out of the Union,

which was working slowly, but certainly if all set their shoulders to the wheel; and he hoped that by this time next year the *conversations* would be held under the roof of the Architectural Union.

The Chairman said they were all desirous to dwell together as brethren, and he considered that the scheme of the Architectural Union would benefit, not only the Architectural Association, but the profession generally. The great end was organization and unity, and identity of place was one of the easiest means of effecting it.

Mr. C. H. Smith saw around him many young men members of the architectural profession, and he was induced to offer a few observations, fearing that they might be deleterious in their professional pursuits by some remarks that had been made with too much weight on the subject of architectural education. It might be unbecoming, perhaps, on his part, to say anything about education, seeing that there were some of the older members of the profession, now numbered with the illustrious dead, who had deemed, not himself, but such as he, among the uneducated class of the community; and as regarded what his own individual education had cost, he might perhaps be ranked in that class. But he had had his eyes open all his life, and had tried to make good use of his head, and he would impress on the younger members of the profession that those who waited to be instructed and taught would know but little. They must teach themselves and learn, for those who learned by their own efforts and pursuits were a generally the best informed and educated. If we looked at times past, what was it taught the Greeks to arrive at their perfection? The Romans did not copy what the Greeks did; and what grew out of this?—something more refined in the science of architecture, the Gothic of the Middle Ages. No one, he thought, would differ with him in opinion that the architecture of the Middle Ages possessed in real science in it than architecture at any time in the world. There was no style of architecture at any period ever brought to such perfection with such scanty means. Again, what was the education of the class of people, the monks and ecclesiastics, and others, who erected York, Salisbury, and other great cathedrals? why, he believed they never passed the threshold of their own doors, or, at any rate, the threshold of their own country. Learning was common among them, but they did not have a classical education. If we looked at the practice of those men in this country who had received a high education, we should find that, generally speaking, they had done less for a cathedral than those who had risen up by their own self-taught strength, and those who had educated themselves. There was an architect now dead who had a number of capitals at the end of his name, and even the initials R.A. who boasted that his education had cost 10,000*l.* He had spent many years in colleges, and prided himself on his scholarship, and yet that gentleman in many competitions was surpassed and defeated by those architects who were wholly uneducated. With all his 10,000*l.* worth of education he was not able to compete with the men who had been educated, as it was called, in the chandler's shop style, while the men who were so designated had risen to the head of their profession. There was far more to be done by self-culture than by all the colleges in the world. One important thing was to know one's own country:—

"About to see wonders the traveller goes,  
And forgets the things just under his nose."

There were many in the profession who had spent years abroad, without going over their own country. He had just sufficient relish or taste for travel to enable him to value the pleasure and facilities it gave to those who were disposed to benefit by it; but as regarded the necessity for professional education, he thought it was considerably overrated.

Mr. Edmonstone would add one fact respecting the Architectural Union. The donation fund was a matter of great interest. It was first of all formed to meet Earl de Grey's desire, and it had received considerable accession. The fund would amount to 1,000*l.*, and there would be 60*l.* or 70*l.* of this that would be devoted periodically to giving medals and rewards to students in art. A feature like this was calculated to commend itself to the Association, composed as it was of young men and students.

After some observations by Mr. Rickman, the proposals of the Sardinian Government first made known in this country through our columns, inviting designs for prisons at Turin and Genoa, were referred to.

The Chairman remarked that, with respect to prisons, those of Italy were considered quite models of their kind: one at Rome especially, was spoken of as most complete; so that in competing in the matter of these prisons at Turin and Genoa, they

\* Published in the *Builder*.

\* See p. 538, ante. The programme may still be examined at our office. We may add, that a schedule of prices of materials and workmanship is appended.



must not overlook the ability displayed by Italian architects in that department.

Mr. Kerr explained that, by what he had said on the subject of architectural education, he did not mean Latin, Greek, or Italian, but practical systematic instruction. Without that, how could any man be said to be instructed at all?

Mr. Benwell recalled to the recollection the career of Sir Christopher Wren. That luminary of architecture began the profession at a late period of his life, and we might be perfectly sure that he never would have succeeded in the brilliant way he did, had he not been primarily educated in the highest possible manner. It was the primary education of that great man that laid the basis of his fame, and contributed to the splendour of his career. He commenced his studies at college, and went through all the curriculum of the known sciences of that period; but these sciences were not entirely supreme. He studied the arts as well as the sciences, and it was because from his early career he made himself an anatomical draughtsman, that he became such a master of his pencil, that when he took to their own profession as an abstract study, he had the best basis to work on, and was, in reality, a scientific and artistic man before he came into the profession. Now, if we went on in the system of education that prevailed in this country in the present day, the great fault we were most likely to fall into was, that we should make our architectural students too scientific; that they would be directing their studies to geography, chemistry, mathematics, and mechanics to too great an extent, and we should be told of the gentleman on whose education 10,000*l.* was spent, that his education was too scientific, and not sufficiently artistic. If in our studies the study of art was made pre-eminent, as, indeed, it must be, to succeed in the profession, and to gain the approbation of the public, the result would be to show that the schools of drawing and colouring and anatomy were in *excess* over those of science, as far as architecture was concerned, and that a system of education pursued upon that principle could not fail of being eminently successful.

Mr. Ash, art-workman, thought that one link in the chain of education and improvement had altogether been lost sight of and forgotten. The Architectural Museum, originally established in the metropolis for the study of art, had been, comparatively speaking, annihilated, in his opinion, by its removal to Brompton. Architecture embraced not only artists, but artisans; the fingers of the art-doer did what the mind of the art-thinker thought. There ought to be a class for practice and working drawings, where the artisan might join with the junior architect. There was no bone, no muscle in modern French and Roman art, while, if we looked at home and saw Gothic rising, it was Gothic with its errors perpetuated. The architect of the present day had to do his work too much by contract, by yard, and by square; and if they intended to move in this new question of education, they ought to send circulars round to every building firm, stone-mason, and bricklayer, and each, in his class, should be called on to give an elementary lecture; and then we should not want class-education, and should hear the practical thoughts of practical men.

#### SANITARY CONDITION IN THE NORTH.

The progress of the country is at the present time very surprising: those who travel through the land will notice the most extraordinary changes. Large neighbourhoods are springing up: many towns, a short time since insignificant, are increasing to a wonderful extent. Some places, however, seem to be standing still, although the railways have been brought to their doors. Durham, for instance, has not advanced. In York, although the railway whistle is constantly challenging the Minster bells, the place may be considered as almost dead. Men stand at the corners, or more listlessly about the streets, who lament the change which has taken place since the claxon horn of the coach-guards echoed in the ancient streets. Once upon a time, the King's Parliament was held at York, and for long after it was considered a capital city by the rank and fashion of the northern and midland counties, for when conveyance was not so ready as at present, the people of the north of England were content with this far-flung town, instead of attempting to reach London. Improved roads and swift coaches led the fashion of the whole land to London, and the importance of York in this particular gradually declined. Still it continued to be a bustling place; the inns were thronged by carriage and coach passengers, who were glad to rest on a long pilgrimage, and view the beauties of the place. It was also the chief thoroughfare for goods both to and from the south: the introduction of the railways has, however, altered those conditions. People do not now particularly need rest at York, and those who wish to look at the antiquities, in many

instances make a survey, and are off again without much profit to the place.

The now almost neighbouring town of Darlington is spreading in various directions. Large manufactories are rising up; they are, as a gentleman observed, "waking up." Newcastle-upon-Tyne, Sunderland, and other places too numerous to mention, are busy scenes of industry, which are adding to the wealth and power of the nation. In York, and some others of the cathedral cities, the larger and poorer part of the population seem to be sinking into poverty and idleness. No one can blame more than we do the symmetrical beauties of the Minster. We also like the glimpses of the ancient wall, the gates, and picturesque clumps of houses, &c. but cannot fail to regret, that when other towns are prospering, York, and places which are similarly situated, should be allowed, so far as the population is concerned, to fall into sleep, more particularly as we feel sure that manufactories may be made handsome architectural features, and that they can, by using proper means, be carried on without giving annoyance from smoke. It is said that the fear of smoke has weighed with those who have the leasing of lands in the old cities, which has been the means of preventing their advancement. However this may be, there is no doubt the manner in which our old and empty lands are let, requires great improvement. It is satisfactory to think that, notwithstanding the dangers of York, sanitary improvements are going forward. In various parts the sewers are in progress, and these are constructed by shafts so situated, that the streets are not obstructed.

When looking at some of those things in a picturesque part, we were startled by the loud tolling of a bell, and the sonorous voice of the city bellman, who was proclaiming the loss of a child; this functionary was dressed in a gold-laced coat which is not surpassed by any London beadle (large coat) that added to the dignity of the costume; this officer politely offered us his escort through the old parts of the city, and visitors to York who have only a short time to stay will do well to avail themselves of his services as a guide.

We found that those parts occupied by the very poor, although still requiring care and attention, are not in the deplorable condition of many places; the authorities should see, as the sewers are completed, that the inhabitants, both rich and poor, communicate with the main drain; the innkeepers should be very careful on this point, and also in providing a better system of ventilation; for it is very dangerous for travellers through fresh air to be lodged in houses where the atmosphere is impure. Many will have experienced the heavy and oppressive air, if they rise early in the morning, before the doors and windows are open, which did some of those places of public entertainment. The water-supply of York is greatly improved.

At Darlington, an extensive scheme of drainage is in course of progress; the water has been brought from a fresh source. It is arranged that all the drainage shall be taken quite clear of the town. Here, also, the drainage of each house into the main sewer should be strictly insisted upon, for the place shows every indication of soon becoming a large manufacturing town, of considerable population. The church here, which has a very fine spire, has been sadly disfigured by some ugly-looking houses which have been built very close to it.

It is really terrible, when taking a sanitary glance at the adjoining towns—Newcastle-upon-Tyne and Gateshead—which have twice been factually ravaged by the cholera, to hear the accounts given by the people and the picture drawn by the streets desolate, the people becoming so elated that they refused to assist neighbours in distress; a son has been obliged to perform the last sad offices to mother and sister; those connected with the graveyards extort money from the poor; those who could afford it rushing to surrounding places, and finding there a difficulty of obtaining shelter if they came from Newcastle; many wisely encamped on the adjoining moor; business was at a complete standstill. We will not enter into harrowing details, but the accounts have all the peculiar features of the Great Plague, of which we have such faithful reports.

It is now four years since the disease visited this neighbourhood, and much longer since the first outbreak; we had hoped, however, that, in the course of time, since even the last attack, vigorous measures had been used by the officers of health, and also by the corporations of the two towns to prevent a future visit. Such, however, does not seem to be the case, for nothing that we have seen has equalled the state of filth and neglect which met the eye during a walk, particularly through some of the streets on the borders of "Coaly Tyne"—Pipewell-gate, Gateshead, for instance. This street from near the south end of the old bridge westward, is so narrow that an ordinary-sized cart and foot-passenger cannot pass at the same time, without the latter being crushed

against the wall. Deaths have happened in consequence of this. On the south side the land rises in an almost precipitous manner, but notwithstanding houses have been built in many instances quite to the summit, which are reached by narrow steps almost as steep as ladders. To convey any idea of the dwellings, which stand on platforms one above the other, would be impossible. Here and there small torrents of a most unpleasant description rush down the gutters towards the streets. Some of this refuse finds its way across to the Tyne, a large part lodges on the rotten pavement, and forms stagnant pools. This should not be so, for surely if the drainage is difficult, the pavement might easily be made good, the streets kept properly swept, and drains pushed, if they will not be clearly, by fine. Other parts of Gateshead are in very bad condition. In Newcastle affairs are but little better, and yet the people do not express any wonder at it. In places where the cholera raged, so far as we could gather information, but few attempts have been made to improve the drainage. As an instance of the continuity—we may almost say madness—which exists, it will be worth while to mention a court leading from Rosemary-lane, near St. John's Church, which shows how little real care has been taken to prevent evil. Twenty-five years or so ago, on the first appearance of cholera, a portion of the ramifications of courts and little squares which exist here was occupied by a school, below which, and on all sides, in the most curious manner, were small tenements. Opposite the school was a "midden-stead," about three yards square, and close to this closet—the only one for the accommodation of a very large number of persons—is situated. There was no drain from it, and the soil and refuse were left rotting. On the first attack of cholera not a single room which surrounds this undrained spot escaped. Many deaths happened; and this was the case again, we are informed, on the last occasion. Surely, we thought, an improvement must by this time have been made. It cannot be possible that this open cesspool has been permitted to remain after so much sacrifice of life: a drain has been made to the sewer, the pavement is made good, and the sink-holes are all trapped. But, alas! such is not the case. There is the same arrangement of the closet, the soil collected as of old. Other spots may be mentioned where the same unimproved conditions may be observed. Have the authorities been asleep for a quarter of a century? What is the use of sanitary inspectors and officers of health, when such things are allowed to continue? Our readers would not be interested in detailed accounts of the unsanitary state of various parts of the town: suffice it to say that at the place wanted great and immediate attention. In one part near Summer-hill, an unbuilt area of some extent is left below two rows of newly-finished drainage, from the backs of which streams of black water were flowing, and collecting in pools, and in some instances running down the centre of the adjoining street. Why do the people of Newcastle-upon-Tyne and Gateshead allow such a state of things to continue? It is both discredit and dangerous. We have confined this notice to those parts which are chiefly occupied by the working people, and those more poorly off, but will return to this subject more in detail.

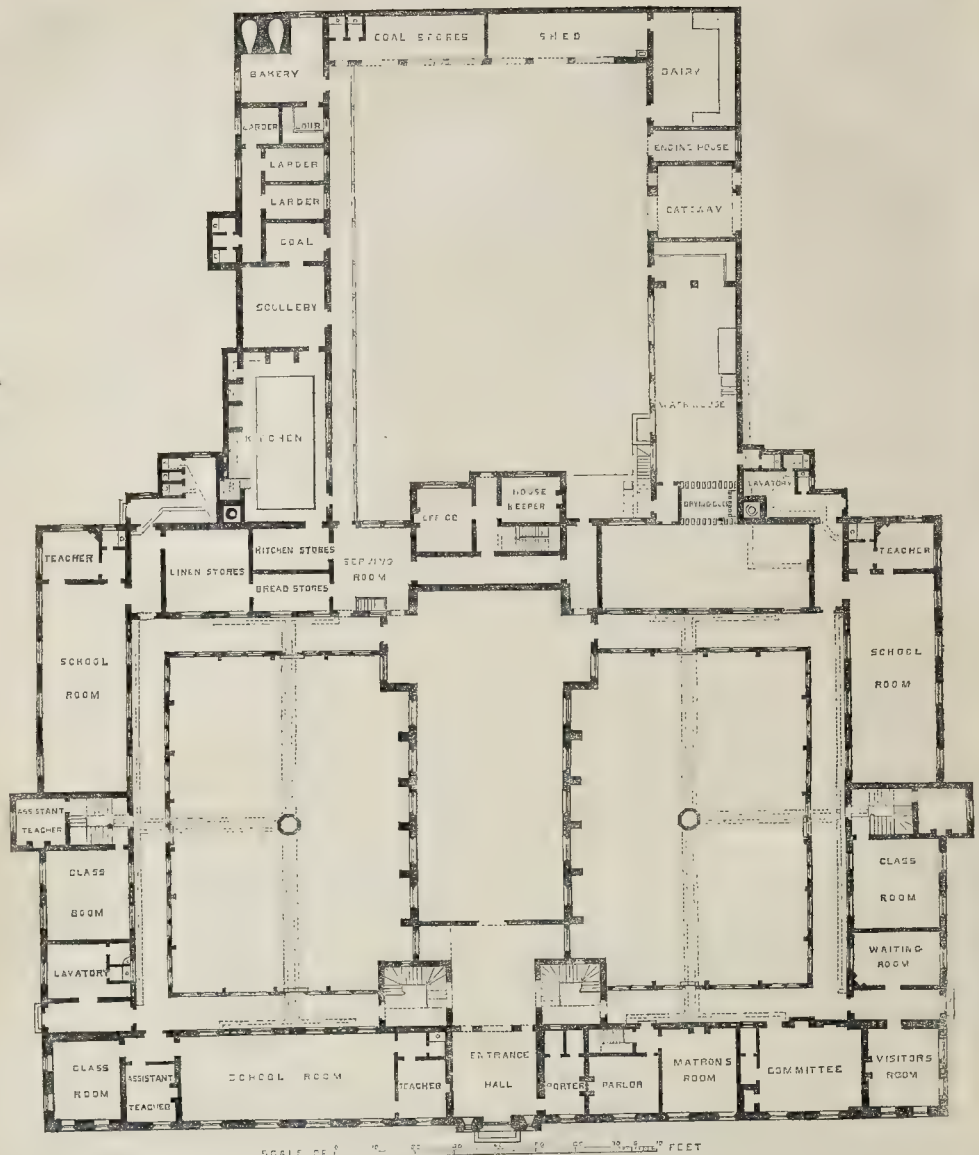
North Shields, which at one time was spoken of by the people of Newcastle as a very dirty place, has been surprisingly improved. We believe that a proper system of drainage has been carried out—the gully holes are trapped, and the streets well swept, the back-slums, too, are well kept, and it is easy to perceive that a careful supervision is persevered in: what seems to be chiefly wanted is the provision of closets to the houses. Many are wholly without accommodation of this kind, and seafaring men complain of the various matters which are thrown upon the shore at morning and night at low tide. The water for general use should also be laid into the houses of the poor; it is not so now. The evil, however, is partly met by numerous plugs which are stationed at the corner of streets, in courts, &c. where water can be bought at a farthing a "skel," full, a vessel containing about three gallons and a half.

#### DISTRICT OF ST. GEORGE IN THE EAST AND ST. BOTOLPH WITHOUT.

At a meeting of the Metropolitan Board of Works, held on Friday, 2nd inst. Mr. John Billing was elected to the vacant district superintendency. There were eleven candidates, who were first reduced to six, viz. Messrs. John Billing, Trevelyan, Richmond, Atchison, Bruce, and Earle: and these by successive votings were eliminated.

MIDDLESEX ARCHEOLOGICAL SOCIETY.—A meeting of this society was held at Hampton Court Palace, on Monday, Oct. 5th, when the attendance was very considerable. The Rev. Thos. Hugo acted as *cicerone*. We may give some memoranda next week.





PLAN OF THE ROYAL VICTORIA PATRIOTIC ASYLUM.

## THE ROYAL VICTORIA PATRIOTIC ASYLUM.

THE foundation stone of the Victoria Asylum, it may be remembered, was laid by her Majesty, on Saturday, the 11th of July last, at Wandsworth-common. The cost of erection is being defrayed out of the surplus of the Crimean patriotic fund, which fund in all amounted to 1,446,985*l.* and the surplus to 178,000*l.* of which latter sum 38,000*l.* were devoted to the erection of the building, and 140,000*l.* to its endowment.

The design of the new asylum is based on that of well-known hospitals in Edinburgh. The view we now give, together with the plan, will explain its arrangement. Mr. Rhode Hawkins is the architect.

An inscription is to be placed in front of the edifice, in Latin, and in English, to the following effect:—

"For the Orphan Daughters of the Soldiers, Seamen, and Marines of the Realm, now and henceforth, England, her Colonies, and Indian Empire, aided by many not subjects of the Crown, erect this Asylum, from a part of the Patriotic Fund formed in 1854-5, at the desire of Queen Victoria."

## A TOWN WITHOUT A NAME.

YOUR correspondent of last week, "A Tax-payer of forty years' standing," lives in the most populous borough in England, containing the longest, broadest, and what might be made the handsomest street in England, running in a straight line completely through the borough. But the borough, though containing half a million of people, has no name of its own as the other metropolitan boroughs have. Though it contains the richest port in the world, it has no corporation of its own. And the great street, like the borough, has no name, being in one place called

"Whitechapel High-street," in another "Mile-end-road," and the borough distinguished by the patchwork appellation of "the Tower Hamlets."

If this borough were incorporated, and a name given to it, property would rise in value, and the state of things mentioned by your correspondent would speedily be changed. The corporation should consist of a mayor, recorder, aldermen, and portmen. I might mention incidentally that seven of the largest if not the handsomest churches in London are within these liberties, viz.—Shoreditch, Hackney, West Hackney, and South Hackney, Limehouse, Spitalfields, and one which has five towers, W. S.

BUILDINGS IN PROGRESS AT LEE IN KENT.—The first stone of a block of buildings to be called Dryden Terrace, according to the *South London Journal*, was laid by Mr. Hugh Lawrence, with masonic ceremonial, on the 22nd ult. The site of the new buildings is in Grove Park. The ground has been purchased for building purposes by Messrs. H. R. and G. Wright, of Lee.



THE ROYAL VICTORIA PATRIOTIC ASYLUM, WANDSWORTH.—Mr. Rhode Hawkins, Architect.









## THE HOUSE OF GEORGE STEPHENSON.

THOUSANDS have travelled miles to visit the birth-place of Shakspeare, Newton, and other men of genius who have passed away—but whose names and works are held in grateful recollection—and it would now be considered a sort of sacrilege to destroy those memorials. It is to be regretted that there are not more of such relics, and that so many have been carelessly destroyed. It is generally thought that we possess a better feeling for these matters now than we did formerly,—but this is not certain. We are told, for example, to the contrary, that the picturesque cottage at Wellington-quay, near Newcastle-upon-Tyne, in which George Stephenson, the engineer, for some time lived, and in which his son Robert was born, is about to be demolished, and a school, it is said, will be placed upon the spot. All must be glad to hear of the rearing of schools, but they need not be built on spots which render necessary the removal of matters of interest. In this case there is plenty of ground of no great value close by, on which the school-house may be built, and the existing building, which is so intimately connected with one of society's benefactors, and his scarcely less eminent son, be secured (with care) for centuries to come. It should be borne in mind that, as years roll on, the fame of George Stephenson will increase. Let the school be built as near to the residence as the authorities think fit, and then the teachers, from generation to generation, may point to the place and mention that in that humble cottage a great man once dwelt, who, by his perseverance and genius, benefited the world, and raised himself to a high position, and advise them that they have the same opportunity, provided they follow his example. Surely the corporation of Newcastle-upon-Tyne, to whom this property belongs, and in whose hands we are told that the dwelling rests, have not sufficiently considered the subject, or they would not have sanctioned the removal of this memorial of two of the borough's most eminent citizens.

## THE BROTHERTON MEMORIAL, SALFORD.

I AM induced to ask you to allow me the opportunity of replying to some portion of the grumblings of your two anonymous subscribers, "A Wanderer" and "Vulcan," whose grievances you permitted to be expressed in your papers of the 19th and 26th ult, respectively.

As a reader of your Journal for many years past, I have observed many complaints on the subject, and have been impressed with the feeling that competitors were not generally dealt with in a fair and liberal manner; and when I found myself in the position of having, as one of the honorary secretaries of the Brotherton Memorial Committee, some responsibility in regard to competition designs, I determined that no just cause of complaint should, as far as my power extended, exist in this case.

The direct and flagrant misrepresentations of "A Wanderer" and "Vulcan" have completely removed from my mind the impression before referred to, and have caused me to believe that it is not generally the want of fair play and justice in the committees having to decide upon competition designs that occasions these continual complaints, but that it is the impossibility of deciding so as to satisfy the unsuccessful and unrewarded competitors, that anything like justice, consideration, and judgment, have been evaded.

"A Wanderer" commences by stating that the decision of the committee seems to him "unjust to those whose designs could be erected for the stipulated sum," and that it is "another instance of a picture design gaining the first prize," and is a "violation on the part of the committee, the judges, and the competitor." He then asks, "Of what use is the massive canopy resting on the hair of the heads of the eight celestial figures?" &c. He then elevates himself to the seat of judgment, and in the language of mortified vanity exclaims, that "it is too bad for the noble art of architecture to be treated in this style," and he then goes on in a most extravagant manner about "Paganism with a vengeance!" a "poor copyism from the heathen days of the Greeks!" and other equally abusive and improper language.

I might simply answer the above by declaring that every assertion above quoted is false, and all the indignant inferences and disparaging epithets are unjust, and totally inapplicable. But I may add, that the canopy is supported on eight columns, at the back of, and forming part of, the angelic figures, as your correspondent ought to have seen by the drawing and the basement plan along with it, if he had wished to criticize with fairness.

It will be satisfactory to your correspondents to know that the selected design can be erected according to the specification for the amount specified; and that a tender to do it at that sum has already been sent in. If it could not be erected for the sum specified, the committee would certainly not feel bound to retain it. Your other correspondent, "Vulcan," appears to

have had his indignation and mortification aroused, and his judgment blinded, by "A Wanderer's" complaints, and repeats more confidently his misrepresentations that "a heavy spire is wholly supported on the heads of eight angels," &c. "Vulcan" even condescends to notice that his design was returned to him "in a heavy storm," and therefore implying that the committee maliciously selected such a day for the purpose of spoiling his valuable design. The "six penny nails" he mentions were small tin tacks. The "glue" he so often refers to as used for the labels and for his direction, was the ordinary gum arabic; and the "glue-brush" was a camel's-hair pencil. I need not repeat his scurrilous language in describing the design, as it is only a very impotent attempt to add greater force, by more positive assertions, to the exaggerated mis-statements of "A Wanderer."

As this subject appears to have been considered by you of sufficient importance to give so much space to it, I think your readers and the public will be glad to know whether it is possible to prescribe regulations so as to be satisfactory to any except the winners of the prizes?—and, if so, what are they, and how should such competitions be conducted? I inclose you herewith a copy of the advertisement, and a copy of a printed circular issued to all applicants. A printed copy of the descriptions appended to each drawing, with a number substituted in the place of the name (where such was given), was sent to each competitor whose address was known; and a copy was hung up in the room, with the drawings and models.

The whole of the designs were exhibited to public inspection in a convenient room of the Royal Museum, Peel-park, daily, from July 13th to August 21st, before the committee made any selection. The selected design, and the model to which the second premium was awarded, have remained open to public inspection in the exhibition-room to this date, having never been removed from the room, notwithstanding your correspondent's assertion to the contrary.

In this competition every member of the committee has been desirous of acting with the greatest fairness; in proof of which I may mention, that the author of the selected design was personally unknown to myself and to every member of the committee; and when the selection was finally made, and the sealed envelope opened which contained his name and address (Mr. T. Holmes, architect, Bury and Manchester), none of the committee knew him, or had ever heard of him, except that his name was the same as the architect's to whom the one-hundred-guineas prize had been awarded for a competition design for the Liverpool Free Library and Museum; and on further inquiry it was found that he was a Liverpool architect, who had been some years in business at Bury, and that he had recently taken offices in Manchester, and was the author of the one-hundred-guineas prize design at Liverpool. After the severe criticism by his brethren in the profession, I think it would be only fair to the successful competitor, and a proper termination of this subject, by your engraving, for the benefit of your readers, the selected design for the Brotherton Memorial. If you will do so, I shall be glad to furnish you with a copy of the original drawing for that purpose."

DAVID CHADWICK, Hon. Secretary of the Brotherton Memorial Committee.

P.S.—I have made this communication solely on my own responsibility, and without consulting the committee; but it may be right that I should say that the Committee of Selection, appointed at a public meeting of the subscribers, consisted of the following gentlemen:—Stephen Heale, Esq., Mayor of Salford; Sir James Watts, Mayor of Manchester; Sir John Potter, M.P.; Sir Elkanah Armitage, J.P.; Mr. Alderman Kay, J.P.; Mr. Thomas Basley, J.P.; Mr. Alderman Higgins; Mr. C. H. Richards, J.P.; and Mr. Alderman Langworthy, J.P. D. C.

## THE CRIMEAN MONUMENT, SHEFFIELD.

WE have already printed the award of the referees in this matter. Let us add that the model to which the first prize has been awarded by the umpire is by Mr. Edward W. Wyon, of London. As the site to be occupied is at the junction of three roads, the composition is triangular. Its main feature, says the *Sheffield Independent*, is an obelisk, which, with a lofty base, would be 40 feet high. At the foot of the obelisk stands an angel, 11 feet high. The figure stretches forward, with each hand giving a wreath, designed to recognise the services both of our army and navy. At the back of the monument are doors significant of a tomb. On either of the two sides of the triangle are bas-reliefs, which it is suggested should consist of representations of Alma and Bomarsund. At each angle are tablets, for the names to be recorded. At the foot of the obelisk, but not at the base of the structure, are cannon and other military emblems.

The second prize is awarded to Mr. Goldie, of the firm of Weightman, Hadfield, and Goldie. Its base is

\* This we will do.—Ed.

octagonal. There are four ascents of steps, with four bastions interposed, each bastion supporting cannon. The pedestal has four faces, on each of which are bas-reliefs representing Crimean actions. The names of the fallen are inscribed beneath suspended garlands on projecting buttresses or pilasters at the angles. The pedestal has its base moulded (with stone seats between the buttresses), and its cornice sculptured with the national emblems. At the four angles over the buttresses rise square detached pedestals inlaid with marble, and having moulded bases and foliage capitals. These support niches carried by marble shafts, and protecting statues 7 feet high representing the allied kingdoms. In the centre of these four niches rises the main feature of the design. Upon a cluster of coloured marble columns, with an octagonal granite shaft in the centre, is a large canopied niche. It is richly moulded, arched, crocketed, &c. with angels bearing the shields of the allied kingdoms in the pediments of the canopies, with lions on marble shaftlets supporting gilded vanes at the angles. The canopy consists of a pyramidal stone roof, bearing as its finial the crown and orb of England. Beneath the gabled roof of this canopy sits throned upon lions a colossal female figure representing England victorious, resting on her half-sheathed sword and crowning her heroes. It is proposed to adopt the portrait of the Queen as the head of this ideal figure. An inscription generally commemorative of the objects of the monument runs round the pedestal at her feet. The materials for this structure are Aberdeen granite, Cornemara and Derbyshire marbles, and Darley Dale stone. We believe that the committee have unanimously adopted the latter design as that which shall be erected.

## BLACKBURN INFIRMARY COMPETITION.

MORE than seventy designs have been received, we understand, and have been open to public inspection. Mr. Lang, to whose letter on the subject we have already referred, says, "A very few are excellent in their internal arrangements, superior indeed to any hospital erected in this country. These evince great labour and careful study on the part of the architect, and a complete appreciation of the requirements of a receptacle for the comfort and cure of the sick. . . . The great majority, although very compact, and therefore suitable for a mansion or a hotel, could never be adopted as designs for buildings for the numerous sick without dropping their character as 'charitable institutions.' Pray let the buildings spread out, the land is cheap enough; avoid unnecessary dead walls as you would the plague, and hate a passage between rows of wards as I do hospital gangrene."

Great complaints are made as to the manner in which the drawings are hung. One writer says,—"Five of my plans are missing, not exhibited at all, and one of the five happens to be the important. In addition to this, four plans of those which have been changed to receive exhibition are hung in one place, and two in another. How, then, is it possible for public opinion to estimate one justly? Instead of my plans being hung in a series, here are four in one place, two in another, and five not to be seen. Nor am I alone badly treated. Of several descriptions I notice palpable omissions. Of one I vainly endeavoured to find the ground-plan."

The editor of the *Preston Guardian* confirms the truth of these statements, hints at the exhibition of much unfairness in the hanging, and calls upon the committee to refer the designs for selection to a small number of surgeons and architects, and accept their decision. We can scarcely believe a statement which has reached us, that the decision has already been made!

A bazaar has been held in the town in aid of the funds, and has produced the handsome sum of 2,500*l*. A larger amount will be available for the building than was at first anticipated.

## WELLINGTON MONUMENT.

WHILE reading Mr. Boutell's remarks upon the designs for the Wellington monument, exhibited in Westminster-hall, I hoped he was about to remove all doubt as to what kind of monument would be really suitable to perpetuate the memory of the noble duke; for I conceive there must be much uncertainty felt upon this point, if I may judge from the various opinions which have been expressed. I was, however, much disappointed when I had read the description of his own design. In fact, I feel more assured that the sculptors are not so very far wrong in their notions of what a monument should consist of, as some of the critics suppose. It is manifest that monumental design should not usurp the place of history; nor should a monument be expected to record the events of a man's life. This is one fault in Mr. Boutell's design. It enters too much into detail, attempting to commemorate, it would seem, others as well as the duke. I should object also to a reclining statue, it



being a long worn out idea, repeated *ad nauseam*, conveying the idea of neither life nor death. I ask if the duke was ever known to be in the position and dress at the same time, as Mr. Boutell would represent him. If not, and often so, such a description must convey a false notion of the man. Then his design could not be properly executed for the sum proposed, and if it could it would be much too crowded to be chaste and elegant. I agree with him that the monument should be classical in its character, but I cannot perceive this in his design. What is the character which is suitable to St. Paul's Cathedral? I reply, by saying that most of the best monuments there already are suitable to the building, and that nothing but want of taste and ignorance could have denounced them, as some critics have lately done. I believe that no man now living has a better notion of what a monument ought to be than Flaxman had; and what do we see in his designs? A grand outline of the person and character of the deceased, as they appeared in the life. All little matters, such as trifling events, family descent, &c. are regarded as unworthy of the one grand idea. With this groundwork a lesson should be taught to the living; and I cannot but think that the lesson the duke's monument should teach, may well be founded upon the motto of his own coat of arms, "Virtutis fortuna comes." D. H.

#### THE SANITARY STATE OF CLERKENWELL.\*

THE population of the parish of Clerkenwell, in 1851, was 64,778, and at the end of 1856 is estimated to have been between 60,000 and 70,000. The number of poor in the district is large, the population being almost entirely engaged in manufacture. Costermongers, in considerable number, here live in the midst of dirt and filth, intractable in sickness, and a plentiful source of metropolitan thieves and ticket-of-leave men. They spend the least possible money in rent, and hence live in the most wretched hovels, quite unfit for human habitation. The other sanitary conditions under which they are placed are equally bad. The number of inhabitants per acre in the district, is about 180, which is by means so dense as various other parts of the metropolis, such as St. Giles's, 221, or East London, 290. The number of houses in 1851, was 7,549, giving eight persons to each house. To have preserved this relation, 647 new houses ought to have been built by the end of 1856; but while very few have actually been erected, many have been pulled down, so that the district is more crowded than in 1851; and many of the houses are close and crowded, as in courts, ill-ventilated and extremely dirty. Walls of rooms covered with stains of destroyed vermin are quite an ordinary sight. Drainage there is either none, or it is very imperfect. The soil is saturated by foul cesspools evolving the most offensive odours, and sometimes there is but one closet for fifty or 100 persons; often none at all. In some houses donkeys occupy the lower rooms and human beings the upper. Two-thirds at least of the houses in the district are described by the medical officer, from whose report we quote, as being in an unsatisfactory state in regard to such particulars as those instanced. Even were many of the houses cleaned, they would be quite unfit for human habitation, being so small and confined.

"It seems," remarks Dr. Griffith, "as if there were some difficulty in general in providing proper dwelling-houses for the poorest classes. The model lodging-houses and model buildings are beyond the reach of the very poor. What we require is the provision of two rooms, at a rent of between 1s. and 2s. per week. Why does not some philanthropic individual organize a company to provide these? If the present dwellings of the poor were in a more perfect sanitary state, more rent would be obtained than at present, even if the charge were less; for the intervention to employment, occasioned by sickness, death, and burials, arising from their wretched condition, would be done away with. One small model lodging-house exists in the district; but the rent of the apartments (5s. 6d. and 6s. per week), is too great for the poor to pay."

The New River water forms the general supply of the district, and on the whole this is, perhaps, one of the best kinds of water to be had as yet in London. The amount of organic matter in it Dr. Griffith considers to be as small as possible, and the water is clear and sparkling when filtered, as in the New River reservoir. He, therefore, does not agree with the Board of Health report of its impurity. No article of diet, he remarks, is absolutely free from impurity—a slice of the finest bread contains millions of fungi—the entomozoa are but minute lobsters which die as soon as they enter the stomach, or if boiled, they become red, and are undoubtedly nutritive. This is

precisely what we semi-seriously urged some time since, while speaking of the New River water. The very air we breathe abounds with the germs of the lower plants and animals. Microscopic organisms taken into the stomach, urges the reporter, have never been known to exert any injurious action on the human health. Living animalculæ, too, have the merit of consuming the dead and decomposing organic matter which would otherwise abound in almost all water—even in distilled water exposed to the air. The quantity of the New River water, however, is still miserably deficient. The company refuse to transmit a more frequent supply, and insist that the landlords of the dwellings of the poor ought to provide larger cisterns. Doubtless they ought, but the company ought also to give more frequent supplies, and the failure of landlords to supply some thousands of larger cisterns only renders it the more essential that the company should do their duty.

The report of Dr. Griffith, on which the present article is based, is an elaborate document, which treats of many subjects connected with the welfare of the district of which he is the medical officer, such as its manufactories, its slaughterhouses, cowhouses, and other nuisances, the sickness and mortality of the district, its edibles, the state of its churches, &c. &c. During the year 1856, 350 nuisances had been remedied, such as choked up drains cleared out, offensive cesspools filled up, foul bones, &c. removed. But it would take ten years, the reporter adds, at this rate of diminution, to remove all the enumerated and specified nuisances which still exist in Clerkenwell.

#### DOINGS IN WISCONSIN.

A NEW theatre, called the "St. Charles" theatre was recently opened at the Market Hall in Milwaukee. Messrs. H. Friend and Brothers, of East Water-street, in that city, have erected a new iron front building to their commercial establishment. The La Crosse and Milwaukee Railroad has been opened to Columbus, and the Milwaukee and Horicon line extended to Berlin. Sheet-iron cars, cushioned inside, are in use on the Baltimore Railroad, and in one instance, one of them, loaded with eighty barrels of flour, was precipitated down a steep embankment without doing it material damage. The village of Horicon has gained 800 in population within the last year. Nine miles of track of the Watertown and Madison Railroad are laid, and eleven more ready for the iron: the entire road to Hanchettville will soon be in efficient operation. The Directors of the Fox River Valley Railroad Company are about constructing the line from its intersection with the Milwaukee and Belvidere Railroad, near Harrisburg, to its junction, at the State line, with the Fox River Valley Railroad of Illinois, a distance of thirty-two miles; Mr. Charles Paine, engineer. Martin's celebrated pictures of "The Last Judgment," "The Great Day of His Wrath," and "The Plains of Heaven," are being exhibited at Milwaukee. Three palatial residences are in process of building at Madison, on Pickney-street, near Mendota side; one for Alderman Van Slyke, built of Milwaukee brick and Prairie du Chien stone, to cost about 15,000 dollars; that of Mr. McDonald wholly of sand stone, at least 20,000 dollars; and that of Judge Cole, mostly of Milwaukee brick, something like 4,000 dollars. The first two were designed by Messrs. Donnell and Kotzbock of that city, and the last by Backus and Brothers of Chicago. A fire on the night of the 5th of September destroyed a manufactory of Messrs. Sawyer at Pittsburg, and property to the amount of 12,000 dollars, whereas insurances were but effected to an amount of 4,000 dollars, and which falls on the local offices. Gray's tannery at Chicago was burned lately at a loss of 400,000 dollars, insurance 12,000 dollars. Rembrandt Peale, the distinguished artist, and the only one living to whom Washington sat for his portrait, is now in his 80th year, and living at Boston: he visited Europe in 1809, and painted Thorwaldsen. The new church of St. Demas and St. Dives was opened on the first Sunday in September: a few of its published recommendations are very ludicrous, and we note the following from the "Evangelist Journal." "The liberal construction of the pews in regard to size is intended to accommodate the prevailing expansions in the matter of feminine costume; and they will be furnished with moveable antique chairs, enabling occupants to direct their vision to any part of the church; and those of an inquiring mind to inform themselves as to the regular attendants at church. An honour entitled the 'Privilegium Ecclesie' is conferred on certain subscribers of 500 dollars per annum, who have the right of entrance and exit by a private door most curiously constructed, leading into a beautifully furnished apartment communicating with the main entrance; and by which means persons of nice and refined tastes may avoid the crowd and dust consequent on a large congregation, &c. &c. The worthy doctor (Good-

as-the-best) insists that a short nap is admissible and preferable to an unequal combat with Morphew; and therefore the antique chairs above alluded to are provided, and so constructed as to afford every facility for its enjoyment uninterrupted."

#### NEW STREETS IN SUB-WAYS.

THE Metropolitan Board of Works having disappointed the expectation of the public during the first eighteen months of its existence, the inquiry arises, Why is it so?

This is a Board composed of gentlemen selected from the various districts they are authorised to improve, especially the streets: it is to carry out new views in our old capital, with active determination to accomplish them promptly, and without delay. But instead of examining the new proposals for improving the streets, the whole system of surface paving has poisoned the deliberations of this Board, and nothing new or modern is properly attended to. Of course, sub-ways are not to be considered for a moment, because there is too much in them that is new. So that gas and steam could have had no place in their assembly; and Mr. Rowland Hill's admirable plan for posting letters would have been lost.

This old heaven must give way to the progression of science, and modern intelligence must win the day. We do not now want old worn-out fooleries,—no oil to light the streets, or horses to draw carriages on roads. This Board must keep pace with the times, and accomplish improvements they were established to introduce, by new plans for new periods.

My experience with the Metropolitan Board of Works is a decided case of the truth of these remarks, in the fact of their blind preference for old-fashioned ideas. They cannot forget them, and forsake them they will not, until the folly of referring to them is too manifest to be longer continued.

After some previous communications with the Board, I wrote a letter, in May, 1856, somewhat historical of sub-ways, with reflections on the difficulties at that moment attending their introduction into London, an extract from which is here given:—

"The rise and progress of this invention were produced in consequence of the continual interruption of the streets of London, and all large commercial towns, from the stoppages in them, for access to the pipes in the ground, and to the sewers, which called for a remedy.

This presented itself to me in 1817, by the construction of sub-arches, in which to place, and get to, them, without opening the ground and stopping the thoroughfares, for which I obtained a patent.

This invention was acknowledged by the public and all scientific men to be quite sufficient for preventing the stoppages in the streets.

The full account of this I published in a volume, and dedicated it to the king.

Since this patent was obtained, the beautiful invention of railways has been established, which has largely increased the importance of sub-arches.

The construction of sub-arches in streets was properly, the work of the Government, under an Act of Parliament; but at that period there existed a Board of Sewers, consisting of about 800 noblemen and gentlemen, together with numerous Paving Boards, of two or three thousand influential men, throughout the metropolis. All of these would be interfered with, should sub-arches be made; consequently the ministry could not stir in the matter at that instant.

In my volume on sub-ways, at page 424, I suggested the entire abolition of the Sewers Commission, and of the numerous Paving Boards."

This bold suggestion in 1828 has since then been adopted. There now are no Commissioners of Sewers, and no Act of Parliament Paving Boards: they are all gone.

But this letter, in May 1856, having new matter, has received no attention from the Metropolitan Board of Works! No inquiry was made into the subject as to the merit of it, or any investigation into the truth of its statements!

Having shown you, sir, how the past has been employed for improving the streets of London, and paving got rid of the obnoxious sewer commission; also of the many-headed commissions of London paving; what remains to be done for the completion of the work?

There still is a difficulty, a considerable difficulty, which exists in the very system itself; in a fondness for old plans, however erroneous and bad. This system must give way to modern views and enlightened knowledge; this corrupt system must be abolished and the schoolmaster come forth to plant usefulness into our proceedings, which has so long been lost sight of, to the hindrance of our progress.

This is the boldest of all the proposals to improve the streets of London.

What! destroy the system itself, which has directed

\* General Report upon the Sanitary State of Clerkenwell for 1856. By J. W. Griffith, M.D. Medical Officer for Clerkenwell: printed by order of the Vestry.



the management of the streets for so many years? Yes; because it is a bad system, and the streets are in a shameful condition as to their capacity to receive the crowds who throng into them. They are all on the old plan of surface paving, which won't do: a better one must be substituted. The method of making new streets upon the surface in old cities, by pulling down houses and committing great wrong to the inhabitants, must now give place to the modern plan of making subway streets below the surface, which will benefit all and injure none.

This can be done by the Metropolitan Board of Works, whose powers, under their Act, enable them to do so.

JOHN WILLIAMS.

#### CHURCH-BUILDING NEWS.

**Leicester.**—A considerable addition has lately been made to Gallowtree-gate chapel, Leicester, by the erection, in the rear of it, of a building of two stories, the lower one intended for a Sunday-school for boys, and the upper for an infants' and girls' day-school. Two class-rooms adjoining, for elder scholars, are also provided, and below these ministers' and deacons' rooms.

**Chelford.**—Messrs. R. B. Edmundson and Son, of Manchester, have just finished a stained-glass window for Chelford parish church, Cheshire. It is of three lights, and about 12 feet high. The subject of the window is the birth, crucifixion, and ascension of our Saviour, and the whole will be surmounted with tracery. At the bottom of the window is the following inscription, which records to whose honour, and by whom it was erected:—"In gloriam Dei. Presented to the church out of regard for John Dixon, esq. by his tenants and neighbours. Anno Domini 1857." The window is to be placed in the new chancel, and on the sides there will be four single-light lancet windows, also of stained glass, one representing Faith, and the others filled with ornament. Messrs. E. and Son have since received a commission to execute two windows for Manchester Cathedral.

**Chesterton (Newcastle-under-Lyne).**—A Wesleyan Chapel, the corner-stone of which was laid on the 19th of May last, is so far completed as to be now open for public worship. It is in the Gothic style. The structure was designed by Mr. Robert Edgar, of Stoke; and the work has been carried out by Mr. John Sale and Mr. James Sale, of Chesterton.

**Colehill.**—The church of Colehill is about to be restored at the expense of the vicar and his brother, Mr. Digby, of Sherbourne Castle, in Dorsetshire. The cost will be 6,000l. The church is to be restored after the manner of Trinity Church, Coventry. There are to be no gorgeous pews for the rich, nor sittings near the door for the poor, but the pews are to be open and free, with cushions and hassocks in all. The readers of English history will know that it was in the churchyard of Colehill Oliver Cromwell planted his cannon and sent forth his thunderbolts against Maxtoke Castle, now in the possession of Mr. John Fetherston Dilke.

**Baldersby.**—The Church of St. James the Apostle, at Baldersby, erected and endowed by the late Lord Downe, with cemetery attached, has been consecrated by the Archbishop of York. The church, which is situate midway between Baldersby and Rainton, and about an equal distance of five miles from Ripon and Thirsk, has on the side of the west end a tower and spire 160 feet high, and is visible from a considerable distance. The style of architecture is the Early Decorated. The architect was Mr. Butterfield. The east window, of stained glass, represents the "Transfiguration," and the west window contains armorial bearings of the founder, and the families to whom his ancestors have been allied. The chancel is lined with alabaster, and on the floor in front of the choristers' seats is a slab of white marble, inlaid with brass, in memory of the founder. In the place of pews there are open benches and ecclesiastical chairs capable of seating considerably more than 500 persons. A peal of eight bells, by Taylor, of Loughborough, is placed in the tower of the church.

**Doncaster.**—The foundation-stone of St. James's Church, Doncaster, according to the local *Gazette*, was laid on the 1st inst. The contract, undertaken by Mr. Wilson, of Grantham, is for 4,000l. The area of the edifice, says the paper just named, "is almost the same as the nave of St. George's, Doncaster, though the dimensions are different, St. James's being 113 feet by 52 feet, while the nave of St. George's is 84½ feet wide, but only 91 feet long. Not only has the church the same architect as St. George's, but the same clerk of the works is to be employed. The contract is entered into with the chairman of the company, but it is understood that he is represented for all practical purposes by his son, Mr. E. B. Denison, Q.C. who, in the first instance, suggested the general design of the church. Mr. Scott, of course, undertaking the architectural details."—The first memorial window in the new

parish church has been completed. It is erected (on the south aisle) by the surviving brother of the Rev. H. Cape, for many years head-master of the grammar school. The window consists of three compartments. The design is the production of Mr. W. Holland, of Warwick. In the tracery there are six different representations, that at the top being "The Holy Father," and immediately below, on each side, "Angels, with harps in their hands." Across the centre, are oak, vine, and thorn leaves, and the base is occupied at each end by two angels bearing mottoes." In the middle is an angel bearing a crown of glory. In the "Consecration of the Temple," King Solomon is seen standing before the altar invoking the blessing of God, surrounded by priests and the children of Israel. Above is "David despising." The side light on the left is appropriated to the representation of the prophets Isaiah and Jeremiah, and David slaying Goliath; whilst the opposite one contains the prophets Daniel and Ezekiel, the historical scene being "Shimei stoning David."

**Rye Hill (Newcastle).**—The church, schools, and hospital of the Virgin Mary, at Rye Hill, are highly spoken of by the *Gateshead Observer*. "The Gothic structure at Rye Hill, designed by Mr. Benjamin Green," says this authority, "promises to be one of the finest architectural works of the ancient town of Newcastle. With its steeple (not yet commenced), it will be nearly 200 feet high; and when, in addition to the hospital (already built), the school and master's mansion are reared, and the grounds (about four acres in extent) are laid out, the eye will have few spots in Newcastle on which it can rest with more pleasure. We would particularly draw attention to the sculptured work of the church, executed with so much softness and feeling in the ordinary freestone of the local quarry. The whole bears the impress of thought and taste. It has that indescribable charm which is communicated to rude stone by a refined mind and a cunning hand; and the Church of the Virgin will survive in after ages, to bear witness that art was not degenerate in our own." The sculptors are, we believe, Lincolnshire men of the name of Peck.

**Kelso.**—The *Kelso Chronicle* states that the erection of a new Roman Catholic chapel in this town will be proceeded with immediately. The site will be on ground belonging to the Roman Catholics at the head of Bowmont-street. The contractor is Mr. Black, of Kelso.

**Alyth (Perth).**—The consecration of St. Ninian's Church, Alyth, took place on the 16th ult. It had been recently erected by four of the congregation, at a cost of 1,500l. It is built on a site, comprehending a burying-ground granted by the Earl of Airlie. It is seen on entering the village from the south. The style is Norman; the architect, Mr. Bryce, of Edinburgh; the contractors, Messrs. Kinnmont, mason; Macintosh, carpenter; and Walker, slater. The church consists of a nave and semicircular apse, extending about 70 feet in length and 40 in breadth, with a vestry on the north side, and on the south a porch surmounted by a tower. It has an open timber roof, which, together with the open benches and the rest of the woodwork, is deeply stained: the whole of the floor is paved with encaustic tiles.

#### CHURCH-BUILDING NEWS FROM WALES.

**Llanfair-yn-Euball.**—The church here has been reopened, after having been restored. It is situated within half-a-mile of the Valley station, near Holyhead, and now forms an object visible to the travelling spectator from the Chester and Holyhead Railway. The church is in the Third Pointed style. It consists of a single nave, 47 feet 6 inches long, by 20 feet wide, outside the walls. The western gable is surmounted by a bell-cot or turret. The church, by the restoration and re-arrangement effected, has been made to accommodate about 100 persons, at a cost of about 250l. In the principals of the roof, which are of old oak, and formed part of the former roof, the curved pieces are continued from the collars downwards, in the thickness of the walls, to within 2 feet of the ground. The other timbers of the roof, together with the slates, have been entirely renewed, and in the north and south walls, new square-headed windows, with foliated lights of the Third Pointed period, have been inserted. The east window has been dressed over, and the upper compartment filled in with stained glass, representing the lamb and banner. The whole of the internal fittings have been replaced with more uniform and commodious sittings of deal, stained and varnished. The architect employed was Mr. H. Kennedy, of Bangor, and the contractors were Messrs. Lloyd and Co. of Llanfair-yn-Euball.

**Chepstow.**—That portion of the Chepstow cemetery appropriated to the members of the Established Church has been consecrated by the Bishop of Llandaff. The new cemetery is situated on an eminence, nearly a mile from the town, on the road leading to the village of Mather, and consists of five or six acres of ground,

with a porter's residence at the entrance. Passing through the entrance-gates, up a centre drive towards the chapels, on the left is the ground appropriated to the Established Church; on the right, the unconsecrated part. The main building is placed near the centre of the ground, and consists of two chapels and vestries attached, with an archway connecting the whole. The chapels and entrance-lobby are built with native Blue Lias, and Bath stone dressings, in the Middle Pointed style of architecture,—both chapels being nearly alike. The internal fittings are of deal, stained and varnished, and the timbers of the roof are stained and show below the ceilings. The buildings have been erected from the designs and under the superintendence of Mr. S. B. Gabriel, architect, and the ground laid out from the plans of Mr. Fenton Hort, of Hardwick House, Chepstow.

**Merthyr-Dorran.**—On Monday, the 21st ult. the parish church of Merthyr-Dorran, near Wnevoe, after being restored, was reopened by the lord bishop of the diocese. The celebration of this event was attended by a large congregation. The church is an example of the local Welsh type of a village church, and consists of a nave with western tower and south porch and chancel, of the Perpendicular period of Gothic architecture, with a few fragments of earlier work. The fabric had fallen into a lamentable state of decay, absolutely unfit for the performance of Divine worship. It has been restored by Messrs. Pritchard and Seddon, the diocesan architects, at a cost of about 427l. The original character has been preserved, the dilapidated portions of the walls having been rebuilt with more additional windows: the roof of the nave is entirely new, and the several gables have been coped with stone, and provided with crosses. The chancel has been refurnished with a vested altar-table standing upon a foot-pace, with stalls for the officiating clergy, and screen at the chancel arch, with a lectern. The nave is furnished with chairs made for the purpose, and a temporary lectern for a pulpit, and the old stone font-bowl has been mounted upon a new base and steps, and fitted with an oak cover, with ornamental wrought ironwork: the bells have been rehung in the tower, and the churchyard put into good order, with the surrounding wall repaired, and new oak gate.

**Velin Fole (Llanelli).**—The new church at this place (dedicated to the Holy Trinity), is now nearly completed. The edifice, says the *Cambrian*, is of a cruciform plan, consisting of nave and chancel, north and south transepts, south porch, and vestry on the north side of chancel: the space between the west end of vestry and the east wall of north transept, which is now left open, will hereafter be formed into an organ chamber (for which preparation is made in the construction), with arches in the transept and chancel walls for the sound to pass through into the body of the church. The external dimensions from west to east, exclusive of the projection of buttresses, are 102 feet 6 inches, by a breadth of 24 feet 6 inches, and the extreme width across the transepts from north to south, is 51 feet 6 inches. The tower, which is at the junction of the nave, transepts and chancel is of the full width of the building, and is carried up a few feet above the ridge of the roofs, being a height of 41 feet, and at that level the timber spire commences and rises 58 feet additional, making a total height of 105 feet from the ground to the top of the vane. The timber work forming the spire is constructed on framed trusses resting on the tower walls, and these trusses or principals are attached and bolted to open arched framing, which is supported on Bath stone corbels built into the tower walls. These arched ribs or framings, are exposed to view from the floor of the church. The church is built of the native stone, of a gray and iron tint. The dressings of the doors and windows, porch, &c. are of Bath stone. The whole of the roofs are covered with Staffordshire tiles. In the east wall of the chancel is a 3-light window, filled in with painted glass. The subjects are "Faith, Hope, and Charity," represented by female figures, each occupying one light, and in the tracery of the upper part of the window are the Agnus Dei, the Holy Spirit represented by a dove descending to the earth, and other emblems. The windows at the west end are also of painted glass, of a scroll pattern, as also the small windows in the upper part of tower. All the remainder of the glass is of a yellowish tint. There are large 3-light windows of varied composition in the gables of north and south transepts. The roof timbers are wrought, exposed to view, and stained and varnished. The seats are open throughout. There is accommodation for about 320 persons, including seats for children, which hold about 100. The pulpit and font are of Bath stone. The passages and the chancel are floored with Staffordshire paving tiles, and the church is heated with hot air. The work has been executed from the designs and under the superintendence of Mr. R. Kyke Penson, of Swansea, at a cost of about 1,900l. a considerable portion of which has been contributed by the members of the Nevill family. The



whole of the work has been executed without contract or contractor, Mr. Richard Nevill, of Velin Vole, having devoted much time to a supervision of the works, in order that the architect's design might be efficiently carried out; and the arrangements made, adds the *Cambrian*, have resulted in a satisfactory completion of the structure—much credit being due to the local mechanics who have been engaged on the work. Her Majesty's Commissioners for Building additional Churches contributed 100*l.* towards the funds, and the Incorporated Society for the Building and Enlargement of Churches and Chapels made a grant of 150*l.* The style of architecture adopted is of the Early Decorated period. The consecration will take place about the middle of this month.

#### PROVINCIAL NEWS.

**Whitlesey.** The town-hall of Whitlesey has been re-erected, from a design by Mr. R. Rowe, of Cambridge. The building has been carried out by Messrs. Bennett and Son, of Whitlesey. The style is Modern Italian, and the material white bricks, with moulded brick dressings: the tympanum over the entrance-door is of Minton's tiles.

**Dundry.** The building of new schools for this parish has been in progress during the summer, and the 29th ult. being the festival of St. Michael, the patron saint of Dundry, was fixed upon as suitable for the opening. The schools, built from the design of Mr. S. B. Gabriel, of Bristol, consist of one room, 86 feet 6 inches by 18 feet; a class-room adjoining and master's house attached. They are in the Gothic style of architecture, and cost about 750*l.* The different works have been completed by the several contractors, Mr. Broad, of Winford, Mr. Weeks, of Chew Magna, and Mr. Henry Wilson, of Bristol.

**Whitehaven.**—At a recent meeting of the Whitehaven Town and Harbour Trust, Lord Lonsdale said, the trustees at previous meetings had determined to erect a floating dock, but some difficulty existed on account of the money. They were authorized to borrow to the extent of 130,000*l.* for an unlimited period, but of late years, since railroads and extensive docks were being constructed, people had better opportunities of investing their money, and for short periods, than when the Act was passed. He would therefore ask the consent of the meeting to a resolution that application be made to Parliament the next session for an Act authorizing the trustees to borrow money on the credit of the harbour dues, on security repayable at such periods as may be agreed upon. The resolution was unanimously agreed to. The secretary read a letter from Messrs. Rendel, stating that during the operations connected with the making of a new wet-dock, &c. they would expect a salary of 300*l.* per annum, exclusive of all actual travelling and other expenses. They also proposed to charge 500*l.* for the drawings and sections which the works would from time to time require. The chairman considered 500*l.* too large a sum for the working plans, and it was moved that a committee be appointed to confer with Messrs. Rendel respecting their charges. Mr. Purcell was instructed to proceed with the quarrel of stones.

**Sunderland.**—The Gray Schools, which were founded in 1823, having been found inadequate to meet the pressing demands of the populous district in which they are situated, have been rebuilt. The old premises have been sold, and the money realized by their sale being added to private subscriptions, and to a grant from the Privy Council on Education, has enabled the managers of the school to provide accommodation for 500 children, viz. 250 boys and 250 girls, with a master's residence attached. The site occupied by the new buildings is the north-west angle of the Sunderland Town Moor. Each school consists of three rooms, one of which communicating with the other two is fitted up with a gallery, and used as a class room. A play ground, play-shed, and lavatory, &c. are attached to each school. The character of the buildings is English Domestic of the middle of the thirteenth century. The work has been executed by Mr. Alexander Thomson, of Sunderland, from the designs and under the superintendence of Mr. J. Asta, of Newcastle, architect. The amount of the contract, including all the school-fittings, &c. is 2,400*l.*

#### WORKS IN IRELAND.

**Dublin.**—St. Joseph's R.C. Institution for the Deaf and Dumb at Cabra, designed by Mr. Charles Geoghegan, architect, and built by the firm of Beardwood, Brothers, is now nearly completed. It stands in the centre of a fertile and well-enclosed tract of between five and six acres in extent, situated in a beautiful suburb bounded by the Cabra road and the high road to Navan. The building is in the Tudor style. It is constructed of solid granite masonry, and rises to an elevation of three lofty stories, independent of the basement. The front, which faces

due south, is relieved from all sameness of aspect by pinnacled gable tops, and by rounded turrets at either end. The windows in each story are faced with red brick, with corbels and mouldings, after the fashion of the old French chateaux and English manor-houses. The chimneys are made to subserve a decorative purpose, being highly ornamented, and the turrets, when complete, will be crowned by machicolated battlements. The front entrance is approached from what will be a spacious lawn. The ground rises gradually to a terraced embankment in the front, allowing of a wide sweep before the great portal, which is gained by a flight of steps, adorned with balustrades in cut granite. The central portion of the building is laid out specially as the conventual dwelling of the Christian Brothers Community. It is completely apart from the section of the house appropriated for the deaf-mute inmates, yet intimately and immediately connected with the asylum department, through the medium of entrances reserved solely for the transit of the community. The school-rooms, chapel, refectory, &c. where the children will be constantly under the care of their teachers, are entered by doors leading to the turrets of which we have spoken. These turrets rise to the full height of the building, and each encloses a self-supporting geometrical spiral staircase of stone, with landings and doorways opening into each story. After passing the entrance-hall, there is a long corridor traversing the entire breadth of the building. At one end of this corridor, to the left, is the great school-room, some 40 feet in length by 36 feet in breadth. This room (and, indeed, all the others) is fully 20 feet in height, the ceiling crossed by iron girders, above which is laid the joisted and varnished floor of the apartment above. At the other extremity of the corridor is an apartment of equal extent with the school-room. This will be used as the chapel of the institution until the committee shall be enabled to erect a more suitable edifice. It is already in course of decoration. The intermediate space on this floor is occupied by meeting-rooms, library, &c. of the brotherhood. Ascending a staircase to the next floor, there is a long corridor, as below; and at either end, over the school-room and chapel, are two dormitories, capable of holding thirty beds each. The intermediate space is occupied by the cells and oratories of the community. There are glass doors at each end of each corridor. The children have no access within these doors. The upper floor presents a precisely similar arrangement, and there are attic store-rooms, &c. The basement story contains the grand refectory and the suite of kitchens and offices at the other end of the lower corridor. There is a wide shoot or passage made in the wall from the lowest to the uppermost story, with landings on each corridor, whereby trays with provisions and necessaries can be drawn up by turning a windlass. There is a hot and cold bathing department, wherein the baths are constructed on the newest principle.

**Portrush.** The ceremony of laying the foundation-stone of an obelisk to the memory of the late Dr. Adam Clarke was performed by Mr. James Johnston Clark, M.P. at Portrush, on Monday before last. The Belfast and Ballymena, as well as the Londonderry and Coleraine, and the Ballymena and Portrush Railway Companies, having received their fares considerably on that occasion, a great number of persons, says the *Coleraine Chronicle*, availed themselves of this opportunity to witness the ceremony. The obelisk stands at an angle of two roads—midway between the Harbour and the Railway Terminus—on an elevated plot of the ground on which the late Dr. Adam Clarke himself built a school-house, which is still standing and well attended by children. The obelisk will have a base 7 feet square and 8 feet high, from which the monument will rise to a height of 42 feet, which, taking into consideration the elevation of the site, give it a mean altitude of at least 120 feet above the level of the sea. Close to the base of the obelisk will stand a life-size statue of Dr. Clarke, contributed by his American admirers. The chapel to be erected at Portrush is from a plan by Mr. W. J. Barr, who is also the architect of the obelisk. Mr. McLaughlin, the builder of the new Town-hall at Coleraine, is to build the monument.

**Tuam.**—The foundation-stone of a new Town-hall has been laid at Tuam. Mr. James J. Boylan is the architect, and Mr. A. Egan the builder.

**Omagh.** The opening of the New Wesleyan Chapel at Omagh took place on the 25th ult. It is situated in the west end of the town, immediately beside the site of the former chapel. The design of the building is Gothic in style, and the principal feature consists in simplicity with regard to detail. The roof is constructed in the modern style, being lofty and showing the principals. The pews have carved Gothic bench ends, and are without doors. The windows, of which there are six in either side, are glazed with enamelled glass, and relieved by borders of amber colour, while those behind the pulpit and in the front

of the chapel have borders of various coloured ornamental patterns. There is a basement story, consisting of school and committee rooms. The contractor was Mr. William Mullan.

**Wexford.**—The first stone of the Crimean Monument was laid on Thursday, the 8th inst. by his Excellency the Earl of Carlisle. The site fixed for the monument is at Ferry Carrig, near Wexford, on the ruins of King John's Castle or Court, and opposite Fitzstephen's Tower, the first castle built by the English in Ireland. The monument is to be erected to the memory of the Wexford men who fell in the Crimea during the last war. The design is in the form of one of the old Irish round towers. Some of the cannon captured at Sebastopol are to be placed at its base, and the names of all the persons who fell belonging to the county engraved on the round tower. The grounds all round are to be tastefully planted. Mr. Willis is the architect. Four stained glass windows by Hardman and Co. have been set up in the church of the Immaculate Conception here. The great east window has seven lights and tracery. In the centre light is represented the Crucifixion of our Lord, with figures of the Virgin, and St. John the Evangelist, the Holy Ghost descending from above, and angels weeping, surrounded by figures of fifteen saints, standing upon foliage of vine work. In the tracery are half figures of Abraham, Moses, and Isaiah, and cherubim with appropriate texts. This was presented by natives of Wexford now in America.

**Ballymitty.**—Two stained glass windows were erected in the R.C. church here last week, by Mr. Michael Hughes, of Wexford.

#### BOILER EXPLOSIONS.

NUMEROUS accidents of late have called my attention to the means necessary for showing when the feed-pump is at work, and what quantity of water is passing into the boiler during the working of the pumps. I, therefore, propose the use of a valve similar to the throttle-valve, or, what would be better, a flap-valve with a lever arm on the outside of the box (forming part of the feed-pipe), with a counter-balance having a tendency to close the valve, and working against a quadrant-face to indicate the position of the valve within. This box should be a trifle larger than the feed and placed so as to be seen by the stoker, but having an area (after deducting that occupied by valve) equal to the diameter of feed-pipe.

It will at once be seen that the water pressure must keep the valve open, and the arm outside will indicate its position on the face of the quadrant; but, if by partial stoppage of the area of feed-pipe the pressure on the valve becomes diminished, the arm will at once indicate, and to what extent. I trust this will be the means of calling scientific men's attention to the evil.

EDWIN MOORE, Engineer.

#### RESTORATIONS IN EXETER.

Sir,—May I be permitted, through the medium of your next impression, to direct public attention to the improvement recently made in the exterior of St. Lawrence's Church in this city? The old plaster which so much disfigured the building has been removed. The walls of the tower and church are built with Haldon conglomerate, and the stones, having been re-cut, are of a fine colour. The tower has been ornamented with Bath stone battlements, with a figure corner. The walls of the church are also ornamented with embrasures of the same kind of stone. A new porch, appropriate in design, has been erected, and an old figure of Elizabeth is placed in a niche over it. The altered appearance of the sacred edifice renders it an ornament to the higher part of the city, as it is one of the greatest improvements that has recently been made in it, contrasting well with the bad taste exhibited in the fine specimen of architectural restoration and plasterers' work seen in the new prebendal residuary, near the west end of the cathedral, and to some extent removes the stigma from the city which the alteration of the registry-office to the prebendal residuary had cast upon it.

The restoration of the church refectory is a practical rebuke to those church surveyors and churchwardens who have a mania for plastering and whitewashing; the last mentioned is characteristically named "churchmen's polish." Another instance might be given where the stonemason's skill could be exercised to advantage. St. Mary Major's Church is in the Cathedral-yard, and in proximity to that fine old building St. Peter's Church. The south side of this church exhibits a stone exterior, whilst the north or front side is covered over with plaster. Surely the parishioners of St. Mary Major only require to have their attention directed to the improved appearance of St. Lawrence's Church, to induce them to set about restoring the exterior of their own church to its original beauty. A few days



ago a workman was seen laying a vile mixture of lime and sand on the walls of St. Olave's Church: better far to let them remain untouched; as, in addition to the depraved taste and offensive appearance of plaster, it tends to promote decay in the stone.\* St. Olave's Church is as capable of being made an ornament to the lower part of the city as the church of St. Lawrence has become to the higher. In the name of common sense, I would ask, what are the members of the Essex Architectural Society engaged about, that they do not exert themselves in such matters?

AN OBSERVER.

#### DEVON AND CORNWALL BANK, PLYMOUTH.

THIS building, which is situated in the leading thoroughfare of Plymouth, was, in its original form, designed by Mr. Wightwick, and carried out under his superintendence in the year 1847. It was erected on the site of old premises, which were entirely taken down, being insufficient in size for the then business of the bank. In 1850 the still increasing operations of the Banking Company called for a further extension of the building; and architects in the neighbourhood were invited to compete, and furnish designs for the enlargement. Messrs. Darnall & Reid, of Plymouth, architects, were the successful competitors; and, under their superintendence, the building was completed early in the present year. The building, as executed by Mr. Wightwick, included one of the porches and three apartments of the bank windows on the ground-floor, and the superstructure. The architects of the extension have contrived, by a very slight alteration to the further window, to convert it into a portion of a central feature, which is further expressed by the pediment in the attic, on which is to be placed a group of characteristic sculpture.

The new portion was erected by Mr. John Marshall, builder, of Plymouth, for 2,600*l.*, and contains on the basement floor a potter's residence, with strong rooms, lavatories, and other offices. The ground-floor is devoted to bank purposes; and on this floor is also the main entrance to four commodious sets of chambers, which occupy the first and second floors. The lower floors of the new building are of cast-iron. The material for the walls is the limestone of the neighbourhood. The front above ground-floor is covered with stores, and the ground-floor portion, including piers between the windows, is of granite from the Gunislake quarries. The piers and balustrade, which are part of the new design, and enclose the areas, are of Penryn granite.

#### LORD COLLINGWOOD'S MONUMENT AT THE MOUTH OF THE TYNE.

NEAR the beautiful and far-famed ruins of Tyne-mouth Priory is the colossal statue of Lord Collingwood. The figure of this great admiral, in whom Lord Nelson put so much trust, stands on a basement of considerable height, and looks grandly over the sea: the features have an expression of great self-reliance and vigilance. The taste which placed this effigy near to the spot on which the warrior was born, and in the sight of thousands of both Englishmen and foreigners who pounce this important ocean thoroughfare, is worthy of praise. The basement of the figure is well composed and forms a small fort: in front a flight of steps leads to the plinth of the figure, and in suitable places cannon bristle towards the sea. Most persons who visit here will take the opportunity of making a close inspection of this work, and viewing it from different points; the path, however, is not the most convenient; but, having surmounted these trifling difficulties, and wishing to see the effect from the west, I proceeded in that direction, when a voice, loud as if a speaking trumpet had been used, hailed me to stop. In due course a police officer approached, and asked, in a fierce voice, "Are you aware you are trespassing? What's the use of putting up boards without people read them?" We mentioned that boards, as he called them, were placed in all directions, and yet hundreds of persons were there, and most consequently be trespassers. "But you see, sir, that's not this field." Submissively obeying the instructions of the functionary to depart, we met two ladies endeavouring, with great difficulty, although they were not overburdened by crinolines, to force their way through the entrance towards the monument: this entrance consists of some upright posts cunningly placed in a circle, with one in the centre. The ladies complained to the policeman that the passage was narrow. "Vary, vary, vary, it's to keep the donkeys out." I could not conceive the use of this entrance at all. If strangers are to be summoned in the Dogberry vein as trespassers; it would be better under the present

circumstances to shut it up, so that neither Christians nor donkeys could find admission.

But then, sir, this is a public monument of great interest; and, knowing the consideration which has on all occasions been shown by the duke of Northumberland, to whom the land adjoining belongs, to give pleasure to the public, I venture to hint, in the hope that it may, through your pages, reach his grace's eye, that a little inclosure could be made with very little trouble, to which the admirers of both art and warlike genius might find easy entrance, and that if this were done it would give satisfaction to numbers of visitors to the mouth of the Tyne, and at the same time put a stop to trespassing.

LONDONER.

#### NOTES UPON IRON.

IN consequence of Wednesday last being the day of national humiliation and prayer, the quarterly meeting of the iron-masters which should have been held there on that day, was held on Thursday at Birmingham. It was then determined to adopt the decision of the preliminary meeting of last week, in regard to the prices to be demanded by the trade in the ensuing quarter, which have nominally been 9*l.* for bars, 10*l.* for hoops, and 10*l.* 10*s.* for sheets and plates. We say nominally, because the houses that have professed to be guided by those rates have maintained them only so long as they were tolerably well supplied with orders. When this was not the case, they got the best prices that they could, and there are instances in which a lower price was quoted by a "trade" house than by a house unconnected with that confederation. The truth is that the determination of Thursday, and that of the preliminary meeting, mean that the best prices that can be obtained shall be secured.

Most of the works continue tolerably well employed upon the general descriptions of merchant iron. The orders are certainly for small quantities, but they are scarcely worked out before others come in. There is a marked absence, however, of all orders for railway purposes; and an order for a thousand tons of manufactured iron would now be viewed as of considerably more magnitude than it is generally regarded. It has been some time since an invitation for a contract excited so much attention as that of the East-India Company for 1,500 tons of plates and bars, which was decided upon by the Directors on Thursday last we presume, Wednesday, the advertised day for the decision, having been the National Fast and Humiliation-day. Most of the houses in South Staffordshire have tendered for it. No work was done at the several forges in South Staffordshire on Wednesday last from six in the morning till six in the evening. A determination, contrary to all precedent, was come to at the preliminary meeting that the works should be closed during that time.

#### THEATRES AND SCENERY.

*Royal Princess's, London.*—The rapidity with which theatrical decorators effect their work is often very surprising, and this we think will be felt on Monday, when the public see what has been done in Mr. Charles Kean's theatre. It seems, and, indeed, is but a few days since Grisi and Albani were singing there, in the midst of its dirtiness, and now from top to bottom a new face has been put upon it, and the whole looks sparkling. The general tone is light, cream colour and gold. The ceiling displays allegorical figures of the seasons. The panels under the private boxes, present a series of paintings in encaustic, comprising on the Queen's side, "Falstaff over the Body of Hotspur," "Prospero summoning Ariel," "Hubert and Arthur," and the "Caldron scene in Macbeth;" and on the opposite side, "Hamlet and the Ghost," "Titania in her Bower," "The Trial of Hermione," "Richard II. resigning his Crown," and the "Vision of Queen Katherine." Between the panels, extending also round the dress circle, is a series of Shakspearian kings, John, Richard II. Henry IV. Henry V. Henry VI. Edward IV. Richard III. Henry VII. and Henry VIII.—all at full length and very well painted. Mr. Knuckack has executed the work. The chandelier has been remodelled and improved, and Mr. Tobin has painted a new drop, wherein drapery half open discovers a statue of Shakspeare on a pedestal. The general effect will be best judged of when the house is lighted for a performance.

*Theatre Royal, Dublin.*—We hear that at last arrangements are on foot for re-decorating and modifying this structure, which for many years past has been in a tattered and filthy state. The present lessee, Mr. Harris, has done much towards the improvement of dramatic exhibitions in Dublin, and it is not doubted that with his characteristic spirit, we shall see this structure, in point of taste, rank with the best of its designer's (Beazley's) works. Mr. John McCurdy is the architect. We also hear of alterations,

additions, and decorations to the Queen's Royal Theatre, in the same city.

*The Arrangement of Theatres.*—Sir: It has long struck me that the inner form of our theatres is very imperfectly adapted for the purposes of scenic representations. This is particularly to be remarked in the construction of what are called the boxes (a very inelegant and inappropriate term by the way): the side-boxes near the stage command a too-close view of the operations going on at the wings. As we are about building anew a theatre on as extensive a scale as old Covent-garden possessed, it is worth while discussing the best form for its reconstruction. It has occurred to me that if the auditory portion were of a conical shape, having its base at the commencement of the stage, the stage being also conical, decreasing to the back—the bases of the two cones meeting—the imperfections from a too close survey might be removed.—TH. WSO.

#### RECENT PATENTS.\*

CHARLES COWPER, Southampton-buildings, Chancery-lane, London.—*Making Drains.* (A communication.) Dated February 17th, 1857.—The patentee claims, in style, the improvement or improvements in making drains by boring or making a series of vertical holes and boring a horizontal or nearly horizontal hole from one vertical hole to another by means of a boring tool or mole worked from above the surface of the ground by means of machinery or apparatus communicating with it through the aforesaid vertical holes substantially as hereinbefore described. Secondly, the improvement or improvements in making drains by boring or making the vertical and horizontal holes as aforesaid, and drawing in the drain-pipes by attaching them to the boring bars hereinbefore described. Thirdly, the improvement or improvements in making drains by boring or making the vertical and horizontal holes as aforesaid, and then lining the inside of the horizontal holes, or of both the vertical and horizontal holes, with a plastic composition introduced round a mandril, which is afterwards withdrawn as hereinbefore described. Fourthly, the improvement or improvements in making drains by boring or making the vertical and horizontal holes as aforesaid, and then boring or hardening the inside or the lining of the horizontal holes, or of both the horizontal and vertical holes, by means of fire, as hereinbefore described. Fifthly, the combination of parts forming the machine for boring the vertical holes, hereinbefore described in reference to fig. 1. Sixthly, the combination of parts forming the machine for boring the vertical holes, hereinbefore described in reference to figs. 16 and 17. Seventhly, the various combinations of parts forming the different machines for boring the horizontal holes, hereinbefore described.

J. H. HEADLEY.—*An Improved Mode of Manufacturing Artificial Granite in various Forms, and Plating or Veneering the same with Marble, so as to present an Exterior of Marble, and an Interior of Stone or Granite.* Dated Dec. 12, 1856.—1. Take good clean sand, and to this add a portion of fresh-burnt lime, reduced by grinding to an impalpable powder. Incorporate these two substances intimately. The natural dampness of the sand will slack the lime, which, in heating, will cauterise the silicon, and form a thin film or pellicle of lime over each grain of silica. When the composition has become cold and amalgamated, it is moistened with water until sufficiently damp to pack. This composition forms the granite or coarse base of the articles to be moulded. 2. Take granulated marble (pulverised carbonate of lime), and mix it with ground unslacked lime in the same proportions and manner as the silicious matter above described, and moisten the same until sufficiently damp for packing. When it is desired to employ these two compositions in moulding any article, place them in a smooth metal mould, so as to leave the sand and lime in the interior of the block, and a thin lamina of the marble and lime on the outside. Then subject the mass to a great pressure, and remove it from the press: the moulded block will then gradually harden by the absorption of carbonic acid gas from the atmosphere.

E. LOOS.—*Improvements in the Manufacture of Cement, Mortar, Concrete, and Artificial Stone.* Dated Dec. 20, 1856.—The patentee manufactures Roman mortar, with a certain proportion of lime, and a chemically calculated quantity of fine sand, and powdered substances of a silicious, argillaceous, aluminous, alkaline, coagulative, and colouring nature, as well as natural and artificial sulphates and carbonates.

R. A. BROOMAN.—*A Method of, and certain Varishes or Compositions for, rendering Wood and other Substances Uninflammable and Fire-proof; applicable also to the Inkrating of Calcareous Earths and Stones, and to the rendering of Paper*

\* Selected from the lists published in the *Mechanics' Magazine, the Engineer, and other sources.*

\* This was obvious on the removal of the plaster from St. Lawrence's Church.



DR. JOHNSON'S STAIRCASE, TEMPLE.—At the sale of the houses in the Temple, the auctioneer announced that the benchers had withdrawn "Dr. Johnson's staircase" from the sale, and did not intend to let it go out of the Temple. We may take credit for having, by our gentle remonstrance, and comments on the staircase, adopted by a great part of the press, awakened the attention of the benchers to the desirability of retaining so interesting a memorial of the learned doctor and his well-known associates.



## WORCESTER DIOCESAN ARCHITECTURAL SOCIETY.

The annual meeting was held on Wednesday, the 30th ult. and Thursday, the 1st inst. at Worcester. At noon on Wednesday the society met for the transaction of business in the Natural History Society's rooms. The very rev. the dean presided. The report, which was of a satisfactory character, pointed out the restorations which had been effected or were in progress in the diocese, and gave a résumé of the proceedings and excursions of the year. The company afterwards proceeded to the cathedral, the principal features of which were described by the Rev. C. Bostell. In the evening the party dined together. In responding to the toast of "The Vice-presidents," Sir T. E. Winnington strongly urged the necessity of combining with the Birmingham and Midland Counties Archaeological Society. The proceedings of the day terminated with a conversation in the lecture-room of the Natural History Society. On Thursday the members and friends visited Pershore Abbey, when papers by Mr. Galton and Mr. Hopkins on the building were read.

**THE ROYAL POLYTECHNIC INSTITUTION.**—Mr. Pepper has provided for the Michaelmas Session various novelties, which we mean to take an early opportunity of seeing, such as a new series of dissolving views of the Indian mutiny, Myers's system of railway signals for trains in motion, an attempt to realize the long-desiderated "reservoir penholder," and a new philosophical entertainment on the subject of illusions. His continuous energy deserves success.

**DISCOVERY IN CROFTON CHURCH OF ANOTHER WALL PAINTING.**—The recently discovered painting on the south wall of the Old Church (in addition to the continuation of the St. Christopher legend) is St. George, clad in armour, armed "cap-à-pie" with his visor up—mounted on a white palfrey richly caparisoned, and charging with his lance a dragon, the fore paws of which only are visible. The champion has evidently issued from an archway under a tower; and it may be inferred that he is about to effect the deliverance of a damsel, who, elegantly attired, and bound by the arm and hands, is seen on the western side. The colours are tolerably fresh, and some remains of silver illuminating can be traced. Opinions are divided as to the date of these relics, but it is supposed that they are of the fourteenth century—Edward 3rd's time, when the order of the Garter of St. George was instituted. Whether the plastering over the stoups, and covering the paintings took place at the Reformation, or during the commonwealth, when "one Blasse was hired to break the stained glass windows at half-a-crown a day!" is not determined. The churchwardens, it seems, have promised not to obliterate this interesting relic. The re-opening of the church, "repaired and beautified," was to take place on the 11th inst.

**SWINDON.**—It may be justice, that persons on mere suspicion of crime should be subjected to the depressing, indeed the dangerous, influence of pestilential cells, before examination; but it is none the less the province of the committee to render whole some the cells of the lock-up, which are hereby presented as foul and offensive, and the foulness of the station probably having been the cause of Mr. Superintendent Haynes's serious, apparently choleric, snuffings. If anything could be wanting to display the utter absurdity of the Nuisances Removal Act, being ad p't'd to grapple with the evils producing the high rate of mortality such as Swindon suffers, it is but too palpable there; with two solicitors as churchwardens, acting as members of the local authority, desirous to give the parish the full benefit of the Act, they cannot even take steps to render their own committee-room in the police-station bearable. The little attempt they have made at sewerage the town seems likely to be paid from their own purses, the vicar having appealed to the Court of Queen's Bench against sewers on the highway being paid from the rates. The judges have decided cases proving the vicar's position; and it appears contrary to common sense that parties, tenants for life, or perhaps but for the year, should be called upon to pay heavily for benefits to be derived by their successors. The Public Health Act, 1848, empowered the payment of sanitary works out of money to be raised on mortgage of the rates, and running the repayment over thirty years. Mr. Cowper's amendment Bill extends the period to fifty years, which, with ordinary caution, must enable any town to accomplish all that can be wished. The Act is highly lauded by many who deprecated the Act of 1848. The sooner it becomes the law of the land the better; indeed, it may be as well that its adoption were compulsory. —RATEPAYER.

\* Mr. Haynes, who holds the joint office of Police Superintendent and Sanitary Inspector, has recently been nominated of a London hospital. His wife a few days since made a severe attack, fairly attributable to the overpowering stench pervading their dwelling at the police-station, where, notwithstanding copious washing with water and the use of chlorides after sudden storms of rain, the life of every unfortunate prisoner is jeopardised without trial by surgery.

## PROGRESS OF THE BRADFORD WATER WORKS.

The principal portion of these extensive works have for some time been in progress, and the local *Observer* of last week reviews the present state of the whole. The Grimwith reservoir and the portion of the line from Barden to Holden Beck (about 8½ miles) are let to Messrs. Duckett and Stead, of Ripon and Arthington. The Barden reservoir is in the hands of Messrs. Swire, Blair, and Parratt, of Shipley and Apperley. The Chelker reservoir, the Silsden reservoir, and a portion of the conduit from Holden Beck to Morton (3½ miles in length) are let to Mr. Samuel Buxton, of Leeds. The remaining portion of the line from Morton to Heaton (upwards of 5½ miles in length) is let to Mr. William Barker, of Wakefield. The scheme was laid out by Mr. J. W. Leather, of Leeds, and is now being carried out by him as the engineer. It is calculated that this scheme will yield 8½ to 9 millions of gallons in the driest seasons. This added to the present supply, and the high level supply from Thornton Moor, will ensure upwards of 10 millions. The quality of the water has been tested by eminent analytical chemists, and is said to have proved to be remarkably good in every respect. The works now in progress are only a portion—though the chief portion—of the corporation water scheme. There must be added the high level scheme, for supplying the highest portions of the borough, and which is an extension of the old water works. The Stubden reservoir is to be constructed on the Thornton Moor, at a height of above 1,000 feet above the level of the sea. The Doe Park reservoir is to be constructed for compensating mills on the Hewenden Beck.

**MONUMENTAL TABLET IN WOLVERHAMPTON.**—A monumental tablet, designed and executed by Mr. Thomas Earp, a young metropolitan sculptor of rising fame, has been erected to the memory of Mr. J. Barker, in the Congregational Church, Saw-whill, Wolverhampton. It includes representations of the Sermon on the Mount, and the Feeding of the Multitude, as emblematic of Christian teaching and benevolence. Each of these subjects in alto-relievo is contained in a small arch, both being surrounded by a larger arch, the corbels of which are formed by a girl reading and a boy writing. The trefoil above these minor arches bears the heraldic device of Mr. Barker, and his monograph is inserted in the spandril above. The whole is intended to memorialize his piety and usefulness, especially in the religious instruction of the young, and is well spoken of by the local *Chronicle*.

**THE SEWERAGE WORKS AT BILSTON.**—These works, which will involve an outlay of from 9,000, to 11,000, are now being proceeded with by the contractor, Mr. Hassell, of London. They are divided into four separate contracts, comprising the town of Bilston, Hallfields, part of Bradley, and Ettingshall New Village. The total amount of earth to be excavated for the sewers is 59,200 cubic yards; the quantity of timber to be used is 5,600 superficial feet of 3-inch red deal plankings; 1130 cubic feet of oak for bearers and settings; 18,240 superficial feet of 1½-inch elm boarding; 800 cubic yards of furnace-cinder walling; 2391 cubic yards of brick work, taking 900,000 bricks for construction. The whole of the works have been designed, and the plans, sections, specifications, and estimates prepared, by the town surveyor, Mr. T. R. Lofthouse, under whose superintendence the works are being carried out. In consequence of the peculiar nature of the district through which some portions of the sewers pass, materials the best calculated for the purpose have been selected. For about 1,080 yards from Queen-street to the outfall by the canal, the sewer is constructed of a brick invert, walls of furnace cinders, and the top covered with timber. This plan has been adopted to enable the sewers to be readily repaired in case of injury by mining operations. One of these anticipated accidents has just occurred, by the falling in of a portion of a sewer, but fortunately no bones were broken and no life lost, though one of the workmen, in attempting to save his cap, was completely buried for a time.

**ISLINGTON VESTRY-HALL.**—We understand that seventy-seven designs have been submitted in reply to the advertisement, and we are told that the committee propose to come to a decision on Tuesday next. We hope, however, this is an error, as it is quite certain that the designs could not be properly examined with a view to decision by that time. The plans will be open to the public at Myddelton-hall, Islington, on Wednesday, Thursday, and Friday next.

**DRAINING IN LINCOLNSHIRE.**—The Venratts new outfall sluice, for draining the district of Deeping fen, near Spalding, Lincolnshire, was formally opened by the trustees on Monday last. The works were commenced in August, 1856, and the foundation stone laid in May last, by the chairman, Sir John Trollope, Bart. M.P. William Lewin, Esq. of Boston, is the engineer; and Mr. William Lissons, of Hull, the contractor.

**"HOSPITAL ARRANGEMENT."**—The evils lately pointed out by journals like the *Lancet* and the *Builder* call loudly for remedial measures wherever they can be devised. "What cannot be cured must be endured," saith the proverb; and hospitals have been so constructed that a proper system of ventilation cannot be obtained; but to erect others upon such faulty plans would be unwise to the last degree. It would be cruel and inhuman. To immure "poor sufferers in public institutions to their destruction" is an offence against morality that ought to be severely punished. Such a course pursued with the eyes open to its results—under the pretence of charity—is virtual manslaughter. Perhaps a stronger term ought to be applied to this proceeding. We do not blame our ancestors for the errors of judgment arising from their ignorance of the laws of nature; but the fatal blundering of the dominant class of the present generation, who shut their eyes to the light of science, provokes strong animadversion. They manage such matters better under a despotism on the continent, and our principles are disgraced by the carelessness or stupidity of the ruling spirits among us, who follow the precedents of their ignorant forefathers to this day. The Victoria hospital, now in course of erection—which has hardly emerged from the ground—has consumed the enormous sum of 70,000*l.*; and it is already ascertained to be planned on such erroneous views, that it must be altered and amended, at an enormous cost. It is, perhaps, consolatory to reflect that the blundering went no further; but how much better would it have been to have prevented these mistakes? Our allies of France and Belgium could have supplied the official architect with examples. Model hospitals exist in Paris, Bordeaux, and Brussels. That in Bordeaux is admitted on all hands to be nearly perfect; the Netley hospital is the grandest failure of its kind. The editor of the *Builder*, in criticising the plan, said that "more diseases would be generated than cured in such an edifice." This was strong language, but it has since been justified by a Government commission, who, in condemning the original scheme, employ nearly the same words! We trust, however, that the wealthy and benevolent men of Blackburn will not fall into similar errors; but on the other hand, will rear an institution that scientific men can admire, and that Government may hereafter copy with advantage. —*Freston Guardian*.

**BRIDGE AT COLLINGWOOD, MELBOURNE.**—Having read your remarks in last week's paper respecting the improvements going on in the neighbourhood of Melbourne, the last-mentioned being the bridge at Collingwood, I should be obliged by your stating that the said bridge was designed and carried out by Messrs. J. Austin and Co. late of Shrewsbury, and Cleveland-square, London. It is the only bridge of the sort that has been erected in the colony. You can, on referring to the *Melbourne Argus*, of June the 6th, see a long account of the opening of this bridge, which took place on the 5th of June, by his Excellency the Governor, and a large party of the principal gentlemen of the place, when the engineers were highly complimented for the ingenuity, skill, and promptitude displayed throughout the erection. —D. C.

**THE LIVERPOOL COLLEGIATE SCHOOL OF ART.**—A list of those to whom prizes were adjudged by Government last Midsummer, in connection with the various branches of the Collegiate School of Art at Liverpool, is published in last week's local *Courier*. The examination was held in June, by Mr. Wyld, of the Department of Science and Art. Very various classes of the community it appears are now receiving instruction in drawing of all kinds, through the agency of this school. Among those who have obtained prizes or medals are carvers, cabinet-makers, painters, school-masters, pupil-teachers, &c. One student (J. Rimmer), is especially mentioned, as having deserved a prize for carving, which would doubtless have been given to him had this subject been within the Government arrangements. The female classes are not held in the Collegiate Institution.

**ELECTRO-TELEGRAPHIC PROGRESS.**—Sir William O'Shaughnessy has, it is said, left England for India, by way of Constantinople, where he will arrange with the Turkish government for the construction of a telegraph from that city to Bagdad. This line will be constructed by the Turkish government, be under its sole control, and be connected with the East-India Company's telegraph down the Persian Gulf to Kurrachee. The necessary arrangements for establishing a direct line along the coast between Madras and Calcutta were being vigorously proceeded with in August last. —Water-light and covered tanks have been prepared at Keyham steam-yard, Plymouth, for the Atlantic cable, which is to be paid out through boiled oil, as it is delivered on shore from the Niagara and Agamemnon. There is still 2,100 miles on hand, but a much greater quantity will be sent off in the spring.



**ACCIDENT AT THE SALTSABRIDGE WORKS.**—It having been thought desirable to push on the works in connection with this part of the Cornwall Railway, active steps have recently been taken for the building of the second tube, and the massive scaffolding to support the structure was in a state of forwardness. On Saturday night before last it was, though incomplete, apparently quite secure, but during the next day it blew rather violently, and the whole erection fell into a mass of ruins.

**A NEW INVENTION FOR CONSUMING SMOKE.**—An ingenious pamphleter, Mr. Peter Spence, of Manchester, says a provided paper, "proposes the abolition both of chimneys and smoke altogether. Not only of smoke but of chimneys. The plan is, to have smoke drains under the streets, and the only difference is, that whereas the latter require a fall, the former will be all the better of a rise—the specific gravity of water causing it to descend, and of smoke to ascend. Mr. Spence restricts his project to Manchester, for which he would build one chimney according to the specifications of the Tower of Babel. A Dundee paper invites Mr. Spence "to come and try his plan in Dundee. We should need no chimney-building here. The Law (a conical hill), behind the town, only requires a hole made through it to become one of the finest natural chimneys possible. Almost all our great factory chimneys are in a line east and west, and one main smoke drain would answer for them; then the ascending drain might be carried up by the side of the Newtyle Railway, and through the centre of the Law, from which the smoke would emerge like another Vesuvius!"

**A CANADIAN SUSPENSION BRIDGE BLOWN DOWN.**—The suspension bridge which spans the Burlington Heights, at the entrance of the Desjardine canal, was lately blown down by a hurricane. The bridge was completely smashed. The wind had lifted the whole structure in the air, turning it in its descent, and, as it simultaneously, snapped it precisely in the middle. The bridge being thus divided, one-half lay on one bank of the canal, and the other half on the other. *Dundas (Canada) Warbler.*

#### TENDERS.

For new warehouses in Coleman-street, City, for Messrs. Vanner and Sons. Mr. Charles Laws, architect. Quantities supplied:—

Heath and Son .....	£8,585 0 0
Glenn .....	6,375 0 0
Jay .....	6,300 0 0
Perry .....	5,968 0 0
Piper and Son .....	5,783 0 0

For alterations at Nos. 118 and 119, Tottenham-court-road, for Mr. Hunter. Mr. Hodgson, architect:—

Holland, Bros. ....	£1,388 0 0
Geo. Mansfield and Co. ....	1,185 0 0
Blanchard .....	1,171 0 0
Sanders and Woolcott .....	1,045 0 0

#### TO CORRESPONDENTS.

**Preservation of Gilded Firestone.**—I am erecting a small Gothic building, for the windows and dressings of which I am using the Gilded Firestone. Now I am very much afraid that with the first hard frost, I shall see the mouldings, mullions, and tracery of the windows, &c. flaking off, and my new building crumbling into dust before its time. If any of your correspondents can inform me as to any simple and expeditious preparation which they have had experience, which can be applied to the stone, in order to avoid this, without darkening the colour of the stone too much, they will greatly oblige me.—*Vinc. A. A. A. A. A.*

**B. H. A. D.** (we have no reason to doubt correctness of our list)—**C. G. G. W. A. C. H. D. G. C. C. N. B. E.**—Indigo on the list. **Mr. A. M. B. G. J. T. W. H. R. W.**—**H. M. H.**—Competitor—**W. M. S.**—Monday Garter—**W. V. J. L. P.** and **H. F. C. L. W. J. M.**

**"Books and Addresses."**—We fear to decline pointing out books or finding addresses.

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and not to the Publisher.

#### ADVERTISEMENTS.

**THE LEAK IMPROVEMENT ACT, 1855.**  
TO SURVEYORS. Notice is hereby given that the Commissioners under the Leak Improvement Act require TOWN SURVEYORS Candidates for the Appointment may forward testimonials of qualification, and completed address to Mr. HAMMILL, Clerk to the Commissioners, Leak, before the 20th OCTOBER instant, addressed "Candidate for Surveyor." Candidates must also forward the management on the most economical principles of Water, rise, Drainage, Sewerage, Paving, and Surface cleansing, be competent to direct surveys, prepare plans, drawings, and estimates of works, of every description, and be required to attend personally before the Commissioners, unless specially requested, but to state the salary required. By order of the Commissioners, **HACKER and BLOORE, Law Clerks.**  
Leak, 1st October 1857.

**TO BUILDERS' CLERKS.**  
**A JUNIOR CLERK WANTED,** who is qualified for the general duties of a Contractor and Builders' Office, and whose abilities and character will bear a thorough investigation. If having been in a surveyor's office will not object to it.—Address (naming age, salary required, and with whom last employed, &c.) Messrs. Richards, Stationers, St. Martin's-lane.

**WANTED, TWO good PLASTERERS** for a job in Saubury, Oxon.—Address, J. T. Central Corn Exchange, Lambour.

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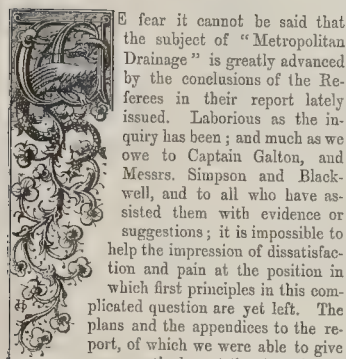
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# The Builder.

VOL. XV.—No. 767.



E fear it cannot be said that the subject of "Metropolitan Drainage" is greatly advanced by the conclusions of the Referees in their report lately issued. Laborious as the inquiry has been; and much as we owe to Captain Galton, and Messrs. Simpson and Blackwell, and to all who have assisted them with evidence or suggestions; it is impossible to help the impression of dissatisfaction and pain at the position in which first principles in this complicated question are yet left. The plans and the appendices to the report, of which we were able to give some particulars at the time of their

publication, represent so much patient research, that, even after having gone through the five hundred closely-printed pages, we could well feel diffidence in a present expression of opinion on the recommendations which are made. But, not only are there reasons for regret, arising from the present state of knowledge in the agricultural and chemical branches of the inquiry—a position which was perhaps inevitable, but which in a few years may entail a complete reversal of the present plan, and the loss of the expenditure, supposing the scheme carried out—but it is apparent that the time lately given to the digestion of the subject has been inadequate to its magnitude. At least, we would say that we are justified in inferring so from the want of reference in the report, lengthy as that is, to many important points, raised by surveyors to vestries and district boards, or authors of plans submitted, or to other points which are suggested in reading the appendices,—also from parts of the report of Dr. Hofmann and Mr. Witt, and from the entire omission of particulars as to structural features and details which are of moment to the working of the suggested sewerage. What the Referees have done will probably be found mainly this,—that they have put before us an enormous mass of evidence which it was necessary should be considered, and much of which would not otherwise have been generally accessible. It is possible—so pressing is the case—that the millions of money required for the construction of new outfalls to the Thames, may have to be expended, as a measure of mere expediency, or only to show that a particular plan is *not* that which should have been adopted. But, the public know just enough of the subject to be dissatisfied with any course which they feel is not the logical solution of the difficulty.

Much, we see, is being done towards settling the abstract question of the principles of town sewerage; but the case of London is peculiar, and the existing conditions of its site are unfavourable. Supposing the subsidiary question of utilization as settled—though commercially, it by no means is so in "deodorization" and the formation of a solid manure, and in many points of view relating to London is not more so in the application of liquid sewage—there still are difficulties from the low levels and consequent necessity for collecting and raising the sewage, and from the unequal demands of sewage and ordinary drainage, and of storm waters. Respecting these, as we understand the particulars of the plans, neither Mr. Bazalgette, for the Board of Works, nor the Referees, propose to intercept wholly the storm waters. As shown in Appendix VI. plate 2, in

the existing sewers, the *ordinary* and general flow has a depth of very few inches, whilst in some cases the flow will be several feet in depth.\* Thus, supposing provision for every contingency in sewers the same, an enormous expense as contrasted with that of the ordinary requirements, would be demanded, and merely for the sake of ten or a dozen days in the year, when the dilution of the sewage would, in the opinion of the chief authorities, be such as would render impossible any noxious effect.

The ordinary flow of sewage and rain-water, however, having to be provided with outfall—according to both of the plans mentioned, without making use of the river—the nature of the levels requires that part should be raised; and whatever the mechanical contrivance resorted to, considerations of practicability and costliness, and possibly also those of a sanitary nature at the places chosen as lifting stations, require that the area which is under these latter conditions should be limited in extent as far as possible. Thus, some of the difficulties in the case of London, in the way as well of the direct utilization of sewage, as of the withdrawal of it, become apparent to us; and also we are able to see how a considerable difference of opinion may exist, such as that which mainly occasions the discrepancy between the plan of Mr. Bazalgette and that of the Referees.

To relieve the low levels as much as possible from the flooding to which they would continue to be subjected—perhaps to even a greater extent than they are at present,—sewers of interception, to take the flow of the upland districts, suggest themselves, and are adopted in both plans; and the course of the drainage of that character in the Referees' plan was referred to in our last. Such sewers were not originally suggested by Mr. Forster; for, the reports made by Mr. John Reunie, in 1807 and 1808, and which are given in Appendix VIII. adopt the same principle. We wish, however, we could feel satisfied that the intercepting sewer—with or without reservoir at the place of exit—would not substitute, for distributed vomitories of nuisance, an intensified disseminator of disease,—an apprehension we have long felt, and which is echoed in the report of Mr. Freebody, the surveyor to the Shoreditch Board, who goes so far as to say that "the outlay necessary for the construction of these long lines of intercepting sewers, in their entirety, will be an injudicious expenditure," and who even would preserve the present outlets, considering, perhaps with reason, that the Thames water in the vicinity of London will never be bright as anticipated, and that, in a great degree a beneficial action, chemical and mechanical, is constantly in progress in a river having such an immense volume: and he is "prepared to assert that it is quite practicable so to arrange the whole *régime* of the river Thames in its course through the metropolitan districts, as to preclude the deposit of offensive matter in appreciable quantities," &c. Such representations would serve to show the difference of opinion which exists, even on primary questions,—those which the rival plans before us had to take as settled by the Act of Parliament. However, the opinion that, whilst minute streams are comparatively innoxious, the larger streams may not benefit the public health, or, that so long as the pernicious properties of sewage remain unchanged, the collection and conduction of masses of it across and under the metropolis, would merely transfer the baneful action from one locality to another, is deserving of attention. With reference to this, it is impossible to avoid remarking that certain requirements of vital importance appear to

have received insufficient attention from the Referees. We allude to those belonging to the whole subject of ventilation. It should be scarcely necessary to say—only that the subject is again and again misunderstood,—as, indeed, it appears to have been by those who framed the Act of Parliament,—that sewers must be ventilated. If they are not so, they are not merely unsafe for those who will have occasionally to enter them, but they will ventilate themselves into the houses,—as they did in the case of the Croydon epidemic, as shown by Mr. Page, in the report by him and Dr. Arnott. We do not say that this point has been wholly passed over, but that it has not received the *prominent* attention from the Referees, which the nature of it demands. The additional distance of flow given to the sewage is, taken by itself, such as we apprehend may add to the influences towards deleterious exhalation, which are peculiar to the sewerage of London. We say *peculiar*, because it appears by the particulars afforded to us, that whilst in the towns lately sewered and supplied with water, the excretory and other matters are ejected before time has been allowed for decomposition, and are, perhaps, chemically in a condition favourable to "deodorization;" in London sewerage, from the greater distance to outfalls, a very different condition of things will exist. The Referees indeed say, "We believe the proposed main drainage works, by ensuring a continuous flow in the sewers, will relieve many districts from the effects of the alternate compression and dilation of the air in the sewers,"—which is assuming the continuous flow: but whilst they "attach great importance to the ventilation of all the sewers," they have to "regret that the time allotted" to the inquiry was "too short" to permit of their "investigating the subject more fully;" and they suggest that the Metropolitan and District Boards should institute experiments to determine the best plan for removing the gaseous emanations which must prevail more or less.

We cannot but feel, then, however humiliating the confession, that the plans of Mr. Bazalgette and the Referees, agreeing as to the provision of main intercepting sewers, and the intention of an ultimate discharge into the sea, are at best those which the present state of the inquiry will admit of, but do not present the satisfactory solution of the difficulty.

Still, it is impossible that the subject can be allowed longer to rest in the present state of inactivity. The very deprecation of these plans, which profess to do away with outfall into the river within the metropolitan area, is accompanied by no tangible proposition in lieu of them. Of suggestions there are many in the book before us; and of evidence there is much, true and false. But the question is one in which *time* is the essential—the truly *vital* element; and the whole matter is in that unfortunate condition in which "something must be done." We cannot get rid of "the difficulties attend[ing] upon a low level for drainage," so easily as did the people of Chicago, in the United States, where we are told the whole town was raised "five feet." It is very true that there are wide tracts of ground in London, covered during the very time that this subject has been discussed, that should never have been built upon. These, as others below the level of high water on one side and the adjacent country on the other, it is impossible to drain continuously, except by artificial means. To make the case worse as to dwellings in such situations, the description of house property which exists is usually that which, for sanitary reasons, requires the *best* drainage. It may be well to bear in mind that the fitting use of the low ground would have been to preserve it for market-gardens, or to have appropriated it to meadows irrigated by the sewage of London. And we must say, it is

\* For instance, in the Keneleigh sewer, Gloucester-road—8 feet 6 inches from bottom of invert to crown of arch—the ordinary flow is 1 foot 11 inches in the centre of the channel, whilst the height of water during storms is called 7 feet 6 inches.



with some chagrin that we observe that the facilities of communication with the outskirts of the metropolis, notwithstanding the development of railways, continue to offer to a large class no alternative to the occupation of localities which are at present abiding-places of disease, and which must under some circumstances continue to be so, to some considerable extent. But who is to interfere to stop the building at Rotherhithe and the Isle of Dogs; or we might say, to raze the half of London in Southwark, Lambeth, and Westminster? Knowledge of the subject, and public opinion, have not progressed enough to assent to decided and sweeping measures of remedy, or to confide their execution to any existing agency. There is excuse for this attitude of the public, both in the devious and mistaken course of legislation and government, and in the progress of the sanitary inquiry itself.

Having got to this elementary stage,—perceiving what should be the position of things, yet knowing the actual position,—we come to consider the question of outfall (the place of outfall, and the manner of getting to it) in the aspect in which it must be viewed. We have seen that, under any circumstances, a considerable proportion of the sewage of London must be raised. Under the present system, of the discharge at a low level into a tidal river, the mouths of the majority of the sewers have to be closed during a considerable portion of every day; they become "elongated cesspools;" and rainfall is ponded back, and the basements of houses are flooded. Now, in deciding upon the outfall, a main point is, whether the sewage should be used or wasted. When "the general reader" is told that the value of constituents of the London sewage is upwards of a million of money annually, he naturally exclaims against what he thinks the madness of sending ships half across the globe, whilst the same constituents of guano are in existence at home. But, as it is well remarked by those who have contributed to the chemical part of this inquiry, the public mind has to be disabused of the notion that the sewage of London, and what are some of its constituents, are the same thing. The prospect ultimately, of the production or the application of those constituents is in every respect a hopeful one; but up to this time, in the words of Dr. Hofmann and Mr. Witt, the constituents are "like the gold in the sand of the Rhine," the "aggregate value must be immense, but no company has yet succeeded in raising the treasure." We have carefully considered the prospect of the disposal of the London sewage by converting it into a solid manure. It appears, firstly, that this does not attain the object of entire purification; and, secondly, not the commercial and agricultural one in a manner to recommend itself in the case of London. Some of the processes that are in use, appear to be well worthy of attention in the case of small towns, and of workhouses, asylums, and public buildings in the country, of the like character. But, the cost of the material which is mixed with the sewage, in many cases, is such, that the production of the manure cannot in those cases be looked upon as a source of profit—on whatever other grounds desirable; and it seems questionable whether much more is effected by elaborate and expensive means, than by the simple deposition and filtration, and mixture with the ashes of the town, as practised at Cheltenham. Particulars of the Cheltenham works will be found in the report by Mr. Austin,—who has given plans, with some modifications, of an arrangement of works suggested by himself. Taking into consideration the cost of the added materials, and the value of the manure obtained, the lime process patented by Mr. Wicksteed, and carried out on a great scale at Leicester, is that to which the authors of the chemical report attach the most value. But a comparative table which they give, shows that the concentrated form of the constituents in a ton of guano makes that material actually cheaper than the lime deposit. Six tons of the latter appear to be required for one ton of the other. Hence, without reference to the greater charge for "spreading," and the positive disadvantage that there may be in a portion of the material, if only assumed as inert,—a difference, for example, of about 50 per cent. on the ton, is discovered when the rival manures have been

conveyed a distance of twenty miles. The conclusion as to the *London sewage*, from all evidence, seems to be, that it is very doubtful,—on the one hand, whether the commercially valuable form of "deodorization" could be carried on at the outskirts of the town, without what, from the magnitude of the operation, would become even there a serious nuisance,—and, on the other hand, whether the best of the processes which could be used at the mouths of the number of sewers—such as those existing—could be made commercially valuable. And it must be recollected that none of the processes are allowed, by the best authorities, to have attained the full object. They leave the bulk of the valuable constituents, or of the six-sevenths which are in solution, in the super-natant liquid; and this last, it is affirmed, is particularly susceptible to putrefaction—though we see Mr. Dover states the contrary as the result of his process.

The question of outfall, however, is clearly narrowed, and is divisible into the disposal of the sewage—wasting it by ejecting into the sea, or utilizing it on the land. Now, on the latter head, the reporters on the chemical question, after mentioning some of the cases of successful irrigation with sewage water,—say,—"*Notwithstanding these remarkable results, it is extremely doubtful whether any profitable use can be made of the London sewage for the purpose of irrigation.*" But they go on to refer to so many points, tending to show that such application could be made to succeed, that we shall deem it necessary, shortly, to go more into the subject, to see whether such utilization—if it did not return interest of money as it has done elsewhere—would not at least supply the outfall, without disadvantage sanitariously, which is the thing required,—a question, however, on which we must guard ourselves against a present conclusion. The report, however, leaves so much unsaid on the agricultural branch of the subject, and on irrigation of land, that we cannot but regret that in that direction the inquiry did not extend further.

The position in which the abstract question of utilization of sewage in the liquid form is left, seems to be this:—is there obtainable near London, ground on which this great and increasing volume of sewage water could be laid, and can such irrigation be carried on in all seasons, and under all circumstances? In the agricultural question is involved that of the quantity of sewage that can be absorbed by particular soil, beneficially,—that is, obviating the necessity for storage, or supplementary outfall, whether to meet the exigencies caused by generally intermittent demand, or those of sudden accumulation. Such questions the Referees being unable to settle, they have felt obliged to provide in some way, those particular outfalls which they could not be satisfied would be otherwise than needed. All that they felt in the position to aim at was, what would *permit* of the utilization of the sewage,—and in the country lying due east of London. Now, if what appears in the blue book, and in the report of Mr. Austin and elsewhere, will disabuse the public of the expectation of any great commercial advantage from "deodorization" and the production of solid manure, the same authorities tend to show the ease with which ordinary towns, favourably placed as to levels and adjacent land, might be dispossessed of their sewage, and how considerable benefit to the land might result; and with this limited expression of opinion, for the present we leave the subject.

The large water-supply, and area of rainfall in the metropolis; the different conditions as to sewage and rainfall of the urban and suburban districts; the drainage of the marshes, itself a desirable thing for the health of London, and necessary to their being in a condition to be, as it were, a market for the sewage; and the necessity for considering not merely the "additional" area of the Referees, but possibly every town which is at present draining into the Thames, are so many points in the peculiar problem of the sewerage of London, and the disposal of the river; and some of the number are even yet far from being conclusively settled. The error of the three successive plans of the Board of Works, as of others preceding them, was that they dealt rather with the rate-paying

area, judging by the supposed pecuniary competency of Londoners, than with the true question, which has no exact connection with the geographical demarcation of the Board's jurisdiction. The *physico-geographical* character of the whole valley-area of the Thames, and its tributaries—as modified by population—was the real ground to work on: the Referees commenced nearer to the proper basis than did the Board of Works, yet probably did not go far enough.

The discharge of sewage into the river, at points at which it appears it could not but have returned with the tide; the storage in reservoirs, and the great area from which the sewage was to be raised by artificial means, were the weak points in the schemes of the Board. We fear, however, that the Referees, in seeking to amend these defects, have not thoroughly considered and matured a scheme of their own. They reduce the portion of the area from which the sewage is to be raised artificially, and add to the area for gravitation,—whereby the outfall sewers and channels have very slight inclination, as noticed in our former article. But further, if we can understand the very imperfect sections—in place of discharge from reservoirs, the emissary (in each case considerably below low-water) will admit the tide to flow up, just as it does up the Thames, only with a more dense concentration of the sewage. Supposing, however, that the particular feature at the outfall be merely the low-level of the invert, surely the discharge would be possible only about low water, and the sewage would flow up the river with the flood instead of down with the ebb tide; and Mr. Bazalgette is quite justified in the opinion which he has expressed on that part of the proposal. The return to sewers of greater dimensions than have been lately advocated, on the ground of provision for a larger rainfall, is also a noticeable feature in the design.

The plan is put forward as fulfilling the following conditions:—

- 1st. The scheme must relieve the low-lying districts from floods, and from the evils attendant upon a tide-locked drainage.
  - 2nd. The scheme must cleanse the river to the greatest practicable extent. And,
  - 3rd. While removing the nuisance from the metropolis, the proposed system of drainage should be attended with as little practical injury to, or interference with, other towns as possible.
- The plan of the Metropolitan Board adopted the first of those conditions; but in the opinion of the Referees, it would appear did not secure the other objects. Besides that plan, the Referees considered a large number of other proposals,—the majority of them, however, not sufficiently detailed, or bearing the evidence of practicability. Amongst the plans and communications were suggestions on many special points; but the majority were classified into schemes, proposing:—

- 1st. That the sewage of each house should be collected in cesspools, or moveable receptacles of various constructions, reserving the ordinary drains for rainfall.
- 2nd. That the metropolis should be divided into districts of greater or less extent, and that to each district a reservoir should be supplied, into which the sewage should flow, to be there deodorised or prepared for utilisation.
- 3rd. That the sewage should flow down to the present points of outfall in the river, and be there either run into barges, or converted into manure at these points, the liquid being allowed to flow into the river.
- 4th. That the sewage should, after being collected in central positions, be pumped along lines of pipes into the country, and there be applied to the irrigation of land.
- 5th. That the mouths of existing sewers should be connected either with a main drain on each side of the river, or with one central drain in the bed of the river, by which the sewage would be conveyed to some point down the river, where it would be deodorised, or be discharged into the river without deodorization.
- 6th. That a portion of the sewage should be intercepted at a high level, and the rest be intercepted and raised by artificial means from a low level, so as to enable it to gravitate to deodorising works, or to an outfall at some distance down the river, or at some point on the sea coast.

The plans of the sixth class, including the plan of the Board, are the only ones which they conceive



fulfil the conditions of the complete drainage of London. They do not see the advisableness of a return to the cesspool question, or the practicability generally of a separation of the sewage and the rainfall. To the low-level conduits, suggested with or without a scheme of Thames embankment, they object that the lower parts of London would remain subjected to floods, and that the *schale* of the sewage would have to be raised at enormous cost. They also do not consider that the sewers following the course of the river are practicable. The schemes of other kinds are rejected for reasons which will be here apparent, and the principle of interception advocated by Mr. McClean, Mr. Bailey Denton, and others—shown in their plans sent in to the Sewers Commissioners in 1849, and adopted by Mr. Forster—is taken as the basis of the system.

The main question left after consideration of points which we have referred to, was whether the discharge should be directly into the sea, or in the river, near the mouth. The Referees decide against the former, for the reasons alluded to in our last article, and which became apparent from the experiments with floats by Capt. Burstal; and they adopt the other arrangement on the ground that at a particular point in the river, the ebb tide is very strong, and that a considerable period of slack water occurs during the flood. But—apart from other matters for further consideration,—bearing in mind that there are two outfalls, one for the northern sewage, and the other for the southern, opposite to each other, we hardly understand, since the requirements as to emission are the same, why circumstances chosen as to the tides should not be analogous. Yet we read that “while the ebb tide sets upon the northern shore of Sea Reach, the flood tide sets upon the southern shore.” Perhaps this only needs explanation; but the questions which occur to us would not be exhausted even in an article of considerable length. Still we must now suggest for consideration, whether every approach towards the sea—advantageous in one respect—may not tend in another way exactly otherwise. The evidence which could be collected at many seaport towns—and which even is supplied in some parts of the blue book itself—would show that sewage does not mix with sea-water, but that the latter tends to increase the deposition on a coast. If that be the case, the question of London sewerage would, as we feared at the outset, be still very far from having arrived at what we called the *logical solution of the difficulty*. What that solution is, it may be beyond our power to state and certify: all that we can now do is to point out some features in the report before us, which appear to have been hastily deduced from the evidence, or on which the latter is weak, and admit that immediate operations are required, though some few millions should be swamped in an experiment. Such is the result, which long negligence of the first conditions in the formation of towns has entailed upon us.

#### COMPETITION DESIGNS FOR MUSIC-HALL AND BATHS, CAMBRIDGE.

CAMBRIDGE is one of those places which are placed in the awkward position of having outgrown their town-hall. For a long time its public audience has, so to speak, been pressing laterally against the walls of its present assembly-room, and, as a place for public meetings, its days are numbered. With a population of 30,000 souls, the maximum of packing and physical endurance will only find room in the present hall for an audience of 500 people, and the want of increased accommodation became so urgent, that a company has started into existence to correct the evil. Since the formation of this company, a counter project has been set up with the object of demolishing the present town-hall and building a new one on its site; and it is only to be regretted that the corporation do not feel themselves justified in adding to the already heavy rates for recent improvements, by giving the proposition their hearty and unanimous approval. The Market-hill is unquestionably the proper *locus* for the proposed structure, and it is a pity that reasons before mentioned should deter the corporation from taking the matter into their own hands. There is yet a possibility of the scheme being entertained by the authorities; but, in the mean time, the company have secured the offer of an eligible site in the nearly the centre of the town, and in the *Builder*

of July 11th appeared an advertisement inviting architects to send in plans, &c. for a music-hall, baths and washhouses, &c.

The excessively small sum of 50*l.* was offered as a premium to the successful competitor, with the promise of being employed as architect of the structure; and it was further made a condition that at least ten competitors should enter or the prize be void. In answer to this invitation, only six gentlemen have come forward, and we have heard it said that the premium will be divided amongst two or three of those whose designs may be considered most meritorious. The designs have been publicly exhibited during the present week. No. 1, “Alpha,” is in style the Classic of Sir W. Chambers. The exterior is rusticated Doric, and curved on plan to obtain width. The interior of the Music-hall has a subbase (or pedestal course), whence rise Corinthian pilasters to support roof, which is curved, and appears to be taken from the Museum of Economic Geology, but is deficient in strength. The room is lighted by curved skylights that follow the form of the roof.

The Music-hall is figured, 87 feet by 47 feet; but on the floor the plan only measures 67 feet by 47 feet, if taken to the square part of the end opposite to the orchestra.

A staircase, 6 feet wide, is the only approach to the room, which is entered by three doors under the orchestra: this latter arrangement causes the orchestra to be more than 20 feet high in front.

No. 2, “London,” the style of which is Italian, the approach is by a staircase, 8 feet wide; the orchestra at end of the room is semicircular; the ceiling is a segmental brick arch, 51 feet span, rising 6 feet, springing from the top of a brick-and-a-half wall (without buttresses), 26 feet above the floor of the hall! Some of the rooms, &c. would appear to be without daylight.

When the author deposited his plan, he was asked for his name, and refused to give it. This is the only design by an unknown author.

No. 3 is marked “Industria.” The style is Italian. The approaches are not exactly what they should be, recollecting the panic and rush at the Surrey-gardens: the entrance to the Music-hall, is by a passage 5 feet wide and 158 feet long. A second doorway leads into the same passage through a luncheon lobby. The grand staircase is 7 feet wide, and the doorway of the Music-hall is 8 feet wide, so that for exit the passages gradually narrow towards the street. The room is to hold 1,400 person, so that they would pass through the frustum of a wedge, commencing their journey at the base, and making their sortie at the apex.

The music-hall has a coffered and coved ceiling, resting upon Corinthian pilasters, on a subbase: between each pilaster is a window of the Ionic order. The lighting generally appears defective, and the roof springs from a brick and a half wall, 63 feet high, and spans 63 feet without any apparent tie; it clearly cannot be made of timber.

No. 4, “Quoi qu’il en soit?” is in style Italian Ionic. This plan provides for a *porte cochère*, with a rather awkward turn at right angles. The author, in a MS. appended to the drawings, says, “the design is Italian in character, and your town possessing so many splendid structures, I can but think that these public rooms should present a creditable appearance.”

It does not appear that this design has any reference to a “splendid structure.” The music-hall is irregular on the plan, with transepts: from their junction rises a dome, 30 feet in diameter, and bulbous final to match. The ceiling is a semicircular vault, ingeniously arranged with hypæthral fenestration, and supported upon Ionic columns. The music-hall has evidently been cramped to obtain some light for the swimming-bath below. The author writes, “by a practical arrangement, the baths, although apparently covered by the music-hall, are amply lighted and ventilated.” The “practical arrangement,” so far as we could discover, consists in tinting some rays of light where they can never fall.

“Quod verum tutum,” No. 5, adopts the Venetian Gothic style. The approach is by a *porte cochère*, having an easy curve from the entrance to the exit, and laid down with a tramway. In the middle of its length is placed the grand staircase, two flights of curved stairs (implying danger) lead to a landing, whence rises a staircase, 8 feet wide, for approaching the saloon and music-hall. The swimming-baths are adopted from our Journal, with radiating dressing-boxes in the centre of each bath, and approached by a bridge.

The roof of the music-hall is a pointed wagon vault, boarded and gabled, with a boarded cove between the plate and the end of the hammer-beam. The author proposes to support the roof by iron columns from the floor to the hammer-beams, or by iron tie-rods, not shown in the drawing. The hall is lighted by wheel windows in the gables, and small windows in the sides: the windows are too small.

No. 6, “To be or not to be,” in style, enriched Italian, aims at less than the others, and perhaps effects more. The music-hall is on the ground-floor, with side galleries after the manner of St. George’s Hall, Liverpool. The plan is a double cube, with a semi-circular end: the ceiling is elliptic and coffered: some of the coffers are glazed. The room has two approaches from two streets; but the corridors and retiring-rooms are dark. The swimming-baths are lighted by skylights.

The sum to be expended is limited to 7,000*l.* including fittings of orchestra, warming apparatus, chandeliers, gas-fittings, and seats for audience.

#### COMPETITION DESIGNS FOR THE PROPOSED VESTRY-HALL IN ISLINGTON.

THE seventy-seven sets of designs received have been carefully hung in Myddelton-hall, and will remain open to the public till nine o’clock this evening (Friday). Much trouble has been taken by many of the competitors, and time and thought have been expended in the preparation of the drawings; and the vestry have reason to be satisfied with the ability elicited and the amount of work done by them since the end of August last! In return, they will be expected to take the most effectual steps to arrive at a just decision. The advertisement says,—“The building is to be erected and completed (including the architect’s commission, salary of clerk of works, drainage and enclosure) for a sum not exceeding 5,500*l.*” This must be remembered in making the selection. The amount is too small: it is doubtful if the accommodation required can be obtained by it in such a shape as the size and importance of the parish calls for, and some of the competitors have forwarded designs which could not be carried out for half as much more. If conditions be laid down, justice demands that the selection should be made with the strictest reference to them. A list of the Motives and References to the designs, with blank space for observations, has been printed by the vestry. Twelve designs have already been selected, it is said, by the committee, and will be proposed to the vestry this, Friday, evening.

Glancing round the two apartments in which the drawings hang, and without that careful examination of plan, and comparison of effect with cost, which will have to be made, we may notice the variety and fair amount of invention observable in the elevations. The use of the Gothic style was expressly debarred by the advertisement: the Venetian element is largely observable; coloured bricks for the arches, strings, and cornices, are much used; and a turret gives character to many of the designs. The plans mainly oscillate between two arrangements, depending on the entrance being either in the high road or in the centre of the side. In two cases the entrance is made at the angle; but this arrangement does not recommend itself. Some of the most showy designs depend on the use of “cement.” The feeling against the employment of this material, in the way it is ordinarily used, is growing stronger every day: we earnestly advise the vestry to do without it, or at any rate to use it as sparingly as possible.

No. 6, “*Premeditatus*,” has a tower (displaying red and white bricks), and the hall has a domical ceiling, which, remembering that the apartment is for talking in, would be a very hazardous form. 18, “Progress,” is original and clever, as much so as any design in the collection. The author of it in his descriptive particulars says justly:—“It may give more trouble and require more pains to supply a design of an original character, and such a one may, notwithstanding, have more faults than a mere copy of some known work, proved already to be excellent; yet in the latter case not one step is gained in the progress of art, but an opportunity has been lost; while, in the other, if among many faults there are some new beauties or combinations to be found, at least something has been done in addition to what has gone before, and fresh food is presented for the mind of the observer, and some new feeling awakened.”

The vestry may usefully bear this observation in mind in making their selection. 32 and 33, “Islington,” 34, “Merrie Isledon,” and 65, have excellent points, and call for examination: the latter, however, has the fatal error of a room not right angled. 36, “Lex,” is an able design, but, through its three stories of windows all round, does not give the impression outside of the purpose of the building. Several of the designs fail in this respect. No. 57, “Whylington,” makes some “turn again” in their passage round the room, for the sake of its arrangement, and will doubtless have suffrages, though it would not have ours. The want of union between the Hall proper and the front building is a grave objection. 20, 37, and 46, have merit in parts. 66, “Faith,” gives a good room, but at greater cost than the conditions permit, and the elevation is somewhat clumsy. 75, “Utilitas,” using coloured bricks, shows a clever arrangement of windows; and 77 is an able design,



but must be out of the question, we should think, on the score of cost.

Sir,—You have inserted a notice or two of the competition for the Telford Vestry-hall, and I think now is the time to give a final word. In an incredibly short space of time seventy-seven designs have been examined, and twelve chosen. For some reason, best known to themselves, the building committees have refused to tell their brother vestrymen which these twelve are, until the time comes for voting upon them on Friday,—that is, they deprive them of their choice till the drawings are removed, and the votes to be given from memory only. Still these secrets will find an outlet, and so two or three designs are spoken of as taking a lead among the twelve, while all the rest are mere rubbish, to the exclusion of others which might come into competition with the favourites of the building committee, whenever the vestry came to vote as a body. Is it too late to ask once more that a professional judge shall be called in? If this is not done, we shall have another chance of doing something good thrown wholly away. There are a few very clever designs; they will be reproduced, it may be hoped, at the Architectural Exhibition. A CORRESPONDENT.

#### HAMPTON COURT PALACE.

ALTHOUGH the members of the London and Middlesex Archaeological Society spent an agreeable and not uninformative day when they met there on the 5th inst. and wandered through the hall, the court, the chapel, the picture-gallery, and the garden, we must take the liberty of saying that it was not the right place for the occasion, and that the proceedings were not of a character to forward the purposes of the society. No papers were read. The Rev. Thomas Hugo gave some particulars of the foundation of the palace, and Mr. A. White, in the chapel, altered by Wren, mentioned the construction of the wooden roof which spans the apartment, and carries the shagreened ceiling it presents, as very peculiar, and calling for illustration. This ceiling is very vividly polychromed, and the walls are covered with exquisite carvings of the period, from the hands of Grinling Gibbons, the drawing in which is singularly pure and beautiful, and deserves the study of architects. The effect of the room is altogether marred by the white glass of the windows. Attention was directed to this by a visitor, and the absence of stained glass was pointed to as an instance of the want of completeness in our public buildings:—we always fear to go far enough. When the medievalists painted every inch of woodwork in their churches, covered the walls with paintings, and laid the floor with brilliant tiles, they took care also to fill the window-openings with glass of "many dyes," so that all was harmonious.

In a new edition of Felix Summery's "Handbook for Hampton Court," an excellent little work, some most valuable extracts from public records are printed, illustrative of the original building and extent of Hampton Court Palace, the state of the arts, and the value of artisans' labour during the Tudor period. These show, amongst other things, that the great hall, though constantly called Wolsey's Hall, was not commenced till five years after Wolsey had given up Hampton Court to King Henry VIII. in exchange for the manor of Richmond. He surrendered it in the 1525, and in the records of expenses, under the date 1531, we find, for example, these entries:—

"Three sawyers of timber (by taske) for the new scaffold to take downe the olde hall [were paid] at 12d. every hundred foot. 16 Oct., Anno 22.

Carpenters making of a framyd scaffold to take downe the roof of the olde hall, every of them [paid] at 6d. the day."

Further:—

"Laborers helping to take downe the olde hall [received] 4d. the day."

And,—

"Warden and settlers taking downe of the freestone of the olde hall [paid] 3s. 8d. the week, each of them."

Our readers will thank us probably for a few items, as to the labour of bricklayers, masons, and carpenters, in erecting the present hall:—

"Bricklayers working in and upon the foundations of the New Hall, every of them at 6d. the day. March, anno 23 H. VIII.

Free masons, at 3s. the week, every of them working in trestle upon dores, wyndowes, carynes for buttresses, and gresse tables for the Kynges New Hall.

Carpenters working upon the flowres of the said Hall, every of them at 6d. the day. In March, anno 23.

Carpenters for working in their hives (tynns and drynks) tynns upon the Hall, for the laste expedicion of the laste summer—every of them rated for every 9 hours 7d. in all amongst them."

Joiners were paid at the same price. In May, anno 24.

The following entry refers to portions of the hall which are obvious, and increases the interest of an examination of it,—

"Payd to John Wright, of Sonthem Memy, freemason, for working, carving, and intayling of 16 severall fre stones for the reparyce of the Kynges New Hall, whereof two of them curiously engraved with the Kynges armes, with the crowne, and two of the Kynges beste stande at the upper ende of the sayd Hall, and ten other of the sayd stones engraved, five of them with roses, and other five with porticoles, every of them with two of the Kynges beastes counteryng one against another, stand on either syde of the sayd Hall, and other rest of the sayd 16 stones ingravd with the letters H and R; every of them with the crowne stand in the four anguls of the same Hall, taking for every of the sayd stones 800 brought, clensyd, and fully fynysht, by convensyon, 22s. 6d."

Again:—

"Payd to Thomas Johnson, of London, karver, for making of 29 of the Kynges bestes to stand upon the newe batiments of the Kynges New Hall, and upon the fomerell of the said Hall, takyne for every of them so made and set up, 16s. 8d."

"Payd to Richard Rydye, of London, karver, for the making of three pendants bayngs upon the fomerell of the Kynges New Hall, redely fenesayd and set up, at 40s. the pece.

Paid to Richard Rydye, of London, karver, for counting and karving of a rose caryond standyng in the crowne vought of the fomerell of the Hall, 13s. 4d.

Also payd to Richard Rydye, of London, karver, for the making of 16 pendants standing under the hammer beam in the King's New Hall, at 3s. 4d. the pece."

Under the head of smith's work:—

"Payd to Raynalde Warde, of Budley, for 7350 of dubblyl tenpenny nayles inglys, at 11s. the 1000. Also, 2000 of synggle tenpenny nayles, at 5s. 8d. the 1000.

Also, 12,000 of sixpenny nayles, at 8s. 6d. the 1000.

Also, 5000 of fivepenny nayles, at 2s. 10d. the 1000.

Also, 4000 of fourpenny nayles, at 2s. 4d. the 1000.

Also, 1500 of rought nayles, at 10d. the 1000." Various extracts exemplify the character and the extent of the painted decorations which were carried throughout the palace—to the painting even of the "chymney shafts." Thus:—

"Payd to John Hethe, payntour, of London, for the paynting of 6 great lyons standing abowght the battymett of tymbre worke uppon the Kynges new hall, theyre vanyns gylle with fyne golde and in oyle, price the pece, 20s.

Also to the same, for gyltyng and paynting of 4 great dragons, there vanyns layde wythe oyle, price the pece, 20s. serving for the said battymett.

Also to the same, for gyltyng and paynting of 6 grethownds, three vanyns with oyle, price the pece, 10s. serving the said battymett.

Also of 4 lyons, serving for the fomerell, with there vanyns layde in oyle, price the pece, 20s."

As to wages:—

"Freemasons.—The master (John Molton) at 12d. the day. The warden (Wylliam Reynolds) at 5s. the weke. Setters (twelve in number) at 3s. 6d. the weke each. Lodgemens (fifty-six named, and the cost placed against each name), each 3s. 4d. the weke. Hard hewers (one at 4s.) ten at 3s. 4d. the weke.

Carpenters.—The Master at 12d. the day. The Warden at 8d. the day. The rest, being 'prentises,' receive from 4d. to 8d. the day.

Bricklayers.—The Master at 12d. the day. The Warden at 8d. the day. Fifty-four at 7d. the day. Three at 6d. Seventeen at 5d. Four at 4d. the day.

Joiners.—The Master at 10d. Seventeen others, who are named, received 7d. the day. One 6d. Two 4d.

Paynters.—The Master at 12d. Three at 8d.; and one 'grinder of colors,' at 5d. the day."

Want of space prevents us from going further with these records. The gardens were in beautiful order, and the day, as we have said before, was spent very pleasantly.

#### NEW MUSEUM AT THE INDIA HOUSE, LONDON.

SOME considerable alterations, to give increased space for the collection of models and works of Indian art, have been going on at the India House for some time past, under the direction of Mr. Digby Wyatt, the present architect of the Company; and though the Directors have now something else to think about, the works are being completed, and the collection arranged for public inspection. What was the Tea Sale-room has been transformed

into an Indian Court, with columns and arches of Indian fashion, and appropriated, mainly, to sculptured antiquities,—slabs and figures. Some elaborately cut stone panels of Indian work have been set up to form a screen. The carving of some of the groups displays wonderful finish. The deputy secretary's residence, and other parts, have been thrown into the Museum; and the whole now occupies a considerable space. The amount of the contract is about 2,500*l.*: with the fittings, the sum will probably amount to 3,500*l.* Messrs. Hack and Son, of Poplar, are the contractors.

The collection at the India House is one of great interest: those who would study Indian architecture must go there to do it. Of minute carving and metal-work, there are some beautiful specimens.

The first establishment of the East-India Company, we may remind our readers, was by charter of Queen Elizabeth, dated December 31, 1600. This was renewed by James I. in 1609, and at other times by other sovereigns. About the year 1773, money was lent to the Company by the country, and the Company was placed under the control of the king's ministers. The present building, on the site of an older structure, was commenced in 1799, from the designs of Mr. R. Jupp, architect to the Company. Parts were afterwards added by Mr. Cockerell and Mr. Wilkins.

Dreadful as the recent much-to-be-deplored events in India have been, they will probably bring great advantages to the human race: India will be more entirely ours, and the progress of Christianity and civilization more certain and rapid.

#### WORCESTER CATHEDRAL.\*

Having completed my survey of the church, I now descend to the crypt. This is co-extensive with the choir, made first into three principal divisions, of which the central and widest one terminates to the east in a semicircle: this is again subdivided by two ranges of bearing shafts into three avenues, and the middle one bisected again by a row of shafts on the longitudinal axis. The lateral portions are in like manner equally divided by a row of shafts down the middle. The shafts are of moderate diameter, the section of the abacus, the usual Early Norman one, and the capital cubical masses overhauling the shaft, and rounded off at the corners—what has been called the cushion capital,—to be found, I believe, in the Romanesque of every country in Europe. These carry flat, broad, transverse bands, which tie them together, and bound every compartment of the roof, which is Roman quadripartite vaulting. I remarked on some parts of the wall very well-preserved painted designs, one an architectural design of a trefoil-headed arcade, and some escutcheons quartered with *fleurs de lis* and lions rampant, so that these can scarcely lay claim to an antiquity higher than the twelfth century. To the crypt itself is attributed, as in the case of all similar localities, a fabulous, or rather a legendary origin, St. Oswald receiving the honour of being the founder. This is manifestly absurd, its date clearly not being earlier than the Conquest, and perhaps not much later than that event. There is no part of the building I viewed with greater interest than this subterranean relic of a remote age, once the scene of the worship of our forefathers—now the receptacle of their ashes,—unheeded by all save the inquisitive explorer, though in truth it may be regarded as the mine containing the rugged ore which the genius and patient thought of successive labourers gradually elaborated into the richest and most cherished gems of Medieval architecture.

Of the screen of Portland cement which closes the choir to the west,—hideous beyond the power of words to describe—affecting an imitation of Early English below, and running up into vertical paneling and battlemented parapet above—of the similar obstruction which shuts up the sides, and breaks the connection between the choir and the Lady Chapel—a little less offensive in style and material,—I shall content myself with remarking, that the only sentiment excited by these disfigurements is an earnest hope that the day may not be far distant when every Cathedral shall possess a dean and chapter with sufficient love of the art, sufficient knowledge of its principles and taste in their application, to prevent for all time to come the perpetration of similar barbarisms.

Of the numerous tombs, to be found in this cathedral, I shall designedly omit all description, because, though of great interest and value in an archaeological

\* See p. 569, ante.



view, my present purpose is to confine myself to subjects strictly architectural, in which category the celebrated Mortuary Chapel of Prince Arthur may be fairly included. This monument is raised in the south branch of the lesser transept, and the proximity of the scene of the prince's death, Ludlow Castle, Salop, to Worcester, may account for its cathedral having been selected as the place of its interment. This chapel is said to have been completed in 1504, two years after the death of its occupant. It is a very elaborate and perfectly preserved specimen of what I should call a happy compromise between French Flamboyant and English Perpendicular, avoiding alike the stiffness and formality of the vertical lines of the one, and the extravagant waving forms of the other. I am much mistaken if it be not the work of a foreign artist. The design of the tracery of its open-work parts is very pleasing,—the slender buttresses dividing the compartments with their ogee-formed overhanging canopies, effigies of kings, martyrs, prophets, and saints, are sufficiently ornamented without being overlaid with decoration, and the general result is a combination of richness and sobriety not often attained in productions of the sixteenth century. The parapet which crowns the chapel is unusually lofty, and in this perpendicular lines predominate. The interior is roofed with a flat ceiling, made the field for a display of elaborate stone-cutting, and from it hangs a pendant near each end, sustained by a stone rib rising from the wall, and abutting at its upper end against the pendant. The solid part of the chapel is literally covered to the exterior with very well cut and deep carvings, amidst the variety of which I discovered the rose, portucullis, fetterlock, the garter with its motto, the angel with expanded wings and scroll, bundles of arrows, prince's feathers, and the pomgranate-bud of the house of Arragon.

Of the exterior it is not necessary to say much. Of few of our cathedrals is the general outline so little satisfactory, and the details present, indeed, a melancholy aspect. It is quite impossible to fix upon a single feature which can be offered as a pleasing illustration of any period of architecture. Not a fragment of a pinnacled parapet to lighten the heaviness of the walls,—not a single buttress betokening acquaintance with the fact that these members may contribute to the beauty as well as to the solidity of an edifice,—not a turret or pinnacle of the original construction. Here and there are some slight indications of an earlier building, coeval perhaps with the transitional part of the interior,—among which may be named some remains of a corbel table of trefoil arches along the clerestory walls, a line of trefoil excavations at the top of the porch on the north-west side, and a few buttresses of very shallow projection, with a shaft at each corner. The clerestory windows of the choir are of the most disagreeable form, two straight lines meeting at the apex, slightly curved at the lower extremities. The only portions of Early English construction retaining their primitive form are the windows in the sides, and one front of the smaller transept; and even these are marred by the introduction of tracery of the Perpendicular period. The central tower, though not displeasing in its proportions, is but a poor example of a style so rich in this fine external feature: nothing can be more meagre than the panneling of its roof stage; more unsightly than the naked triangles which form the canopies, unadorned with crockets or finials; more insignificant than the statues and canopies of its belfry story. The angular buttresses and turrets I presume to be emanations of the genius which transformed the interior of the great transept into the precious Gothic of which I have before spoken.

The external restorations just completed are briefly these. At the west front the gable has been rebuilt, and the angular buttresses replaced. These are very plain, but perfectly suitable to the character of the front—of three or four stages upwards, marked by plain set-offs, or triangular canopy, carrying large crockets and finials. The south front of the eastern transept has been restored, in strict accordance with the opposite one. The east wall of the Lady Chapel is entirely a reconstruction, and the disposition of the window, its main feature, will be understood from the description of its internal design. In the arch mouldings of the upper range of lights are introduced two bands of the tooth ornament, which also enriches the raking lines of the triangular gable, and the hollow mouldings of the trefoil light opened in the gable. The buttresses at the corner, of plain Early English character, have been rebuilt consistently with what was discovered to be their original disposition when disencumbered of the unsightly masses of masonry which shored them up. In the design of the turrets which crown the buttresses at the angle of the smaller south transept front, the same success has not been attained as in the internal restorations. They are of eight sides, with a shafted arched opening in each face, and surmounted by an immoderately heavy octagonal pyramid,—the whole as unlike the graceful turrets of

our Early English churches as the imagination can figure to itself.

The cloisters, situated to the south of the cathedral, will not repay a lengthened examination. The tracery of the arches which once surrounded the quadrangle has been cut out of every one. The vaulting of the corridors, however, still remains, a very good example of the Perpendicular period, and there are other parts of the old Norman work which are worth looking at. These are a circular arched doorway, the entrance on the south side, with five shafts in the sides, carrying as many concentric retiring orders, with roll-formed edges, some of them carved. The wall of a covered passage leading to the east end of the cathedral is relieved by an arcade of round arches on attached shafts, with rude cushion capitals, and in another passage, conducting along into the north side of the cloister, there is a pointed transverse arch, ornamented with the Norman zig-zag, and a few compartments of Transitional vaulting, with chamfered diagonal ribs.

But the most interesting and important relic of the Norman era is the Chapter-house, nearly in an unaltered state. Externally a regular decagon, it assumes the circular form within. In the centre rises a single shaft, from which radiate the roll-formed ribs of the vaulting, and fall upon shafts attached to the wall, between the windows (Perpendicular ones replacing the old ones). Above each window subordinate vaulting cells rise into the principal vault, intersecting at a point below its vertex, after the manner of Welsh vaulting cells. A billet-ent string runs beneath the windows, and below, the wall is ornamented with an arcade of interlacing semicircles, every pointed compartment thus produced enclosing a smaller round-headed panel on attached shafts. Thence to the floor shallow circular-headed niches are scooped out of the solid surface. The capitals are of the cushion form, and the arcade is formed by sunk surfaces, without the addition of mouldings; and yet nothing can be more pleasing than the effect produced by the employment of means so simple.

In this sketch of the cathedral of Worcester, I hope I have omitted no important architectural feature which can aid in arriving at a comprehension of its various styles, and that I may have succeeded in conveying some idea (an imperfect one it must necessarily be) of its most conspicuous beauties. I ought perhaps earlier to have noticed the fact of the total disappearance of the ancient stained glass, of which I do not believe a single square survives. As a compensation, we have three or four modern painted windows, but as my recollections of the glorious specimens of this beautiful art in continental churches, and in many of our own too, incline me somewhat to disparagement of the efforts of the revivalists, I will express no opinion upon them.

VIATOR.

#### CHOLERA THREATENING.

HAMBURG has ever been our warning; and now again Hamburg has been attacked by the dread king of epidemics. It may be a nice question, for the moment, whether the precise degree of cold which has now superseded the summer heats be sufficient to check the growth and progress of the ferment till next year; but there is too much reason to believe that next year will be a time of slaughter in England scarcely less horrible, and far more extensive, than that which now is deluging the towns and fields of upper India with blood. In the midst of this sad prospect, however, there is hope that in many towns throughout England, where sanitary efforts have been made, there will be a decided triumph over the great enemy, although in others a deadly defeat. The direct and powerful influence of cleansing processes in paralyzing this fell destroyer has been proved over and over again. Nay, we now know precisely what class of persons will furnish by far the greater number of victims to cholera, and on what street—it may almost be said on what house—it will descend. We can lay our fingers, without the slightest liability to error, on the weak places which it will assail and invest. If such knowledge as this had been imparted to us without power of averting the danger, we must foresee it is hardly possible that a greater curse could have descended upon man; but, just as surely as we know when the cholera will burst forth from its smouldering ashes, and where it will make its most destructive ravages, so surely we know how to check its appearance in some quarters, and mitigate its force in all; and the precautions which we may adopt for this purpose will not be superfluous if the visitation which we apprehend should be withheld, inasmuch as they will bar the progress of other diseases which are never absent from among us, and improving the moral as well as the physical well-being of society at large.

The General Board of Health is awake, as it ought to be, to the danger that now impends. It has just issued advice to local boards as to the precautions that ought at once to be adopted. The following are among

the most important suggestions offered. "First, that the air within and about dwelling-places be not contaminated with offensive organic effluvia, such as arise when the houses themselves are ill-ventilated, overcrowded, and unclean, or when their refuse is not properly removed from them by drainage or otherwise, or when any filthy accumulations exist in their neighbourhood, or when the local sewerage is defective. Secondly, that the public supply of water be, as far as possible, unpolluted by any kind of animal or vegetable impurity; for where cholera is present or impending no house can be considered safe for habitation in which there is any offensive smell of animal refuse, or of other putrefactive animal or vegetable matter; and no water can be considered safe for drinking into which there flows (as is often the case with rivers and with wells in the neighbourhood of houses) any habitual discharge of town refuse or any accidental soaking or leakage from drains or cesspools."

Full details are also given of the powers possessed by the local boards under the Public Health and Nuisances Removal Act, and which ought stringently to be exercised at this time. They relate principally to matters of sewerage and drainage, and generally to the prevention or removal of all impurities which taint the atmosphere or hinder the diffusion of personal and domestic cleanliness. The following observations can scarcely be too widely circulated and regarded at the present moment:—

"It is possible that no human efforts may suffice to avert the course of that epidemic ferment which thus, at certain intervals of time, comes, as it were, to test the sufficiency of our sanitary defences. But public authorities, armed with the existing powers of the law, can do almost everything to render the mysterious influence innocuous, by removing those local conditions through which alone it is enabled to destroy life in this climate."

Local boards may be well assured that, if any precautions adopted by them against cholera should hereafter seem to have been superfluous in relation to the epidemic—if the suggested possibility of another visitation should happily not now be realised—the pains and cost which may have been given to sanitary improvement will in no degree have been wasted; since undoubtedly such exertions will have borne fruit in preventing other disease, and in lessening both the misery and the expense, the waste of life, and the waste of money, which are now the consequence of defective sanitary arrangements."

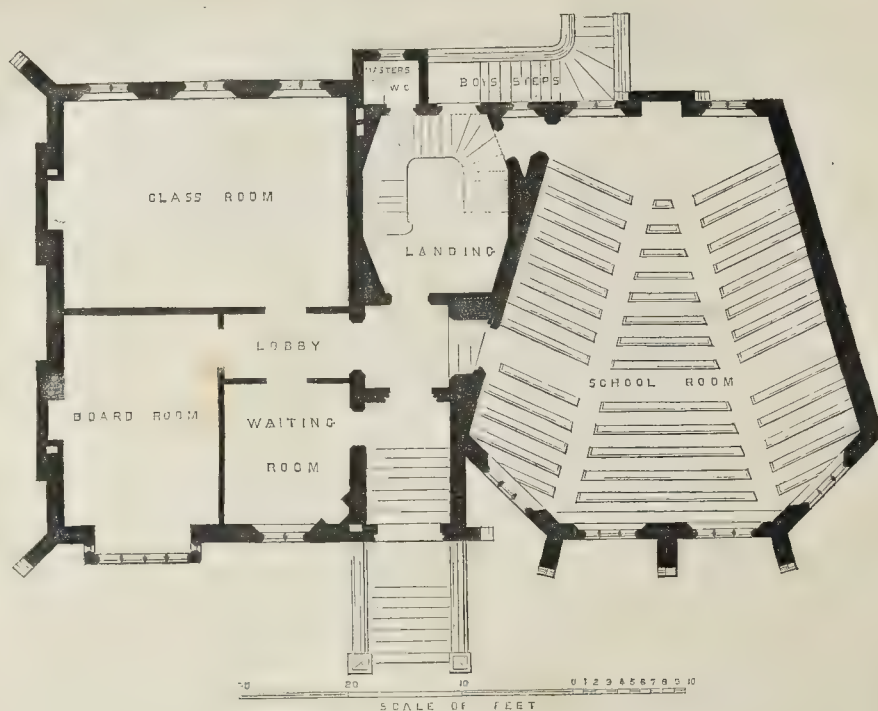
Other authorities besides the Central Board of Health are already moving in this matter throughout the country. The Health Committee at Liverpool have had some discussion on the subject. At Tynemouth, the town-council, as the local board of health, are said to be adopting measures for the conservancy of the public health, and none know better than the Tynemouth people, from happy experience, the immunity from attacks of cholera to be realised by attention to the proper sanitary measures. In London itself, the medical officers of health have been calling attention to many nuisances which ought forthwith to be abated; and particularly to the disgusting condition into which the arches and other portions of the Farringdon-street or Clerkenwell "improvements" have again fallen, as well as to the accumulations of filth in such waste places as those in Angel-alley, Bishopsgate-street; Willis-court, Brackley-street; Half Moon-alley, Little Moorfields; Feather-bed-hill, Moor-lane; and Sussex-place, Leadenhall-street.

All this is but a beginning, of course; and doubtless within the next few months there will be such a cleansing process going on throughout the country as it has not had for some years. Better late than never; but were such processes to become perennial, as we have long laboured to render them, they would immensely contribute so to promote the general health as to enable it to withstand and defy the choleric virus at all times or at any time or place it might happen to appear.

#### FOREIGN INTELLIGENCE.

*Transmission of Designs and Autographs by Electric Telegraph.*—Professor G. Carilli, in Florence, has invented an instrument by which the above wonderful desideratum is to be accomplished, and which is well spoken of by the Italian press. It consists of a metallic pendulum, which moves horizontally, and to which is attached a metallic indicator, moved by the oscillations of the pendulum, which at each oscillation descends at a slow rate. Before this indicator is placed a surface, on which the despatch is written. As the pendulum oscillates, the indicator passes along this surface as much as this is possible by the extent of the oscillation, and this passes over all the space of the writing (design) which lies in the line of its movement. As the indicator descends at each oscillation at the rate of the fraction of a millimetre, it must successively meet all the points of the surface on which it operates.





GROUND PLAN OF PHILOLOGICAL SCHOOL.

#### PHILOLOGICAL SCHOOLS, NEW-ROAD, MARYLEBONE.

THESE schools are built in the style of the Domestic architecture of the fourteenth century. The materials used are red brick facings with Bath stone dressings. A handsome flight of steps leads to the entrance-porch opening to a lobby, from which rises a staircase of Portland stone ascending to four spacious class-rooms, arranged for various purposes on the respective floors. The ceiling to the staircase is of oak, with carved bosses at the intersection of the panels. On the ground-floor is a theatre or lecture-room, capable of accommodating 200 pupils, in the form of an elongated hexagon, roofed with massive arched ribs springing from the angles resting on stone corbels, the whole being surmounted by a ventilating turret. By this arrangement a picturesque elevation is obtained externally. A playground for the boys in wet weather is formed under this portion of the building. Besides the theatre and class-rooms, there is a board-room, panelled with oak, lighted by an elaborate oriel window. There are various other rooms and conveniences suitable for the domestic arrangements. The building has been erected from the designs and under the superintendence of Messrs. W. G. and E. Habershon, architects. The builders are Messrs. Thompson and Crosswell, of Islington. The contract was taken at 3,693/.

#### WARMINSTER ATHENÆUM. A HINT.

WE are not of those who would altogether deery eclecticism, but those who select and join must at any rate select what is good and produce harmony in joining. A building is in course of erection at Warminster, Wiltshire, for the purposes of the Athenæum and Literary Institution, at the cost of 1,325/., which, if finished in accordance with the view of it given in the *Illustrated News* last week, will be a constant cause of ridicule and vexation. Such a strange mixture of the unadulterated forms of the late Gothic and the London-Dwelling-house Italian style was probably never seen. Pointed arches, a Gothic bay window, and Gothic strings, are joined with rusticated quoins and Italian balusters: a horizontal piece of Gothic label moulding over some of the windows is carried on trusses, and, most incongruous of all, the doors,

one on each side of the façade, have a "frontispiece" of columns, entablature, and a broken pediment, with a bust in the opening.

We speak more harshly than usual, in the hope as the building is in progress only, that we may induce reconsideration, and so prevent what would certainly prove very unsatisfactory.

#### DISTRIBUTION OF MEDALS

BY THE DEPARTMENT OF SCIENCE AND ART,  
MANCHESTER.

THE annual distribution of the national medals for drawing among the students of the Schools of Art of the United Kingdom took place in the Manchester Town-hall, on Friday evening, the 9th instant, under the presidency of Earl Granville. The exhibition of the prize designs by students in all the schools of art in the kingdom had previously been opened at the Manchester School of Art.

Mr. Edmund Potter, the chairman of the committee of the Manchester School of Art, having commenced the proceedings,

Mr. Redgrave explained the course followed in schools of design or schools of art, in order that the system on which the awards were made might be properly understood. A system had been adopted by which education was now given in all schools for the poor, and so given that any town in the kingdom might avail itself of the opportunity to receive this instruction. Any town which chose to take the trouble of registering 500 students, or 1 per cent. of the population, who were willing to pay 6d. for instruction for one year in drawing, might have a master recommended who would undertake for that small sum the instruction of those 500 children for one year, giving them one lesson per week. The State further undertook to test this instruction, to see that it was soundly carried on, and at the end of the year would send an inspector down, and by means of papers from which there was no escape would examine those boys who chose to come up for examination. And, to induce them to come up, a small prize was given to every successful child, the prize being of materials that would assist him in the further progress of his art instruction. Moreover, to give the master an inducement, for every boy who received such a prize a small payment was made on his behalf

to the master, which was in aid of the mere 6d. he had to pay for the twelve months' instruction. In the course of his speech Mr. Redgrave stated, as a reason for not delivering the medals that evening, that desiring to give the very best work of art that could be obtained, they had been obliged to go to a foreigner to produce the die. He hoped that on future occasions the art would stand well enough to produce its own medals, but on this occasion the medal would be the work of Mr. Vechte, whose works stood forth pre-eminent in the great exhibition in Paris. Mr. Vechte was engaged to give them one of the finest medals he could produce, and said he was using all his efforts to produce one of the choicest works.

Several years ago the Art-Union of London set forth in a special report, which was extensively circulated, and received the attention of a committee of the House of Commons, the want of encouragement in this country to medal-die engravers, and the consequent fewness of artists in that department, and the Art-Union commenced a series of medals in honour of British artists, which has been regularly proceeded with, and is now of some extent. There is still little encouragement for the prosecution of the art, and the number of efficient professors is singularly small. Returning from this digression,—

Lord Granville delivered a very interesting address, showing the need there was for the establishment of schools of art in this country, the value of a knowledge of drawing, and some of the results which had followed the efforts already made. "I believe it is a result," said Lord Granville, "to find that the students in these schools in the last ten years have become exactly ten times more numerous than they were ten years ago. I think it is a result to find that our education costs exactly one-fourth of what it did seven years ago. I think it is a result to find that our cabinet-makers and upholsterers and paper-hangers, and almost all the most eminent ornamental metal-work men, have got in their establishments at this moment men whom they have drawn from schools of art in different parts of the country."

The names of the prizewinners were then called over by Mr. Cole, and the certificates handed to them by the president. The Right Hon. Mr. Cowper, M.P., Canon Richison, and others, afterwards took part in the proceedings.





PHILOLOGICAL SCHOOL, NEW-ROAD, MARYLEBONE.—MESSRS. W. G. AND E. HARRISON, ARCHITECTS.



## CHURCH-BUILDING NEWS.

**Higham Ferrers.**—The church of Higham Ferrers is to be thoroughly restored under the direction of Mr. Slater. The works will comprise the rebuilding of the north aisle and arcade, and the removal of the roofs throughout: it is also intended to reseat the whole with open seats. The amount to be expended is about 5,000*l*. The contract has been taken by Messrs. Ruddle, of Peterborough.

**Walsoken.**—At a meeting lately held in the vestry of Walsoken church, the new rector, the Rev. G. Davies, laid before the meeting plans and estimates for the restoration of the church and the erection of schools, the sum required being about 1,200*l*. The rector commenced the subscription with the sum of 200*l*.; Mr. R. Young followed with 125*l*.; Mr. E. Jackson, 75*l*.; Mr. W. Sharp, 35*l*.; and before the meeting separated the sum exceeded 500*l*.

**Tranmere.**—St. Paul's Church, Lower Tranmere, has been consecrated by the Bishop of Chester. The church, which stands in a field near the Old Chester-road, is built of red sandstone, in the Early Decorated style. It consists of a nave and transepts, with chancel and organ aisle, with steeple at the south-east angle of the chancel. The nave is 38 feet wide, by 75 feet in length, and 52 feet high. The transept is 70 feet by 28 feet, and the chancel 30 feet by 26 feet. The steeple, which is not yet built, will be 147 feet high. The roof, which is simple, is supported by oaken beams and joints, burnished of a natural colour. The church at present holds 700 persons, but when galleries are placed in the transepts, there will be room for 350 persons more. The architects of the church are Messrs. Hay, of Liverpool. The total cost was 3,100*l*.; all of which has been raised by the committee and the residents in the neighbourhood, who also previously built a parsonage and schools, which cost upwards of 1,000*l*. The steeple has yet to be built, at a cost of 500*l*.

**Gloucester.**—The cemetery for this city has now been consecrated. The ground is situated to the south-east of the city, towards Robin's Wood-hill, and near Tredworth and the road to Painswick. Messrs. Medland and Maherly, of this city, were the architects employed; and Messrs. Wingate and Sons were the contractors for the erection of the chapels, lodge, mortuary chamber, boundary walls, and entrance-gates; and Mr. Thompson for the road-making and drainage. The cemetery is about thirteen acres in extent, eight of which are appropriated to the Church of England, four for Dissenters, and the remaining portion is occupied by roads and footpaths. The approach from the Painswick-road is by a new macadamised road and footpath, and the boundary consists of a dwarf stone wall, with piers and iron railing. The entrance-gates are of wrought-iron, executed by Mr. Rogers, of Tewkesbury. The chapels are in the Decorated style of thirteenth century: they are placed side by side, and connected by two vestries and an archway. Each chapel is 35 feet long and 18 feet wide, with open timber roof, stained oak, and varnished. Over the central archway rises a stone spire, upwards of 80 feet high, surmounted by a vane. The tower contains a bell weighing 6 cwt. and a stone staircase is provided for access to the belfry. Each gable of the chapels in the east elevation is pierced with a three-light window, filled with Decorated tracery of a Geometrical character. The gables in the west elevation are each pierced with two two-light windows, and each gable is surmounted by an ornamental cross. The side elevations of the chapels are broken by the porches; one on the south side forming the entrance to the Dissenters' chapel, and another on the north forming the entrance to the Episcopal chapel. By this arrangement the chapels are kept entirely distinct and separate as regards religious rites and ceremonies: at the same time, being connected by the vestries and archway, they unite to form a whole. The ground has been drained to a depth of 10 feet.

**Berwick.**—At a meeting of the trustees of Golden-square chapel here, for the purpose of deciding on a plan for the proposed new chapel to be erected on the Parade, the plan with the signature "La Verité" was fixed upon. This plan was furnished by Messrs. Hay, of Liverpool. The resolution was carried by a majority of two votes, the numbers being eight to six, the rest of the twenty-four trustees and twelve elders having declined to vote. Another plan, that signed "Theory and Practice," had six votes. Mr. Hay submitted two plans, or rather one plan with a modification. The first includes a spire, which, however, would involve an outlay of 600*l*. over the 3,000*l*. to which the congregation have restricted the expense: the other is identical with the first, exclusive of the spire, and this is the one accepted. The building will be constructed in the Middle Pointed style of architecture, and will be capable of accommodating on the ground-floor 770 persons, and in the galleries (which are small) 238, making a total of 1,008 sittings. The building will be cruciform in shape.

**Llandinorwig.**—The ceremony of consecrating a church, newly erected in this mountainous and comparatively unknown region of Carnarvonshire, was performed on Thursday in week before last, by the bishop of the diocese. The site of the building is an elevated spot on the left hand side of the road, between the two portions of what has been hitherto known as the village of "Ebenzer," just before arriving at the turning towards the slate quarries, on the road leading to Llanberis. It commands an extensive view of Carnarvon harbour, Anglesey, and the Menai and tubular bridges. The school,—a structure at the right side of the road, and south-west of the church,—was first erected, and a minister licensed to hold services and preach there till the more pretentious edifice designed for the congregation could be completed. This school is calculated to contain 800 children. The church is designed in the Second Pointed style, and consists of a nave, which is 56 feet 6 inches long, by 18 feet 6 inches wide; north and south aisles the same length as the nave, but 15 feet wide, and divided from it by arcades of five arches; a chancel, 25 feet 6 inches long by 16 feet 6 inches wide; a south porch; robing-room on the north side of the chancel; and a tower and spire, which are placed at the west end, the lower story being thrown into the body of the church, by means of a lofty arch. The whole length of the church is 93 feet 6 inches internally, from east to west. All the dimensions given are internal dimensions. The sittings and fittings throughout are of pitch pine, lightly stained and varnished, and the sittings are calculated to accommodate from 550 to 600 persons, although on the occasion of the opening there were many more than that number present. The east window, of tracery, is filled with stained glass. The architect was Mr. H. Kennedy, of Bangor, and the works have been entirely carried out by Welsh workmen, under the direction of Mr. John Jones, foreman of the building department at Port Dinorwig. The whole of the carving has been executed by Mr. Evans, including the font and corbels in the chancel, representing angels holding sacred emblems. The corbels and bosses in the remaining part of the edifice are carved in a variety of devices and patterns. The roofs are of deal, stained, and opened to the ridge, which outside has an engrailed slate ornamental ridging. There are double and single lighted windows in the aisles, the larger ones being placed east and west, the smaller ones north and south. The external elevations, east and west, show three gables. The floor of the chancel is laid with encaustic tiles, and the furniture is by Mr. Griffith Davies, of Bangor. The churchyard is surrounded by a sunk fence, and an iron railing next the road. The entrance-gates, which are of wood and iron, are placed back from the road in a semicircular recess. The warming of the church, which is by heated air, was laid down by Mr. W. Bennett, of Liverpool. In addition to the church and school-room, with the sites, the graveyard, and an endowment of 200*l*. per annum, Mr. Asheaton Smith, to whom the congregation are indebted for the erection of the whole, has caused to be built, at the north-east end of the churchyard, a house for the residence of the clergyman; and the whole work has been designed and accomplished without regard to amount of expenditure. The erection of the church and parsonage, we hear, will cost 7,000*l*.

**Kilkenny.**—The Roman Catholic cathedral of Oserry has just been consecrated. The edifice is cruciform. Its length from the grand portal to the recess behind the great altar, is 162 feet. The nave is 30 feet in width, and the aisles 15 feet wide each. The total width of the nave and aisles is 60 feet, and the breadth of the building at the transepts is 100 feet. The tower, which springs from four symmetric arches at the junction of the nave with the transepts, rises to a height of 186 feet 6 inches, measuring to the top of the pinnacles. The crypt and chancel of the church form a space describing five sides of an octagon, lit by nine lancet windows above, and five below. Three of the upper windows, and all the lower, are filled with stained glass. The transepts are lighted by triplet lancet windows of stained glass, with smaller windows at the sides. The transept doors are enclosed by moulded Gothic portals, comprising cut pillars and arches, somewhat similar to the side doors of Christ Church Cathedral, in Dublin. Beneath the crosses on the gables are carved niches, with canopies, for the reception of statues. There are also niches above the doors. Each of the transepts is flanked by two towers, surmounted by open panel-work in cut stone, and carved pinnacles. The grand window over the principal entrance at the front gable is flanked by towers. This window is divided into six compartments by stone mullions; these compartments inclose panels of stained glass representing the stages of the Passion of the Redeemer. The interior is divided into nave, aisles, choir, transepts, crypt, and side chapels. The nave is divided from the aisles by five stone arches, supported by symmetrical pillars. Above these arches the walls are perforated by double

lancet arches, giving a borrowed light to galleries running above the ceiling of the aisle. Above these open are placed triple Gothic windows, corresponding with the arches. From brackets between the windows, trellised rafters support the carved ceiling of stained and ornamented wood-work, with a cornice running the entire length of the nave. The floor of the church is a mosaic of black marble and white stone. The choir is approached by steps of black marble. The interior of the tower is open, and ornamentally ceiled at a high elevation. The sanctuary is approached by two further steps of black marble. The high altar is constructed of varieties of Italian marble, gilded at the margins' mouldings of its panelled compartments. It is surmounted by a carved marble tabernacle. In the centre, over the tabernacle, is a large gold cross. At either side of the church are votive chapels, one of the Virgin and the other of St. Joseph,—the altar of the Virgin's chapel being similar to the high altar, but of smaller proportions.

## PROVINCIAL NEWS.

**Norwich.**—The statue gallery and class rooms of the Norwich Government School of Art have been re-coloured during the vacation, and the ventilation made complete. The casts have been classified and arranged so that visitors can more conveniently view the collection.

**Brantree.**—The new factory of Messrs. Walters and Co. of London, which has been erected in this town by Mr. Laver, builder, for the manufacture of figured silk, is just finished: it is 75 feet long, 30 feet wide, and it has two floors 12 feet high.

**Woolton Wamen.**—The new national schools and teacher's residence which have been lately built here were opened on Michaelmas-day. They are erected on a commanding situation between this place and Henley, and form a pleasing object from the road. The buildings were designed and erected by Mr. G. Clark, of this place.

**Bristol.**—Messrs. Cox and Daniel have laid before the Corporation of Bristol a plan, prepared by the Messrs. Popes and Bindon, architects, of this city, for the formation of a new road to Clifton. The proposed new road would start from the Deansley, College-green, and be carried across College-street, Limekiln-lane, Queen's-parade, at the end, and the lower part of Brandon-hill, to Woodwell-crescent. Crossing Woodwell-lane by a viaduct, it would enter the Golden property, passing through it to its termination at Clifton-hill. The distance from College-green to Clifton church, by the present circuitous route, is 6,000 feet; by the new route 3,800; the gradient by Park-street is 1 in 11; that of the more direct route 1 in 25. Nearly all the land required for the formation of the proposed road, that is, from Limekiln-lane to Clifton-hill, belongs to the corporation and the present possessor of the Golden estate, who, it is said, will present her portion of it to the city. A subsidiary part of the scheme is a road from Clifton church to Cumberland basin and the Hotwells.

**Garston.**—At a recent meeting of the Board of Health, the surveyor, Mr. Standing, submitted plans, sections, and specifications for making sewers in Mersey-road, Aighburth-road, Gmardens-road, and Garston Old-road; and it was resolved that tenders be obtained for sewers and for loams, amounting to 5,500*l*. on the security of the special district rates for Aighburth and Gmardens-road, for terms of five or seven years, in sum of not less than 500*l*. for the purpose of carrying out the plans.

**St. Helen's.**—A water-main, for the use of pedestrians, has been placed in Church-street, St. Helen's.

**Sheffield.**—The Duke of Cambridge has named Wednesday, October 21st, as the day on which he will visit Sheffield, to lay the foundation-stone of the Crimean monument.

**Leeds.**—The Leeds Board of Guardians, at a special meeting last week, resolved to build a new workhouse for the township. The old workhouse, in Lady-lane, had long been looked upon as doomed.

**Gateshead.**—A correspondent, says the *Northern Express*, has forwarded us a list of the tenders received by the board of guardians for painting the union workhouse; we insert it as a curiosity: comment on such "wide" estimating is superfluous:—

Mr. James Anderson, Newcastle ...	£26 19 0
Messrs. Firbank and Son, Gateshead ...	25 0 0
Mr. William Laidler, Newcastle ...	24 0 0
Mr. Thomas Cummins, Gateshead ...	22 10 0
Mr. George Robson, Gateshead ...	19 19 0
Mr. Robert Rawlings, Gateshead ...	10 10 0
Mr. James Sibbald, Newcastle ...	9 0 0

Mr. Sibbald's tender was accepted, conditionally with his finding security for the due performance of the work. The system, remarks the *Gateshead Observer*, commenting on it, is, to speak plainly, absurd and immoral. The work cannot be done for 9*l*., and, we



are assured, would yield little profit at the highest sum named.

**Derby.**—The Arboretum Committee have received several designs for the proposed alseon, and selected that of Messrs. Giles and Brookhouse, architects. The same is already in progress, and will accommodate about 5,000 persons. The estimated cost is 3,000/.

### THE PROFESSORIAL CHAIR AT THE ROYAL ACADEMY.

"THE PRESENT POSITION OF GOTHIC ARCHITECTURE."

**SIR,**—On dit, that Mr. Scott is desirous of occupying the professorial chair at the Royal Academy. If this be so, he could not well have shown his utter unfitness for the office in a stronger light than he has recently done by his paper on "The present Position and future Prospects of Gothic Architecture," read before the Yorkshire Architectural Society, at the Mansion-house, Doncaster. The Professor of Architecture at the Royal Academy should above all things have a truly catholic mind. He should not be bigoted, but willing and able to recognise beauty in whatever style it might be displayed. He ought, moreover, to have such an insight into universal art as to be prepared to point out to the student the characteristic features and beauties, as well as the failings and inherent defects of the several known styles. He need not love all alike, but assuredly, on the other hand, he must not hate any. No lopsided man, no party man—in short, no bigot, can be a fit tutor to the architectural youth of England; and that Mr. Scott is tainted with bigotry, I think none who have read his paper can deny. What an accumulation of deprecatory epithets does he hurl at all architecture that cannot lay claim to the fallacious title of "Christian!" Why, sir, according to his argument, we are not only much worse artistically than were our middle evil (Medieval) forefathers; but because the Englishman of the present day does not have pointed windows and gabled roofs to his house and warehouse, he is, forthwith, immoral—not to be compared with "the monks of old—what a saintly race were they!"—"a Pagan villa," with little better than a Pagan tenant. I fancy few Pagans ever had such domiciles as the modern English, and certainly, as the rule, I think we may say, in favour of our countrymen, that in no foregone age have there been so many happy and Christian homes.

"Christian art is a misnomer," thus saith the *Quarterly Review*; and most heartily do I endorse this opinion,—merely observing that I shall be ready to alter my views on this subject when Mr. Scott and his Mediævalist brethren can prove that the style of which they are such ardent lovers owes its direct origin to Christian doctrine—and can in addition show that no other style can be applied by Christian people in a Christian spirit to the various edifices required in our age. There is nothing more deplorable in the present position of our art than the Pharisaical pride of a few "good-old-times" men, who are ever crying out to all who cannot "go back" with them, "Stand by, we are holier than thou." The Mediæval is the true art, and Pugin was its prophet. I would not say one word against the beautiful cathedrals and churches of the fatherland; neither do I object to the application of the style of those structures in modern ecclesiastical buildings. If we want a church, and our architect *must* copy, better far that they should take for their pattern some building which they can see, than copy from published plates of Greek and Roman temples. But I have wandered far away from my theme; merely took up the pen to call attention to the virulent abuse of general architecture to be found in Mr. Scott's paper, and to ask whether an artist with such an evident animus is suited for a "master." I should indeed be sorry to say anything to injure the feelings of so accomplished a man as Mr. Scott: I believe that of all the revivalists he has been turned to account the doings of our mediæval forefathers, and more than this I think that, beyond other ecclesiastical architects, he has been successful in adopting a style evidently papistical in its ancient treatment to the requirements of our Protestant Creed: that he has quite succeeded, I do not fancy Mr. Scott himself would by any means admit. I wish him all success in his endeavours to push forward and onward his favourite style, but for the sake of art I do sincerely trust that while he is thus a sincere lover of one style, and a thorough hater of all else, he may never speak as professor from the Architectural Tribune at the Royal Academy.

CARICUS.

THE "OTHER EXPENSES" OF THE EAST LONDON UNION.—Under the mysterious heading of "Other Expenses," there are four separate amounts, viz.:—539/ 0s. 11d.; 269/ 2s. 9d.; 227/ 10s. 10d.; 334/ 2s. 3d.; all in one year's accounts! This is a very objectionable mode of accounting for public moneys. It is feared that the old parish disorder formerly known as the "select vestry," is now raging under another name.—**TAXES.**

### COMPETITION DESIGNS FOR LAYING OUT SURFACE AND SUBSOIL OF STREETS.

In reply to the offer of six prizes made by the Metropolitan Board of Works for designs showing the best mode of laying out the surface and subsoil of the new street in Southwark, as an example of a first-class street, and also for the street in Westminster, as a second-class street, showing the disposition of the private vaults, sewers, gas and water pipes, telegraph wires, with any parts of the soil appropriated to other useful purposes, viz.:—

For first-class street .....	100 Guineas.
" .....	50 "
" .....	10 "
And for second-class street ...	50 "
" .....	20 "
" .....	5 "

thirty-nine competitors sent in plans, and these were referred to a committee of seven persons, consisting of four professional men, and the chairman, and two other members of this Board, assisted by the engineer and superintending architect. Mr. Alderman Cubitt and Mr. Wright were the members associated with the chairman, and Mr. R. Stephenson, Mr. T. Hawksley, Mr. G. Lowe, and Mr. T. H. Wyatt were the professional men. The following is a list of the plans:—

Serial No.	Drawings for Design for 1st Class.	Drawings for Design for 2nd Class.	Motto.
1	3	3	Pro Bono Publico.
2	General		The Winner.
3	1	2	Gracious be the Issue.
4	2	2	Sub Terra.
5	2	1	Perseverance.
6	1	1	Fraternitas.
7	2	2	Practical.
8	3		Curâ.
9	3		Desiderium Seculi.
10	1	1	Closcina.
11	3	1	Ferimur per opaca locorum.
12	4		A.D. 2000.
13	4	6	Access, Cleanliness, and Perseverance.
14	4		Est modus in rebus.
15	1		Nemo.
16	1		Victoria.
17	2		Once made, always perfect.
18	5	2	Hope.
19	1	2	(Juvenis) Unus inter multos.
20	3	3	Labor omnia vincit.
21	3	3	Anonymous.
22	6	2	Sperans.
23	1	1	Delit.
24	2	1	Aux grands Maux les grands Remèdes.
25	6		Peto.
26	5	2	Selim's Duplicate System.
27	1	1	Hector.
28	4	3	Closca Magna and Minor.
29	3		Opinions differ.
30	1		Perseverance (in a Circle).
31	1		Unit.
32	4	2	Strada Nuova.
33	3	2	Alma Mater.
34	3	2	Hope.
35	1		Pedestres.
36	2	1	Cleanliness, Comfort, Economy.
37	1	1	Utilitate.
38	4	2	Per Bonitâ del' Uomo e Bestia.
39	4	2	Gully.

The committee have unanimously awarded the several prizes as follow:—

#### FIRST-CLASS STREET.

Serial Number.	Motto.	Name and Address.	Prize.
19	(Juvenis) Unus inter multos.	H. D. Davis, 227, Maiden Lane.	Guineas. 100
32	Strada nuova	James Thomas Knowles, 1, Raymond-buildings, Gray's Inn.	50
11	Ferimur per opaca locorum.	Frederick and Alfred Warren, 2, Duke-st. Adelphi	10

#### SECOND-CLASS STREET.

3	Gracious be the Issue	W. H. Cullingford, 43, Pentridge-villas, Bayswater	50
26	Selim's Duplicate System	Wm. Reddall, 3, Chapel-place, Foulney	20
24	Aux grands Maux les grands Remèdes	Samuel Hughes and Geo. Hopkins, 11, Park-st. Westminster	5

Next week the designs will be open to the public

at the Society of Arts, Adelphi. It does not seem that anything of great value has been elicited by the competition.

### THE METROPOLITAN BOARD OF WORKS.

#### THE MAIN DRAINAGE.

A MEETING of the Metropolitan Board of Works was held on the 14th, specially for farther consideration of the Board of Works' communication as to the main drainage of the metropolis, when Mr. Carmichael, with a lengthened address, in which he stated his objections to the plans of the referees, moved the following resolution:—

"That the reports of this Board submitted to the Commissioners of Her Majesty's Works and Public Buildings, also the report of Messrs. Galt, Simpson, and Blackwell, be referred to two eminent engineers and the engineer of this Board, to report thereon at their earliest convenience."

Major Lyons seconded the motion, and Mr. Wright moved the following amendment:—

"That this Board regrets that the First Commissioner of her Majesty's Works has rejected the Plan B' without communicating to the Board the reason for its rejection."

That this Board, with the assistance of its engineer, has carefully considered the scheme proposed by the referees appointed by the First Commissioner so far as the materials furnished have enabled them, and that, while entertaining great respect for the eminent engineers consulted by the First Commissioner, it has arrived at the conclusion that the scheme proposed by them cannot be adopted by the Board.

That this Board, while it regrets the further delay in carrying out the great sanitary work of the main drainage, is gratified to find by the report of the referees that they have adopted the principles of the plan of this Board as a basis for their scheme, notwithstanding the latitude of investigation given to them in their instructions by the First Commissioner, and that the differences upon this important question are now reduced to a few tangible points, viz.:—

Recommendations which this Board has no power to carry into effect.

Recommendations of works the expense of which it has been admitted by the First Commissioner that the Board cannot with justice be called upon to defray out of the metropolitan rates.

Differences of an engineering and sanitary character upon the following points:—

Open sewers, with diminished falls.

The western sewage carried on the Surrey side.

A large increase in the dimensions of sewers to provide mainly for an increased area and rainfall."

The amendment was seconded by Mr. Turner, and after some discussion the motion was lost by twenty votes to eight, and the amendment agreed to by a majority of eighteen votes to nine.

Mr. Alderman Cubitt then moved the following resolution:—

"That this Board considers that the open sewers proposed by the plan of the referees of the First Commissioner are altogether inadmissible, and is of opinion that it would not be justified in carrying out any scheme of which such open sewers formed a part, but that the other points of difference appear to be fair subjects for discussion and arrangement."

Mr. Bristow seconded the motion, which was agreed to unanimously.

Mr. Bristow then moved:—

"The appointment of a committee for the purpose of drawing up a written communication to be made to the First Commissioner, based upon the preceding resolutions, preparatory to a conference with him on the subject."

The motion having been seconded, was strongly opposed by Mr. Hawkes, Mr. Leslie, and Mr. H. L. Taylor, but was carried without a division.

The following gentlemen were named as the committee:—Mr. Bristow, Mr. Wright, Mr. Alderman Cubitt, Mr. Doulton, Mr. Turner, Mr. Offor, Mr. Dennis, Colonel Kennedy, and Mr. D'Ifanger.

### A HINT TOUCHING FOUNDATIONS AND THE REMOVAL OF GRAVEL.

IN land where the subsoil is clay, the vegetable mould holds the rain-water until it passes off by evaporation. In localities where this is the condition of the soil, vegetation will probably be luxuriant, and the kitchen-gardener will thrive; but a humidity will hang about the atmosphere, and it will be evident that the soil which is most conducive to vegetation is least favourable for habitation. On the contrary, in land where the subsoil is gravel, the mould parts with its moisture in two ways—upward by evaporation, and downward by absorption. In localities thus circumstanced vegetation is retarded, and the kitchen-gardener has small profits and slow returns; but the atmosphere is clear, and the quarter becomes deservedly popular for residence.

In urban districts, the above distinction, in a great measure, disappears, for the houses are close together: what ground they have in rear is mostly paved over: the streets are entirely so; and the drainage of the entire surface is provided for. In the suburbs, however, hardly any of these points hold good; and the question as to the nature of the subsoil is consequently ever recurring, especially in the newer neighbourhoods. Unless fashion interferes, the land which has gravel for its subsoil will have the preference.

Not only in a sanitary point of view is the gravel



land to be preferred to the clay land: structurally, it is, beyond comparison, the best. On clay, if you do not put in a tough artificial rock—that is, concrete—to build on, the drought of every hot summer will crack the upper portion of your clay subsoil, and for every crack you will have a rent in your walls; but on gravel, unless it be loose, the artificial rock is not desiderated: your foundation is unchangeable. Here, then, are economy and security along with health. In the country, suppose the subsoil is gravel, and the circumstances happen to be such that there can be no sewerage, building is not prevented, seeing that dry-built cesspools, or absorbing-wells, serve the purpose of drains; but where the subsoil is clay, and there are no means of drainage, since a cesspool would hold water like a tub, and run over when full, the land had better be left in the hands of the agriculturist.

Now, with respect to our suburbs, it happens that there is such a demand for gravel, for road and foot-path making, that whoever gets hold of a piece of building ground with gravel in it is tempted to turn every cube yard he possibly can into cash, to help him on with his building speculation; and I think I have known instances of unprincipled parties taking a lease of such ground ostensibly to build on, whose only object was to steal the gravel; and I believe I could also point out an estate, every builder of a house on which had to pay down 10*l.* for the gravel,—a famous contrivance for testing his good faith. It is this temptation to make more than enough of the gravel from the foundations which is the object of my writing these few remarks. I could point out the evil consequences of this practice in many suburban properties. The gravel is dug out beyond the proper depth for building on: a notice is put up—“*Rubbish may be shot here*,” and the refuse siftings, vegetable mould, &c. form a basis for the future houses to be built on—in the *villanous* style: I acknowledge the few inches of concrete; to which I would much prefer the plain solid gravel. In this manner is the superiority of the gravel soil subverted, in the structural point of view; and a more damp and more unsound house built over it than would be built on the clay, where the interposition of ample concrete footings would be inevitable.

The lessors of such ground should adopt means to prevent this abuse, which is one of the causes of so many “crack” houses. By so doing, they may guard against a few of the houses “falling in” before the leases,

JAMES WYSON.

\* \* The evil here pointed out is a great one, and cannot be too strongly reprobated. We have before our eyes at this moment a number of houses the walls of which are being constructed within two or three feet of deep excavations, now loosely filled with rubbish, from which sand for mortar has been removed. The district surveyors do what they can to prevent it, short of summoning the builders before a magistrate (often they are not aware of the fact), but they must now see what view magistrates will take of the wording of the Building Act in this respect. Can it be said of walls in such a position that the foundations “rest on the solid ground?”

#### BLACKBURN INFIRMARY PLANS.

On Monday the Infirmary Committee met at the Town-hall, for the purpose of again inspecting the plans sent in for competition, the number having been reduced to four. According to the *Preston Guardian*, after examination, they were reduced to three, viz.: “Solus,” 16 votes; “Le Plan Français,” 15 votes; “Templar Munditus,” 5 votes. The committee then adjourned until Saturday, this day, when we presume they will agree upon their report; and it is believed that the selecting committee will refer the choice between the two favourite designs to the general committee, or to scientific arbitrators.

#### CONFLICT OF OPINION BETWEEN SURVEYORS AS TO CHARGES.

TRIMEN P. LINDUS.

MR. DE LA MARE appeared for the defendant. This was an action in the Westminster County Court, before Mr. Francis Bayley, the judge, in which the plaintiff was an architect, and the defendant the proprietor of considerable property at Stratford, and the village of Upton, a mile beyond. The property, it appears, is in chancery, and in compliance with some order of that court, the defendant instructed Mr. Trimen to survey about forty small cottages, the greater number of which were at Stratford, for the purpose of determining whether they were worth any, and if so, what repairs. It appeared from the plaintiff's evidence, that he went down twice himself before he could determine the matter. Not being perfectly satisfied with his own opinion, he sent down a second surveyor, who also reported upon the state of the premises. He subsequently sent in his bill to the defendant amounting to 14*l.* 13*s.* 6*d.* fees and ex-

penses out of pocket. The defendant resisted the claim, and paid 5*l.* 5*s.* into court in satisfaction of the plaintiff's claim. For the defence several surveyors were called, and amongst them Mr. Lloyd, and they all stated that one day's time was sufficient for the survey of the property in question; and that five guineas was a fair and reasonable remuneration. His Honour, after hearing the evidence on both sides, found a verdict for the defendant, with costs. Verdict accordingly.

#### RAILWAY COMPANIES AND THE METROPOLITAN BUILDING ACT.

THE directors of the South-Eastern Railway Company appeared to a summons, before Mr. Secker, on Saturday last, to answer a complaint of Mr. C. R. Badger, the district-surveyor of Lewisham, for refusing to pay him the sum of 2*l.* 15*s.* 6*d.* fees to which he was entitled under the Metropolitan Building Act.

Mr. Rees, solicitor to the South-Eastern Railway Company, attended on behalf of the directors. From the evidence of Mr. Badger, it appeared that the fees were claimed in respect of three arches, forming part of the North Kent Railway, at Lewisham, having been so altered, by additions of other walls, with doorways, as to form livery stables, and as such let to a private individual for the purpose of trade.

Mr. Rees inquired under what section of the Act the fees were claimed?

Mr. Badger replied the 9th section, the words being in respect of work “in, to, or upon any building.”

Mr. Rees contended that the work in question being at a building which was used for the purposes of a railway, it came within the spirit of the meaning of the Act of Parliament, which prevented the interference of district surveyors with works belonging to railway companies.

Mr. Secker said, it was true the arches in question formed a portion of the railway, and were, therefore, constructed for the purpose of traffic; but he could not see what the converting them into buildings for stables had to do with the railway, excepting that the company received rent from the letting.

Mr. Rees observed that it was an important question, which would have to be decided by a superior court.

Mr. Secker remarked that the question had been under the consideration of his colleagues (Mr. Traill), and his opinion went with the district surveyor, that the stables were not necessary for the purposes of the railway, and that, therefore, he (Mr. Secker) must order the fees to be paid.

It was then agreed that notice of appeal should be given, and that a case should be prepared for the opinion of the Court of Queen's Bench. Mr. Secker is unquestionably right.

#### ROAD BETWEEN EAST-INDIA DOCK-ROAD AND BOW-ROAD.

At a meeting of the Metropolitan Board of Works, on the 9th, the following report from the Committee of Works and Improvements was brought up, and it was resolved by seventeen to three—“That the recommendations of the committee, with the plans and estimates for the formation of a new street to the Bow-road, be agreed to.”

“That the necessary steps be taken by the Board for forming a road between the East-India Dock-road and Bow-road, in the course shown by the line coloured red upon the plans produced, and for improving the bridge of the Eastern Counties Railway in the Grove-road, and the bridge over Sir George Duckett's Canal, in the Grove-road, provided the several proposals given up for the purposes of the proposed road and improvements the land comprised within the points A and B upon the plans, to a width of 70 feet at the least; that Mr. Cotton, one of the proprietors, do undertake to make the road for the land which he shall so give up, and also contribute a sum of 1,000*l.* towards the expense of making the bridge over the Lea-cut; and provided further, that the owners of the land, or the parish, undertake to make the road for the land of the roads between the points A and C on the plans, and to provide all the expenses required for their completion: the total estimated cost of the said road and works to this Board being 27,394*l.*”

#### NOTES UPON IRON.

On Thursday, at Birmingham, and on Wednesday, at Wolverhampton, matters were a gloomy aspect that will not, it is feared, be removed on this side of Christmas.

There was a exceedingly little done, and prices both of pig and malleable iron had a downward tendency. This is mainly attributable to the alarming state of things in America, accompanied with the rise in the rate of discount, and the Indian matters.

In America, although 60 *¢* *per* annum, upon second-class paper is the rate of discount, yet the disasters are not supposed to have reached their worst. There are no orders coming across now, and the only communications received are countermands. Firms on the other side of the Atlantic, which by the previous mail were spoken of as firm, were by the last referred to as highly unsafe. Then, whilst no failures in New York have affected South Staffordshire immediately, some firms in that district will, it is expected, suffer from the effects of the panic upon creditors in this country who have large transactions with the United States direct.

Most of the works continue in full-time operation, but this cannot last long unless the demands of buyers are yielded to, and rates accepted considerably lower than those now demanded.

Wednesday was factors' quarter-day at Wolverhampton. The accounts for the most part were met with promptitude.

#### THE HOUSE OF GEORGE STEPHENSON.

I OBSERVE a paragraph in your last week's paper expressing great regret that the house so interesting as the residence of George Stephenson and the birth-place of Robert Stephenson should be destroyed. I am glad to inform you that the schools which are about to be built, and which are intended as a memorial to George Stephenson, will not actually stand upon the site occupied by the house, but it is intended either to preserve it within the bounds of the playground, or, if removed, a *fac-simile* model of it will be made and placed in a suitable part of the building. This latter course will most probably be adopted,\* as the ravages of time are fast telling a tale upon it.

The schools, in which Mr. Robert Stephenson takes a very active interest, will consist of two large school-rooms for boys and girls, with class-rooms to each, accommodating in all upwards of 400 children. There will also be a residence for a master and mistress, together with a library and reading-room. The style of buildings will be Gothic, and built of brick with stone dressings. ARCHIBALD M. DUNN, Architect.

In my first design for the “Stephenson Schools” at Widdington quay, near Newcastle-on-Tyne, it is intended to preserve the house in which Robert Stephenson was born; and any other idea than this, I am sure, will not meet with the sanction of the Newcastle corporation.

WILLIAM A. KNOWLES, Architect.

#### Books Received.

VARIORUM.

A NEW edition of Mr. Timbs's “Popular Errors explained and illustrated: a Book for Old and Young” (Kent, Fleet-street), has just appeared. It is in great part rewritten, so as to be in the main a new work, and now forms one of the series of volumes of “Things not generally known.” Having already expressed our favourable opinion of the volume as previously issued, it is almost unnecessary to do more than intimate its reissue; but the book is almost a new one, and we must at least add that it cannot but enhance the author's repute for curious research and entertaining as well as instructive writing.—A new issue of “The Handbook to the Metropolitan and District Board of Works” has been published by Abbot, Barton, and Co. of Upper Wellington-street, Strand. In this revised edition, the compiler has added the levels of the principal thoroughfares in and around London from actual survey, which must be of advantage to architects, builders, and surveyors, as well as interesting and useful to general readers.

—A tract on the sale of Land has been published by Kerbey, 118, Whitechapel-road, the useful and desirable object of which may be gathered from the title, which is,—“Vendors and Purchasers: a short Epitome, giving reasons why the present cumbersome and expensive mode of transferring land and house property should undergo a modification; to which is added Votes and Vetoers, a glance at our county registration.” The author is Mr. W. R. Jackson.

#### Miscellanea.

FATAL ACCIDENT AT BRICKLAYERS' ARMS STATION.—Richard Membrey, a mason, was killed at the Bricklayers' Arms Station of the South-Eastern Railway last week. On Tuesday morning deceased was chipping a block of stone, when the sheer-legs suddenly fell, one of the poles smashing his face upon the stone, and fracturing his skull. The sheer-legs had been used to raise the stone work, and were secured to a guide-rope, which was fastened to a stone of great weight, moved by three men. One of the legs was lifted accidentally too far off the ground, which overpowered the men, and thus caused the accident. A coroner's jury returned a verdict of “Accidental death,” but expressed an opinion that any workman employed within reach of sheer-legs, when being moved, should be cautioned to retire to a safe distance.

THE NEW WESLEYAN CHAPEL IN THE HOLLOWAY-ROAD is now opened. Mr. C. Laws was the architect; Mr. Cowell, clerk of works; and Mr. Cleaver, builder. Messrs. Hart and Son furnished the gas (forty jets), cornice, gas standards (183 jets), communion standards, &c.; and Mr. J. Daymond was the architectural sculptor, who executed the carving of the cap of the columns, corbels, and the two entrance doorways: each cap and corbel has a different treatment of its foliage. The gas standards and the cornice were designed by Mr. J. Ash.

APPOINTMENT OF BOROUGH SURVEYOR FOR SOUTH SHIELDS.—Mr. John Ayris, of Westminster, has been appointed by the corporation of South Shields to act as their surveyor.

\* To this course we must continue to object. Admitting the interest attaching to the house, we trust the committee will not fail to preserve it.



ST. MARGARET'S, WESTMINSTER.—As the wet weather has commenced, would you be so obliging as to counsel the laying of a little more paving in St. Margaret's Churchyard. If money be scarce in that rich parish, a continued footway from the Abbey end to the front door of St. Margaret's Church would suffice at present; but in these days of improvement it is rather reflective, on the authorities to allow this great improvement to remain unfinished.—JOHNNY.

THE ALTERATIONS AT EDINBURGH CASTLE.—The operations of the military engineering authorities are, it seems, suspended in the meantime, and the plans have been shown to the City architect, Mr. Consins, and others interested; but the Government authorities have not promised that the public shall have an opportunity of seeing them before anything further is done. The Lord Mayor, who has seen them, states that they, at all events, show a manifest desire to do justice to the site, and it was stated to him that the Government authorities wished to make the alterations of a character to correspond with the buildings already erected.

THE COVENTRY SCHOOL OF ART.—The annual meeting of this school took place at St. Mary's Hall, which was crowded in every part: four-fifths of the audience or spectators, according to the local *Herald*, were ladies, whose influence is not to be despised. Lord Leigh presided. His lordship begins to doubt whether foreigners still excel in the forms and colours of their fabrics: he rejoiced to observe that great progress was now being made even in these particulars. The report congratulated the subscribers and friends of the school that the progress of the institution since last annual report had been steady and satisfactory. The number of students entered on the books during the past year, however, was only 371, against 381 in 1855-6, and 310 in 1854-5. The late exhibition of the works of students had been visited by upwards of 3,500 persons. It was now necessary to make an effort for the erection of an adequate building for the accommodation of the school, and a convenient site was being looked out, when a meeting would be convened, and a scheme for raising funds submitted. The finances of the school were now in a better position than they had been in since the Government grant for the payment of the masters was withdrawn. The balance in hand, however (131), was insufficient to meet current expenses, and increased subscriptions were pressed for.

SOUTH WALES INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—An important meeting of engineers and mineral proprietors, interested in the railways and works of South Wales, was held at Merthyr, on the 30th ult. to consider the desirability of forming an institute. All the principal iron works of South Wales were represented at this meeting, and the principal engineers of the district were present, or sent letters in favour of the proposed institute. Appropriate resolutions were passed after an interesting discussion, and a committee was appointed to draw up a code of laws for the government of the institute, naming local committees, &c. &c. The meeting was then adjourned to the 29th inst. Merthyr, often called the cradle of the iron trade of South Wales, and the place where Trevethick built and set to work the first locomotive engine ever made, is fixed upon as the home of the institute. Nearly a million tons of pig iron are annually manufactured in South Wales; and besides, the Welsh works import largely from other districts, and convert an immense quantity of pig into bar and rail iron, nearly one-third of all the wrought iron made in Britain being produced in South Wales.

THE BROTHURTON MEMORIAL.—In justification of myself, I must trouble you for a very small portion of your valuable space in answer to Mr. Chadwick's letter in your last. You will notice the more important queries are entirely omitted by him. My last letter to you was a plain and true statement of simple facts. When the design is engraved, every artist and architect can judge of its merits himself, but I have a clear and distinct recollection of reading the designer's own particulars, wherein he said, the spire rested on the heads of the angels, and not on columns, as Mr. C. says. As regards the mottoes, I never heard of them till the designs were exhibited; the advertisement in the *Builder* was so clear and perfect that I, with others, never thought of applying for further particulars. Respecting what Mr. C. says as to lists, &c. being sent to each competitor, it is entirely untrue, as regards at least one; and I will conclude all I have to say of this affair by assuring you, sir, that gum arabic in Manchester is manufactured from horses' hoofs, and, unlike Sir Benjamin West and his cat, camel-hair pencils are happily secured there from the back of the hog. He says, sir, my drawing, mounted on canvas, on a thick strainer, with a thickness of 1/2 inch paper and an ordinary mount, was attached to the wall with a "small tin tack." Is not this preposterous? By that one assertion may Mr. Chadwick be judged, for a difficulty of that sort could not be surmounted by the god VULCAN.

A CENTRAL "PLACE" IN LONDON, UNITING TRAFALGAR SQUARE WITH THE BOROUGH ACROSS THE WATER.—I have just returned from a rustic tour, in which I had not the opportunity of seeing the *Builder*, and have only just seen the number of Oct. 3, in which you so obligingly introduce my second letter on "A Central 'Place' in London, uniting Trafalgar-square with the Borough." I am extremely gratified to find that I hold a somewhat similar view with yourself on this subject. It was, if you will allow me to say so, probably long in both our minds before it appeared in print. As, however, in your prefatory remarks you allude to the number of the *Builder* of Dec. 13, 1856, I may also draw your attention to the September number of the *Art Journal* of that year, page 277, in which I first mentioned in print the general idea I entertained (at that time in relation to the National Gallery chiefly). I have not the honour to be an architect, and yet I venture to intrude my suggestions on your journal; but this non-professional position of mine may hold out a greater chance of value in the idea in question, inasmuch as a similar result in opinion has been arrived at from more than one point of view. Encouraged by the kind words you have said, I shall venture to send you a few more remarks on the above subject in a few days.—EESLON.

ASTON HALL AND PARK, AT BIRMINGHAM.—The owners of Aston Hall and the remainder of the park have made a new arrangement with the working men's committee appointed to secure its purchase. If the committee can pay a deposit of ten per cent. on the purchase-money at Christmas next, according to the local *Gazette*, the sale will be completed, and two years will be allowed for the payment of the remainder of the purchase-money. Between 16,000 and 17,000 shares have been applied for (Mr. C. H. Bracebridge taking 400, and other gentlemen large numbers), and the Aston Hall and Park Company is being enrolled. Messrs. Chance, Brothers, give 1000; Messrs. Lloyds, 1000; Mr. Charles Ratcliff, 500; and donations have been promised by others.

COUNTY AND DISTRICT SURVEYORS IN IRELAND.—The Select Committee of the House of Commons on this subject, report that the institution of county surveyors, under the Act 6th and 7th William IV. chap. 116, for the superintendence of county works, has been attended with great public advantage, both as regards the improvement of county roads and works, and as regards the economizing of the county funds. The mileage of roads under repair had increased from 13,191 miles in 1834 to 36,073 miles in 1854, while the cost of repair had increased only from 228,816*l.* to 312,297*l.*; and at the same time the percentage cost of superintendence was reduced materially in almost every county. An efficient class of county officers has been formed, taking charge of nearly every county work, and controlling an expenditure of nearly 500,000*l.* annually, and the committee think that the time has arrived for reconsidering the office, both as regards its duties and its remuneration, with the view of placing it on the most efficient footing for the public service. It is thought that the surveyor ought to be supplied in every case with adequate local assistants, an increase of salary being recommended in both instances.

SANITARY PROCEDURE IN CLERKENWELL.—The authorities in Islington, are still actively engaged in abating nuisances, and some important procedure has just taken place at the local Police-court, under the Nuisance Removal Act, several owners of houses in Popham-street, Islington, having been fined for allowing their houses to be crowded with more families than they could properly accommodate. The stench in some of the rooms from this cause alone is said to have been most offensive and prejudicial to health.

RENTS IN LIVERPOOL.—In describing amongst other important structures now in progress in Liverpool (of which we gave some particulars not long ago), Insurance Buildings, in course of construction, from the designs of Mr. Cockerell, the *Albion* says,—"Some notion of the value attached to this site will be obtained when we state that for the basement, beneath the offices, a rental of 300*l.* a year is required; that for a small office adjoining (in the basement), not more than eight yards by six yards, and approached and lighted solely from the area, a rental of 94*l.* a year has been obtained; that one large firm in the town (cotton-brokers) have taken the offices on the ground floor, at the north-east corner of the building, at a rental of 800*l.*; and that half that amount is to be paid by the local agent for the distribution of stamps, for a range of three rooms on the ground floor, with a frontage to High-street, taken on a long lease. At the north-east corner on the three-pair floor there will be a large, well-lighted room, suitable for general brokers' sales, to which purpose it will probably be devoted, as a great want of such accommodation is continually experienced. The contract, which amounted to 35,000*l.* was taken by Messrs. Haigh and Co."

THREE CARRIAGES IN A RUNNING TRAIN CONSUMED BY FIRE.—On the Great Western Railway, on the 9th inst. a carriage took fire while occupied by passengers, and from the utter want of that which has been so often and so urgently insisted on by the press, and early by ourselves amongst others, namely, some mode of communication between the passengers and the guards and drivers, the train ran on for nearly half an hour, in the midst of female screams and suffocating smoke as well as frantic efforts to attract attention by passengers in others of the carriages who happened to see and hear what was going on; and it was not till the train drew up at Kensal-green that the terrified ladies and others escaped from the burning carriages. They had managed so far to smother the burning wood by means of cloaks, but not a minute elapsed after they did escape ere the carriage first on fire was in a blaze, and those adjoining it were also very speedily destroyed. It is really fearful to think of the peril which the public are ever and anon incurring in consequence of the contemptuous and most culpable neglect of railway managers and directors to provide means of communication between passengers and guards, and between guards and drivers. There is no difficulty, whatever may be pretended. In America, carriages in a train communicate from end to end of the series: why should it not be so in England too? A guard might then really be a guard. As it is, he might almost as well be "a stucco image," for all that so helpless a mortal can do, even if he accidentally happen to become aware of any peril in which the passengers whom he "guards" may stand while his train is in transit. There are many practicable ways of effecting a communication between passengers and guards, and between guards and drivers, but a communication whereby to pass from carriage to carriage would probably be the best of all modes of accomplishing all that is required. It providentially happens in the present instance that cuts from the crackling, heated glass were the only bodily injuries suffered; but let a single fatal accident happen on any of our railways from want of the required communication, and the managing directors may look out for the personal consequences. Juries have already indicated what they feel inclined to do under such circumstances.

THE WORKING-CLASS CONCERTS AT ST. MARTIN'S HALL.—It is satisfactory to know that these refining and elevating amusements for the people have been highly successful so far as regards attendance, although scarcely what they should be, and what they undoubtedly will yet be, in a financial point of view. The annual report for 1856-7 states that "from the commencement to the close of the present season, the concerts have been attended by 50,000 persons; and no doubt this number would have been largely increased had it not been for the general distress which prevailed among the operative classes in London during the past winter. The average attendance at (each concert of) the second series has been upwards of 1,200; and on one or two occasions as many as 2,300 were admitted. \* \* \* The total amount of expense incurred in carrying on these concerts is between 1,800*l.* and 1,400*l.* of which the following are the three most important items, viz.—artists, 540*l.*; rent of hall, &c. 347*l.*; printing and advertising, 315*l.* The expenditure has exceeded the receipts by more than 200*l.* This appears to have been the case, also, with the 'People's Concerts' in the provincial towns, which, although they are now self-supporting, almost invariably experienced a similar difficulty at starting." Subscriptions are received by the treasurer, Mr. Nicholay, churchwarden of St. Marylebone, 82, Oxford-street; Mr. Anderton, Under-Sheriff of Middlesex, 20, New Bridge-street, Blackfriars; and others. The Prince Consort is a subscriber of 25*l.*

THE WELLINGTON MONUMENT.—Sir: Permit me to assure your correspondent, "D. H." that I am very far from being alone in the opinion, that a national monument to a great historical personage ought to be (and indeed, to be consistent, must be) itself historical in its character, and in some respect and degree "a record of the life" of the man thus commemorated. I do not propose to occupy your valuable space with any prolonged comments on "D. H.'s" sentiments on the matter of monumental art, but I cannot resist his objection to my recumbent effigy of the great Duke, that in life the Duke was not in the habit of assuming this attitude when in his uniform and when wearing his knightly mantle. I did not expect any such rehearsal of his own monument by my hero, and yet I cannot see that a recumbent effigy must in consequence be inconsistent in his memorial. Does "D. H." base his assumed approbation of the competition designs upon the theory that the Duke ordinarily wore the habiliments of a Roman emperor, or that in British uniform he was accustomed to form one of a group in which the "allegories," winged and wingless, in their uniforms, a certain lion, &c. occupied prominent positions? CHARLES BOUTELL.



**THE ARCHITECTS AT LLANDAFF CATHEDRAL.**—We have been favoured with copies of a correspondence as to the giving up, by the dean and chapter, of one of the architects heretofore engaged in the restoration, but not in time to make any analysis of it should it seem desirable.

**A DRY DOCK IN THE MAURITIUS.**—The 13th of July was signalized in the Mauritius by the opening of a vast dry dock. The dock was planned by Mr. T. Hounslow, and the design carried out by Messrs. Fry and Bloudeau. The dimensions are as follows:—viz. Length of keel, 250 feet; entrance, 48 feet; width inside, 68 feet. The basin may be lengthened to 300 feet, and larger if found desirable; but in the latter case the government would have to make a concession of land. The same week was signalized by the laying of the foundation stone of a new Protestant church at Pamplonue.

#### [ADVERTISEMENT.]

**NOTICE.**—DISPATCH ATLAS GRATIS. To prevent the possibility of disappointment consequent upon the enormous sale of the DISPATCH, those persons desirous of possessing the DISPATCH COLOURED ATLAS are informed, that should the newspaper be out of print with which any particular map has been presented, such map may always be obtained with the paper for the current or any future week. Either of the DISPATCH ATLAS MAPS will be forwarded gratis, with the paper, at the usual price 5d per copy unstamped, or 6d stamped. The Friday Evening Edition may be received in the most distant parts of the kingdom on Saturday morning.—Orders received by all News-agents, and at the Office, 139, Fleet-street. News-agents throughout the kingdom are requested to forward their names and addresses, when specimens of the special Double Map (coloured) of Asia will be forwarded. Portfolios are now ready, price 3s. 6d. 4s. and upwards.

#### [ADVERTISEMENT.]

National Mercantile Life Assurance Society,  
Foultry, Mansion-House,  
June 15, 1857.

The Six Iron Revolving Shutters supplied to this office by Messrs. CLARK and CO. have now been in use upwards of twelve years, and I have much pleasure in bearing testimony to their general excellence, their durability, security, ease in working, and their nonliability to get out of order.

Beyond an occasional oiling nothing whatever has been done to them since they were first fitted. I can therefore highly recommend them. CHARLES MARSH.  
Messrs. Clark and Co.  
15, Glat-street, Lincoln's-inn-fields.

#### TENDERS

For Pontyml School, near Pontypool, Monmouthshire. Mr. R. G. Thomas, architect:—	
G. A. Stone, Cardiff	£2,445 0 0
D. Davies, Pontypool	2,343 0 0
W. Williams, Newport	2,180 0 0
H. P. Bolt, Newport	2,025 0 0
W. Harry, Newport	1,940 0 0
G. Jones, Newport	1,983 0 0
J. P. Williams, Pontypool (too late)	2,021 0 0

For two houses for Mr. Lucey, Grange-road, Hornsey. Mr. Geo. Legg, architect, King William-street, City. Quantities not supplied:—

B. Wells	£1,730 0 0
McLennan and Bird (accepted)	1,570 0 0

#### TO CORRESPONDENTS.

T. H. W. H.—Non-Professional.—Sarris.—W. R. B. M.—B.—E. K. J.—Capt. L.—W. G. S.—T. H. W. L.—T. P. T. A.—L.—B. M. J.—A.—E. J. P. Reader of the Builder.—B. C. (we cannot depart from our rule in this respect). T. T. (too). M. F. (ditto). J. E.—J. R. C.—O. B.—C. G. Errata.—For "centre of the transept," in notice of Langfeld Church, p. 559, read "centre of Chancel."—In report of Mr. Kerr's observations, p. 375, for "they would remember how the Greek architects landed on all manner of eccentricities," read "Gothic architects." &c.

#### ADVERTISEMENTS.

**THE LEAK IMPROVEMENT ACT 1855.**  
To SURVEYORS. Notice is hereby given that the Commissioners under the Leak Improvement Act require a TOWN SURVEYOR. Candidates for Appointment may forward testimonials of qualification and competency addressed to Mr. HAMMOND, Clerk to the Commissioners, Leek, before the 20th OCTOBER instant. Candidates for Appointment must understand the management on the most economical principles of Waterworks, Drainage, Sewerage, Paving, and Surface Cleansing. He is competent to conduct surveys, prepare plans, drawings, and estimates of works of every description; and able to superintend the execution thereof. Candidates are not required to attend personally before the Commissioners, unless specially requested, but to state the salary required. By order of the Commissioners,  
HACKER and BLOORE, Law Clerks.  
Leek, 1st October, 1857.

**WANTED, an ENGINEER,** thoroughly competent to manage a NEW FOUR-POWER POWER ENGINE.—Apply to W. J. HUNT and CO. North London Iron Manufacturing, 31, New Gilt-warehouse-street, Hoxton.

**WANTED, in a Builder's Establishment** near London, a thoroughly practical JOINER, to work and superintend the use of a teaming machine, trying machine, &c. None need apply who are not conversant with the above machines.—Apply on Wednesday evening, between six and eight o'clock, to A. B. at Mr. Stevens's Office, 35, Bridge-street, Blackfriars.

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**WANTED, immediately, a good WORKMAN,** who thoroughly and reliably the above business. References required as to ability and character. Application to be made to O. P. Post-office, Newcastle, Yorkshire.

**WANTED, a FEW good JOINERS.**—Apply to T. REYNOLDS, Builder, Bedford; or at Milton Ernest Hall, near Bedford.

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**WANTED, by a practical Carpenter, a SITUATION, as CLERK of WORKS, GENERAL SHIP or FOREMAN of WORKS.** Can make working and other drawings, take quantities, and superintend general building. Would contract for good stone-work, furnishing materials, or for labour only. Reference and testimonials highly satisfactory. Address, C. P. Post-office, Ball's-pond, N.

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**TWO ARCHITECTS will be happy to PREPARE finished, working, or detail DRAWINGS, colour or rich perspective, of buildings, from sketches and notes; also a calculation, quantities, or to measure up extra.—Address, ZETA, 29, Great James-street, Bedford-row.**

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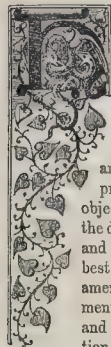
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# The Builder.

VOL. XV.—No. 768.



**H**EALTH-SCIENCE, if we may use a new compound, has been very considerably advanced by the successful establishment of the National Association for the Promotion of Social Science, which held its first meeting in Birmingham on the 12th inst. and four following days, under the presidency of Lord Brougham. Its object, as may be inferred, is to aid the development of the social sciences, and to guide the public mind to the best practical means of promoting the amendment of the law, the advancement of education, the prevention and repression of crime, the reformation of criminals, the establishment of due sanitary regulations, and the recognition of sound principles in all questions of social economy. The association is accordingly divided for the present into five departments, the fourth of which, that of "Public Health," will consider the various questions relating thereto, and to the prevention of disease: it will collect statistical evidence of the relative healthiness of different localities, of different industrial occupations, and generally of the influence of exterior circumstances in the production of health or disease: "it will discuss improvements in house-construction (more especially as to the dwellings of the labouring classes), in drainage, warming, ventilation; public baths and washhouses; adulteration of food and its effects; the functions of government in relation to public health, the legislative and administrative machinery expedient for its preservation; sanitary police and quarantine; poverty in relation to disease; and the effect of unhealthiness on the prosperity of places and nations." We say it *will* do this; but we ought also to say it has commenced to do it, and the proceedings at Birmingham show that the importance of this department of the association is fully understood.

Lord Stanley, in his inaugural address as president of the Department, defining Sanitary Science, apprehended that it meant that science which dealt with the preservation of health and the prevention of disease in reference to the entire community, or to classes within that community, as contradistinguished from medical science, which had for its object the restoration of health when lost, and dealt with the case of each individual separately. The knowledge which warded off preventable disease from the naturally healthy was one which might be, and ought to be, possessed by every educated person. This knowledge ought to be diffused, not merely because, in matters which concerned the public in its collective capacity, such as the cleansing of rivers, the drainage of towns, the exclusion from populous districts of noxious employments, and the like, those by whom sanitary reforms were imperfectly appreciated would be found hostile to them on the ground of expense; but because a large proportion of those remedial sanitary measures which it was in the power of society to apply to physical ills were of such a nature that no police regulation, no Board of Health, no legislative enactments, could successfully interfere to enforce them without the co-operation of the parties concerned,—such as the cleansing and ventilation of private dwellings. Henceforth the fact must be known that we ourselves were the cause of

a large proportion of those physical sufferings which most of us had been accustomed to look upon as a necessary though lamentable condition of humanity.

The speaker said he had faith in the good sense and good feeling of the public as to the future: it is quite certain, nevertheless, that the said public must be spoken to on the subject many times before it will allow its life to be lengthened to the extent practicable, under higher permission—to that extension in the aggregate, as Dr. Southwood Smith said in the course of a memoir "On the Prolongation of Life," during the eighteenth century, to which it is not possible as yet to assign a definite limit.

In that paper it was shown by the record of centuries, that in the year 1690 the expectation of life of a man aged thirty would have been as 26-565, while in 1790 it would have been 33-775: while the actual addition of the excess of years which the persons engaged in the latter century had over the former proved that in 1790 the expectation of life was increased by fully one-fourth; that is to say, that if in 1690 a person aged thirty could expect to live thirty years, in 1790 a person of the same age could reasonably expect to live thirty-seven years. An increase in the duration of life is a proof of increased comforts, or increased enjoyment of certain elements upon which human life is dependent, such as air, light, food, warmth, and shelter. At that period special attention began to be paid to the well-ordering, cleaning, and paving of towns. The narrow streets were widened, slate-roofs substituted for thatch, bricks for timber, and the manufacture of glass so much increased that glass windows, even in the poorer towns, became common. Agriculture made a surprising advance, multiplying a hundred-fold the production of fresh vegetable food, and increasing in a still more remarkable degree the amount of fresh animal food by the extension of the comparatively new art of collecting and storing fodder for cattle in winter. The increase of manufactures gave improved and cheap clothing to the people, not only conducive to warmth and health, but almost equally so to cleanliness, the texture compelling frequent washing. Accordingly disease assumed a milder form, and epidemics in particular became much less formidable.

Mr. Jerriek, in illustration of the facts given in that paper, said that the average duration of life in London at present was twenty-seven years, whereas in the last century it was only twenty-two.

Papers on the influence of habitations, on the density of population, and localization of dwellings, on the ventilation of buildings, and many other cognate subjects, were read. Mr. Tom Taylor and Mr. Arthur Helps, both remarkable men, took part in the proceedings, as did also Mr. John Simon, Dr. Farr, Mr. Stanley, Mr. M. D. Hill, Sir Benjamin Brodie, and others, who have long laboured in the cause. Mr. Taylor's paper was on "Central and Local Action," and Lord Stanley summed up its arguments, when he said at the close of the discussion upon it, the general feeling seems to be that indicated in Mr. Taylor's paper—namely, that so far as any general rule can be laid down, the local body should have the power of action, and the general body that of instruction and supervision—that is to say, that the position the central government should assume in regard to all local authorities is, that it should say, So long as you do your work well you shall be left to do it in your own way; we will not interfere with you; but if during a long series of years you decline or are unable to do it, it will become our business to see that the duties of the office are properly discharged.

Not to dwell longer on the proceedings of

the department, we repeat our congratulations on the recognition of the importance of sanitary science by the new association. Quietly and continuously labouring as we have done for years to establish this, with less sympathy than might have been expected,—our efforts, indeed, often received with abuse instead of favour,—it becomes almost a matter of personal triumph to find opposition disappearing, and sound principles generally accepted. The sanitary investigations, of which reports have been published from time to time in this Journal during several years, have been made at some personal risk,—we might almost venture to say, of life. Endeavours have been made as well during the night as the day to learn the real condition and results of the neglected and poisonous homes with which certain districts abound, and the facts thus gathered have been spread far and wide. In addition, information has been gained from clergymen of all denominations, and from the City missionaries; from medical men performing their useful office, not only for the rich but amongst the poor; from the police, and many others; and we have reason to hope that the information disseminated has not been without its fruits.

An epidemic again gives reason, we fear, to quicken the precautionary movement. The investigation of the first outbreak of it, at West Ham, Stratford, by the Association of the Medical Officers of Health, shows, as in previous cases, a removable cause. The row of houses where it broke out was found to consist of buildings in tolerable repair, and not inhabited by the very poorest class of persons; but, attached to the houses were several separate cesspools, including a large one into which some of the other houses drained: at a distance of 70 feet from the cesspools is a well which supplied water for the inhabitants to drink, and for other purposes; and, the soil being gravel, it is supposed that the poisonous matters from the cesspools have drained into the well. The place is situated near a marsh, which is said to be greatly impregnated with sewage matter; and not far off is an open stream which carries off the drainage of a considerable district. Here we have all the evil conditions likely to produce both cholera and fever; and the sad result at the present moment has been the sudden seizure of fifteen persons, and the rapid death of seven or eight of that number.

Men of experience have watched the progress of the cholera for the last two or three months, and noted its usual course, and it is to be feared that we can scarcely escape a visitation in this country. It behoves all, in the short interval which may elapse before the scourge is upon us, to take those steps which are known to be efficacious.

The inspectors of nuisances in large parishes and towns should have assistance: careful examinations should be made, and all offensive matters carried away. Wells of water and the pumps throughout the metropolis should be viewed with suspicion, for the water of few, if any of them, can be wholesome even in healthy times. Inhabitants of houses which have the advantage of proper drainage, should see that the drains are in good order, and that the traps in sinks and closets are clear, and in working condition. They should permit no bad smell to exist.

When the drainage is not complete, no faith must be placed in flushing the drains with water: often, indeed, more harm than good is done by it.

Complaints are often made, where drains have been formed, of the carelessness of tenants who allow improper matter to choke the drains. Care should be taken to avoid this: a choked drain in the time of an epidemic is very dangerous. It would be well if the inhabitants of large towns would follow the example of the



Jews in their sanitary arrangements; cleanse constantly the walls and ceilings of their rooms, and be attentive to the nature of their food and drink.

In Bridgewater and some other towns, a house-to-house visitation, to ascertain the state of the premises and condition of the people, has been most wisely determined on. In some places this would not be an easy task. At a meeting held in Newcastle the other day, with reference to building a new church in Shieldfield, the incumbent, Mr. Irvine, said that when he first came to the parish, he proposed to himself the formation of a list of all his parishioners, and the establishment of a routine visitation. He put his note-book in his pocket, and started out. But in one single house, near the church, he found *twelve* families; and, giving a quarter of an hour to each, he was altogether three hours in this one house! And this house, let us add, has thousands of parallels.

On another page will be found a continuance of our notes on the condition of the town just mentioned, and other places in the north. The statements in our first paper (p. 577), have awakened attention, and will, we trust, lead to advantage. The editor of the *York Herald* has been moved to great anger by the few observations we were led to make therein on York, and in a lengthy leader applies to them the epithets "untrue," "mischievous," "unjustifiable," "utterly false," "without the shadow of foundation," "unscrupulous tirade," "simply absurd," "malicious" and "base slanders!"

Making all allowance for the feeling which prompts the writer to place his city in as favourable a light as possible, we must express our regret that the editor of "so respectable a journal" (as he says of the *Builder*) should have stooped to a course which is seldom the sign of a good cause. Nothing is stated in our columns "maliciously," or without inquiry. We are forced at times, against our will, to say what may be deemed unkind by individuals, and, impressed by the mighty importance of the subject, may speak with earnestness; but we venture to believe that our statements have never been couched in offensive language, or found to be unjustifiable. As regards York, it is quite obvious and certain that it has not advanced in the same proportion as other large towns, which some years ago were greatly inferior to it. The particular object the writer had in view was, without the slightest ill feeling, to suggest the inquiry whether those towns, districts, and even plots of land, which are under the management of Cathedral Chapters, are dealt with in the way most likely to be advantageous to the community. There are certainly many instances before us to the contrary.

The ancient *prestige* of York, its important position, the circumstance of its being the capital of the largest county in the kingdom, its place in the great highway through the length of the county, together with other advantages, should, under other arrangements, have insured for this ancient city a very large amount of population and business. The increase in the former, vauntingly shown by the editor of the *York Herald*, is comparatively small; and observation and inquiry compel us to reiterate what we have said as to the condition of the poorer classes in that city.

Along the northern coast busy centres of industry are being formed, and large towns are growing up; and it is after viewing such scenes of activity, and making visits to the huge works going on in many parts of the land, that we have been led to form the opinion as to York, which has excited the anger of the *Herald*. As to the sanitary condition of York, we gave the authorities full credit for what had been done, but we would urge that measures should be taken to compel the owners of houses to open communication with the sewers when formed. We leave the settlement of the question at issue between ourselves and the *Herald* to those who have the means of comparison at hand, and whose vision is not obscured by local attachment or interested motives.

The *Gateshead Observer* has received our observations on that town in a very different spirit. The editor says,—"One of our most

able, zealous, and persevering fellow-labourers in the cause of sanitary reform, the *Builder*, has, we are glad to see, been visiting the North of England, and did not overlook the claims of Newcastle and Gateshead upon his attention. His report appears on another page; and we might hope that it would prove of service to us, had we not so firm a faith in our apathy—our contentedness with things as they are—to some extent, indeed (as we said the other day, when speaking of the smoke nuisance), our love of them. Here is the monster-difficulty—our self-satisfaction. We cannot "see ourselves as others see us"—as (for example) the *Builder* sees us. And we should not be surprised were we to receive, for our next number, a shoal of letters wondering at his want of admiration for Pipewellgate! Hillgate, its worthy compeer, was blown and burnt to pieces three years ago; and there the ruins lie to this day. We have neither the wit nor the energy to rebuild the one nor to get rid of the other. Our poverty, we know, has been pleaded as our excuse; but if we cast our eyes across the river, where the people have an estate—and a Ratepayers' Association to boot—we see the same state of things existing. It is truly lamentable; and the worst feature of it is, we are so willing that it should be so." "Everything is done amongst us by dribbles. Improve we do. Gateshead, we rejoice to know, has gone on, extending and improving, from year to year. Its progress, however, has not been all improvement. Much of it has been quite the contrary. Streets have come into existence, within the last twenty years, setting the laws of health at defiance; and even now, when unsanitary plans are rebuked or rejected, they find apologists in high places. Remember! it was neither in Hillgate nor in Pipewellgate, nor in any old locality, that cholera broke out in 1853!"

There is no fear for Gateshead with so excellent a monitor.

#### THE CLOSE OF THE EXHIBITION OF "ART-TREASURES," MANCHESTER.

OF the thousands of strangers—men of cultivated taste—who have crowded to Manchester during the last few months, we trust there are some of our readers who have given thought to the "mission" which the manufacturing districts may be about to enter on. Art and manufacture should be always hand-in-hand; the perfection of mechanism and productiveness should be married to the beautiful; the beautiful should be served, and the objects in which it exists, should be multiplied, by the resources of the mechanism. So, however, it has not been; and the artist has been known to regret the existence of what should be vehicles and media for design, and should offer to him recurring opportunities for the dissemination of his art.

Manchester, the capital of a district which is perhaps the most important in the industry and commerce of the country, has not yet given to the world much of beauty along with its manufactures. In this it is not singular: its woven and printed fabrics have not made worse manifestation of art in their day, than have the manufactures of Birmingham and Sheffield,—towns where considerable improvement lately may have taken place. So long as there is the market for the goods of a particular character, it is hardly to be wondered at that the supply should go on. The demand for Manchester goods proceeds to a centre from all parts of the world,—from climates the most diverse, and from nations dissimilar in their manners and predilections.

Many bad designs applied to textile manufactures therefore have come out of the Lancashire district; but we are not aware that the home consumption is on a par for the extravagance in forms, and want of harmony in the use of colour, with the demand from places abroad,—in Europe merely, or in all quarters of the globe. And other districts are equally at fault, if fault there be, in the manner of supplying markets, such as those of South America.

Almost the worst specimens of art in carpet-manufacture, that we have seen, were some that were produced specially for Germany. What Manchester has been slow to learn has been,

that there exists a market and a money value for art, as well as one for excellence and cheapness of manufacture,—that mind can work on the meanest material, and change it to a costly gem, or an "art-treasure." Artists, or manufacturers, we all have, for the interests of each of our objects and pursuits, to effect a better union than has lately been maintained between us.

Not that there is wanting a value in art, apart from the combination with manufacture. To the perception of this, indeed, the opening of the Exhibition, which came to a successful termination on Saturday last, may be due. No small number of the works in the collection, were contributed by people connected with the town, or the trade of the district; and the development of our own art in the buildings of Manchester, has been the subject of frequent comment in these pages. The amount of building which appears generally, to be going forward; the prominence of the structures themselves, from their mass; the use of good materials, and the positive desire for decoration—whether originating from love of art, or induced by the architects, or arising from other causes,—are so many conditions which are favourable to the architecture of Manchester. Favourable therefore, likewise, at this juncture, is the position of the district for influencing, in a beneficial and powerful manner, the circumstances in the future of those arts, industrial and ornamental, which are based on the principles of combined beauty and use that belong to the art of architecture, and which have a claim for attention now, inasmuch as they have not utilized the particular resources of our day. Such resources are those which we referred to at the outset, and the materials of all kinds in example and precept, which were never so abundantly poured forth for general use as they are at present. Much will be expected from Manchester: and, from the position which the city is taking up, the Exhibition of 1857 may inaugurate an era—not less important than that which has been dated from 1851.

Looking at some of the more attractive of the works in the branch of art which more especially concerned us, the contrast of effect between those applying the good and the bad principles was very considerable. This could be observed in the extraordinary collection of plate exhibited by the Earl of Stamford and Warrington, where the decadence from the seventeenth or eighteenth century work of inferior handicraftsmanship—but generally correct design—to the naturalistic style which has prevailed in the present day, was exemplified: the art in the latter case, bore no proportion to the outlay. Some pieces of presentation plate also, recently executed, were, however, still more remarkable for their deficiency as contrasted with the general collection of older works. Branches of plants, and petals of flowers; the stem and base wanting in every really structural feature, and in properly formed details of ornament; and figures thrown around, or crowded, rather than grouped,—such were the characteristics of many of the articles of British production, which certainly did not speak favourably for native art, as exemplified in the silversmiths' work of the day. That art could, at one time, be put forth in the precious metals, as in iron and brass-work, was abundantly shown by the exhibition of a large number of articles, many of which have been seen in London, at the Society of Arts, and in different collections. To show, however, that art need not be held to have gone from the workers in gold and silver, we were reminded of what it might be, by the fine series of productions by Vechte, and the Prince of Wales's shield. These are indeed, remarkable in their regard for the elements of the beautiful which are served by attention to outline, and architectural and structural principle, and in the power and originality of their details.

As a grand field of study in ornamental art of every kind, the exhibition at Manchester has offered opportunities which certainly have not been available at any other time. The Indian collection was large and varied; and was particularly interesting, on account of numerous drawings and photographs of buildings. The exquisite effect which is attainable by attention



to the principles of ornament observed by Mahometans was strikingly shown—especially in one rug, placed near to the door from the transept.

To have attempted in our pages, any review of the large collection of articles in glass, enamel, porcelain, and ornamental china and majolica ware; of sculpture in bronze, marble and terra cotta; of the medallions and glyptic; the exquisite carvings in ivory; the armour and arms from the Meyrick and other collections; the Early British, Celtic, and Anglo-Saxon antiquities; the furniture; the specimens of book-binding; the lace, and sacerdotal vestments, and the other numerous articles in the branch of ornamental art alone, would have occupied considerable space, and would have been of little service, without engravings,—if it would not have interfered with our attention to subjects more manageable in the pages of a journal, and which were more immediately interesting to our readers. Like others—induced to visit Manchester, whether for pleasure or information—we lament the necessity entailed on those whose home is London, of a hasty inspection of such a collection. Were we, however, to judge from the efforts made by those who have had the best opportunities, to get their examination completed by the closing day, we should doubt the possibility of deriving the advantage which is contemplated without longer time than here there has been on quiet days, with good light—for the inspection. Hurried visits, such as are the best that can be paid—even by those who take deep interest in art—to collections of this character, are in some degree, productive of effects in the reverse direction to that which appears to be expected. It is not now the first time that we have hinted the hypothesis, that, without rest, the vision and mental perception undergo a process of deterioration by every fresh object presented to them, analogous to the effect which is produced in the case of mere colour. If so, it is something more than the quantity of the works in a gallery, that will operate against the chance of appreciating them individually. The writer of an able article in one of the journals, sets down the number of pictures that might have been seen in a day, as about fifty out of the few thousands which there were in the building at Manchester. As regards many of the schools of art, it might be more safe to speak of *five* as the number of works that could be studied and fairly appreciated. For Londoners, the chance of seeing such a collection, therefore, has been very slight.

The Soulages collection was exhibited at Marlborough House, and we hope may yet become the property of the nation; and the Bernal collection and other works forming the Government contribution, and many of the works by modern artists, have been or may be seen under ordinary circumstances in London. Besides these, however, were 1,079 pictures, forming the gallery of ancient masters; and forty-four, the Marquis of Hertford's contribution; the 969 water-colour drawings, and fifty or sixty frames of miniatures; drawings by the old masters; engravings, a large number, including several rare and interesting works of Albrecht Dürer; the photographs; the architectural drawings (a poor collection), and a series of nearly 400 portraits of individuals celebrated in English history. What manifested itself to us as worthy to be borne in mind, was the value of the chronological arrangement in hanging pictures as contrasted with other arrangements suggested for a national gallery. The method affords the advantages, not only of exhibiting the development of the schools and the changes in art, but serves to elucidate general history, and also the biography of individual painters. In the gallery of ancient masters at the Manchester Exhibition, the early schools were fairly represented; the collection of Vandeykes was extensive and interesting; and by Velasquez and many artists with whose productions there has scarcely been an opportunity for the public to become acquainted, the works were of the first order. The chronological arrangement was perhaps most interesting in the collection of water-colours, beginning with the earliest attempts. The works of Girtin and Turner of

early date, have, in many respects, hardly been surpassed.

Is there no hope of the advantage which there would be from the exhibition of such well-arranged collections in London? It was useless to expect that the Exhibition could be transported, as some have proposed, bodily; and we have intimated a doubt whether the step could be desirable. By sections, however, we should trust that the object may be attained.

The liberality of the owners of the works of art demands the highest praise. The pictures and drawings have been exposed to considerable risk—for, the rain gained frequent admission in many parts of the building. It must, we think, be now apparent that iron buildings, as at present constructed, are ill adapted for the reception of works of art of a valuable character, for however short a period. The lighting in this case has appeared to us insufficient in quantity; and in the smaller galleries, the skylights in the middle of the roof allowed the works on the upper part of the walls, to remain in darkness during much of the afternoon recently. We have been asked to draw attention to the offer of the building for sale. There are, of course, many purposes for which it might be well fitted. A proposition is mooted for an industrial exhibition; but residents in the vicinity of the present building who are opposed to the scheme, it is thought, will defeat the project.

On the last shilling day, 28,984 persons were admitted; and on Saturday, the closing day, there were 17,988 persons. We have much reason to believe that although the statements as to want of interest amongst the operative classes have some foundation, the collections have been well examined by the educated people of Manchester, or so far as the time would permit. It was impossible to visit the building without feeling that the works were the subject of even more serious study than would have been allotted to them in London; and we shall look for the results, both on art as practised in Manchester, and in a wider field,—one of national importance.

#### SANITARY CONDITION IN THE NORTH.

SINCE the last notes on Newcastle-upon-Tyne were written, we have caused a more careful inspection of the place to be made, and feel it a duty to give some further particulars to our readers, for we cannot quietly witness the carelessness of human life which is shown in this great and important town.

The public buildings in Newcastle are handsome; the new streets and markets erected under the direction of Mr. Grainger are good; the charitable and other institutions are admirable; and yet there is behind this fair curtain a neglected, unwholesome, and dangerous district, which, when witnessed, takes away from the pleasure which would otherwise be felt in viewing the streets and houses of comparatively recent date. Look, for example, at some houses in the Back-row, not far distant from the ancient castle. A large portion of the north side of this street and some other houses in this neighbourhood have been fortunately removed. The dwellings in the Back-row are for the most part substantially built, and in tolerable repair. Passengers this way may constantly see refuse thrown without ceremony on to the pavement in front of the houses, where it is allowed, until the periodical visits of the scavengers, to take its course. On inquiring at several of these houses it was found that they were *entirely without water supply*. In a house occupied by large numbers of men, women, and children, each person is obliged to carry the water he may require from a pump (conduit) at a considerable distance. This is bad enough; but beyond this, the street is totally destitute of a drain; it has not even surface drainage, except by the open gutter just mentioned; and in the dwellings looked at, there were no closets at all. It must be evident that such arrangements must cause constant outrages against common decency, not to mention the serious effects such neglect must have on the health of families. At the back of some of these houses was a very small, uncovered space, surrounded by tall buildings. The poor creatures complained bitterly of the occupants of other houses throwing off noxious matter into this place; and well they may, for never was there a scene more filthy. These dwellings, without water and drainage, may be considered a sample of several hundreds, which afford harbour to both cholera and fever. Some of the authorities of the town say the people are dirty in their habits, but how is it possible for those unfortunately placed in such a position to be otherwise?

Since the last outbreak of cholera, as it seems to us, the work of drainage has been carried largely forward, and it is greatly to be doubted if a complete and effectual system has been adopted. In some of the houses in Eldon-street, which are large, and occupied by a respectable class of persons, they are in constant trouble with the drain. It has not sufficient fall, and is frequently stopped. Similar complaints are made in other quarters.

Even in streets which have been recently improved, the landlords of the property in poor neighbourhoods refuse to communicate with the adjoining sewer. This is the old story; but really it is time that measures should be taken to prevent the loss of health and life which arises from this evil; and if those who have charge of the dwellings of both the industrious and other classes of the poor in large towns will not perform an evident duty, some further powers will be required from the Legislature, which should declare that no dwellings in our large towns shall be considered fit for human habitation, either in tenements or otherwise, which are not provided with water, proper drainage, and closet accommodation.

The ballast-hills, and the large eastern portion of Newcastle, are in a shocking state; so is Sandgate, Silver-street,—in fact, nearly all the ancient parts; and, as we have already hinted, the more modern localities are in an equally dangerous condition.

Tripe-dressing, glue-making, tanning processes, and other unwholesome works are carried on with impunity. The cows, after leaving the town moor, are often kept in very improper places. Indeed, this large population is little less prepared for the reception of the cholera than it was four or five years ago.

It will stirle many of our readers to learn that the commissioners appointed by the Government to inquire into the sanitary condition of Newcastle in 1843-4, discovered that out of 9,453 houses which formed the whole borough, only 1,421 had water-closets: the remaining 8,032, or five-sixths of the population, had no other provision than certain public conveniences which are placed in different parts of the town.

In the district of Sandgate, out of a population of say 4,000 persons, it is stated that not more than 100 had right of access to any private convenience,—ninetieths of that resident population being unprovided for in this important particular. The consequence of such a state of things is evident: the broken pavement absorbed the most poisonous matters from time to time it was necessary to raise the doorsteps of the houses, in consequence of the rise of the footways by the accumulation of filth.\* The report just alluded to states that out of the 9,453 houses, only 5,461 were drained to any extent. We will, however, take the figures exactly from the report of the town and road surveyors, published in October, 1855:—

*"Houses in the ancient Borough of Newcastle-upon-Tyne.*—Number of houses, 6,680; houses drained, 3,976; houses not drained, 2,704.

*Houses in the Parliamentary Borough.*—Number of houses, 2,761; houses drained, 2,108; houses not drained, 1,653.

Total number of houses in 1855, 10,441; total number of houses drained, 6,084; total number of houses undrained, 4,357."

It will be seen that the number of undrained houses in 1855 is greater than that mentioned in the commissioners' report, which gives 3,992 as the number of undrained houses.

It is a circumstance which should be recorded, that when Mr. Grainger commenced his new buildings, he also provided all the houses with water supply and closet accommodation. Mr. Grainger states in evidence before the commissioners that he erected 1,062 closets. The commissioners say that they found only 1,421 closets in the town at the time of their visit: if we deduct the number erected by Mr. Grainger it will appear that before his day there were only 359 private closets in a population of from 70,000 to 80,000.

In the report of the town surveyor for 1855 and 1856, we find the number of undrained houses stated to be 3,996. It is a most remarkable circumstance, that while the town surveyor acknowledges that there are close upon 4,000 out of about 10,000 (approaching towards half) of the houses in the Borough undrained, he should state as follows:—"It will be evident, I think, that notwithstanding the erroneous impression, made upon the minds of many persons by the late melancholy visitation of cholera, of that event having arisen from deficient drainage, that Newcastle will compare in this respect advantageously with almost any town in the kingdom." It appears that in August 1854, there were in the town 30,494 lineal yards of sewers, which at an average cost of

\* When the cholera was raging, so bad was the nature of the pavement and parts below, that the medical officers found it necessary to spread thick layers of fresh soil from the adjacent country—and spread it thickly—over the surface, and this had some effect in stopping the pestilence.



35s. a yard, amounts to 53,364*l.* 10s. How does it happen that with this length of sewers but little more than half the houses in the town are drained?

It may be worth while to state, that during seven years, viz. from 1849 to 1856, 14,130*l.* 16s. 7*d.* have been expended on the improvement of the sewers: this is at about the rate of 2,000*l.* per annum. The rate which has been levied has evidently been inadequate for the required purpose, for the surveyor states that a debt of over 3,000*l.* has been incurred, and that to the great regret of the committee, about the middle of the last year (1855), they "felt themselves under the necessity of discontinuing operations in constructing a very important main sewer, extending from the river in the direction of the Tuthill-stairs, Westgate-postero, Rosemary-lane, &c. &c. and lanes adjoining, a great portion of which, although the calls for its execution are clamorous, must of course for a time be deferred. This is the case with other works of considerable importance in the townships of Elswick, Westgate, and Byker, the execution of which is urgently required by the inhabitants."

We will also quote the following from the surveyor's report:—"Owing to the want of a sufficient outlet for the water discharged from the district of Ord-street, Elswick-terrace, &c. it is quite impossible to keep the macadamized road, leading from Ord-street to the river at Elswick-quay, in proper repair. The old sewer from the Township-road at Elswick-terrace to that point is frequently broken and forced by the pressure of the water, and the road metal carried into the drain and lost. A similar work of equal consequence, is required at Tyneside-terrace: the sewer outlet to the large districts, including Rye-hill, and adjacent streets, has for some years been inadequate to receive and conduct the drainage discharged into it. The result is, that about 150 yards of its length, next the river, has got broken and filled up. The water, now a very full stream, runs over the surface, and in summer is very offensive." Although frequent complaints have been made, it appears that the delay has arisen "from the difficulty of obtaining the pecuniary guarantee from the proprietors interested in the work." The bursting of those sewers, and other circumstances which might be mentioned, show, we think, a want of proper system in the drainage of the town; for what can be worse than the practice of making tributaries without having sufficient space at the exit? Such conditions are very dangerous, and it is painful to think, that while the proprietors of dwellings are wasting time in bargaining, the unfortunate tenants are suffering.

With reference to the township districts where the cholera was very fatal, the inspector of roads says, "So few of the streets are at present in a fit state for sweeping, are so imperfectly bottomed or formed, that frequent differences will be likely to arise between the inspector and the contractor as to the amount of refuse to be taken up in sweeping, the mud varying, according to the traffic, from 3 to 15 inches in depth."

It appears that at the present time it is not necessary to license the slaughter-houses in the borough; and that the animals are brought where the inhabitants, in the dwellings surrounding them, are not only annoyed by the foul effluvia arising from the receptacles of blood and refuse while in process of being cleaned; but also nightly disturbed by the bellowing of the animals kept packed without food previously to being slaughtered. Some of these places are situated close to and even under dwelling-rooms: many a very badly provided with sufficiently tight vessels for the reception of the offal, and are not accessible to proper carts for conveying it away. The inspector of nuisances very properly observes that "it is desirable that the council or the committee should have control over these establishments by obtaining a bye-law conferring the power to grant licences for keeping them on certain conditions or regulations being observed in their management. The inspector (Mr. Dawson) also says,—"With the exception of the new slaughter-houses in Lower Friars'-street, which are kept in excellent order, nearly all those in the town deposit their refuse in the ash-pits attached to the dwellings. In these receptacles, when the refuse is covered and mixed with ashes, the dangerous and exceedingly offensive character of the effluvia does not appear. But when the mass is disturbed for the purpose of being removed, the stench becomes quite insufferable." It is very evident that various and more stringent enactments than those at present in use are required, not only in Newcastle, but in other large towns, before the lives of a large portion of the population can be rendered safe. The hint by Mr. Dawson is worthy of consideration:—"With respect to the management of nuisances arising from the keeping of swine, I beg to observe that the bye-law at present in operation, which forbids the keeping of swine within a distance of 30 feet from a dwelling-house or public footpath would be much more effective if extended to distances of 60 feet or 100 feet. Swine are now kept in certain narrow lanes and courts, badly ventilated,

where the air, from their presence, is often in a very foul state. Such cases cannot be reached by the present bye-law, because the contiguous footpath or passage is not a public one. So strong is the desire to keep these animals, that notices have been served to remove from situations forbidden by the bye-law no less than 386 during the last year. Six of these offenders have been summoned before the magistrates and fined. Proceedings, after having been commenced, have been evaded in many cases simply by removing the caboose or sty a few feet, the nuisance virtually continuing the same as before."

As regards the smoke, which in grim and mighty volumes astonishes all visitors, to this town, it would appear that little has been done in prevention—the magistrates having, in many instances, refused to commit offenders on the clearest evidence. This is to be regretted, for this is not the way to encourage the health-officers of the town to do their duty effectually. Messrs. Stephenson, Hawthorn, Burnup, Armstrong, and a few others, have set the laudable example of consuming their smoke; but in other places the blackness is wonderful. We could say much more in connection with this important subject, but have already exceeded our limits: we must, however, urge that medical men of great experience and ability have pointed out, both in the Town Council and elsewhere, the danger which hangs over this ancient borough; we fear, however, without much effect.

At the time of the last visitation of cholera a sanitary committee was formed: this useful arrangement was, however, broken up within a twelvemonth.

Having taken some trouble to get at the sanitary facts in connection with this important town, we feel able to state that it would be easy to provide the necessary funds for carrying out, with rapidity, the improvements required; but that there seems to be a want of inclination to go thoroughly and steadily to work. We do hope that what has been said, with the sincere wish to do good, will be received in the same spirit; and that the corporation, the magistrates, and the inhabitants will unite in their exertions, and remove the plague-spots which are so disgraceful to a place which can boast of such an array of citizens of distinguished ability, both in art and science, as Newcastle can point to. At the present moment it is a painted sepulchre.

#### A CENTRAL "PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH ACROSS THE WATER.

In resuming this subject, I would ask your metropolitan readers to take a walk to the Borough end of Hungerford-bridge, after church on Sunday, for on that day the factories are not at work making smoke. If the sky be propitious, and there is a little wind abroad, they will be rewarded by one of the finest city views in the world. The situation they will then occupy in part of the front of the "Quadrant space," to adopt your own phraseology, between Westminster and Waterloo bridges, commands the great central bend of the river. The city on the north bank lies extended before the view, in a semi-circle, or as one-half of a panorama, embracing St. Paul's to the east and the Houses of Parliament to the west, while the innumerable spires of the metropolis adorn the sky-line of the prospect as you sweep your eye along between these two objects. The whole city seems spread out before you, while the river below is busy with life and steam-boats. The greatest highway of London is there beneath your gaze, and all along the opposite bank you may perceive sites and buildings, instinct with recollections, bound up with the history of our country. A finer spot for historical musing could not be afforded to our lately ennobled historian. And these sorts of suggestions are not to be left out in considering a city. He who is dead to them is no patriot. Myriads of human beings are born, live, and die within the bounds of London. How much do they depend upon their associations? Those are but small judges of human nature who do not admit at once that grand areas and grand buildings have a vast effect in ennobling the thoughts and expanding the ideas. The plan of a vast city is a grand thing, and reacts on those who build it and dwell in it. If its streets are close, dingy, and confined, the head droops, and the shoulders fall together as one creeps along them; but come to a fine, open "place," the form becomes more erect, the chest dilates, the head is raised up, its eyes look about, and the heart is thankful. A grand space fit for such inspiration, would I have, as I have said, in the centre of London, fraternally uniting the north bank and the south bank, and the river, in one triad embrace.

But to continue, granting that your readers go with me in feeling how noble is the prospect that is commanded from this part of the south bank of the Thames, it is equally evident that the enhancing of

that spot (by its complete "éclairage," to use again your own word) and elevating it terrace-wise to the level of the footway of the present Hungerford-bridge, the whole quadrant space would be a corresponding benefit to those parts of the north bank which form so fine a prospect from the south. I mean that the advantage would be reciprocal. The terracing and opening out of the quadrant space would afford from it a yet finer view of the north bank of London than that already attained from Hungerford-bridge, while it, with its grand sweeping river front, its wide spread area, and the noble buildings which we might hope to arise in future on it, would present the finest possible object from all points of access on the north bank, stretching from Westminster Palace and St. Paul's, including all the bridges. No form or situation of area could offer more advantages to the noblest effects of architecture than this segment of a circle, with its bold sweeping river front, and lit up frequently, as it would be, in various gradations by the westerly sun. Alluding to the effect of this, I have never seen so magnificent an evening city view as from this spot (I mean the Borough end of Hungerford-bridge), one afternoon, when looking towards the west. The mass of Gothic structures at Westminster came out against the setting sun in the most magnificent manner!

This is far the finest point of view from which these gorgeous piles can be viewed, especially if the Westminster-bridge could be removed. No kind of structure, not even a Gothic bridge, can span the river at the spot occupied by Westminster-bridge, without, I apprehend, injuring the effect of the Houses of Parliament; and according to the plan I have submitted to you, I do not think it is there that a bridge is wanted. I would have the bridge to cross the river above, instead of below, the Houses, uniting the quarter about Lambeth Palace with the opposite side. A bridge must soon be built there, at any rate, as has been often proposed. I would, in that case, do away with Westminster-bridge altogether, and would absorb its traffic among other traffic, by a bridge (I have said before of 100 or 200 feet wide, but I will now say of 800 feet wide) stretching from Charing-cross to the "Quadrant space" on the Lambeth side of the water. The true centre of London appears to be about the middle of the river at this spot, and would be therefore in the centre of such an eventual bridge. This bridge being so wide, would indeed no longer be a mere passage, like most bridges, but would be a continuation as well as junction of Trafalgar-square and the Lambeth-terrace on one great parallellogramic area.

A bridge structure of this character and magnitude would, I believe, be unexampled, and would probably be susceptible of novel as well as expanded architectural effects of a high quality. It would, of course, connect Trafalgar-square and Lambeth-terrace on a level (like Waterloo-bridge), and might be named after our honoured Queen. Perhaps it would not be too much to say that Trafalgar-square, Lambeth-terrace, and Victoria-bridge would then afford one of the finest views, if not the very finest view, in the whole world, as a metropolitan centre.

I conceive that the level requisite to be obtained on the Borough side for the new terrace would afford beneath it a range of warehouses of great value; and as regards the structure of the bridge, it might, I should think, be supported on a forest of vast pillars, so as, to those passing beneath in boats, to seem like a "temple of Karnak" on the water, or a "light and airy cave of Staffa," so as to have the grandest effect possible. These pillars would be of such dimensions as to reach from high-water mark (up to which the piers would be built) to the roadway above representing the embankment. The width of the bridge (100 yards) would of itself lend stability to the structure, so as to allow its character to be less ponderous, so that these pillars alone should offer sufficient support. This width would also allow of light being provided from above in combination with architectural and sculptural decorations upon the bridge for which it might afford fine opportunities.

The above idea is probably only one of various architectural devices by which a bridge of 100 yards wide, crossing the Thames at Charing-cross, and uniting Trafalgar-square with the Borough-terrace, might offer features of an effective character.

My object is to draw attention to this expansion of the "Heart of London," now that the question of the improvement of the metropolis is forcing attention on the public from so many quarters. In this letter I have only alluded to the architectural effect within the compass of such a scheme, and not to the practical advantages in the way of traffic, &c. on which I have touched with a timid hand before. In my next letter I will, for the chance of your inserting it, append a little map of the immediate neighbourhood, with the general scheme marked on it, and will make a sort of résumé of the points to which I have heretofore alluded.

ESPILON.



## DESIGNS FOR SUBWAYS IN METROPOLITAN STREETS.

The designs for laying out the surface and subsoil of streets submitted to the Metropolitan Board of Works, as mentioned last week, are now on view in the large room of the Society of Arts. We have already given a list of the thirty-nine sets and the names of the successful candidates. Further examination has not removed our impression that little novelty of value has been produced by the competition, remembering the plans made public many years ago in this country, and in France by M. Horeau and others.

Looking to the rewarded designs for—

*First-class street*, in the design to which the first prize is awarded, No. 19 (Mr. Davis), the whole of the ground between the opposite rows of houses is cleared away, and the vaults of the houses composed of 14-inch brickwork, are extended across the street, leaving an interval between the back walls of 9 feet. This is arched over, and forms the subway, in which are placed, on corbels, the gas mains and the water mains, running along the bottom on the paving. Below the paving, in the centre of the subway, is the sewer, of a half-egg shape, in brickwork, and covered with stout Yorkshire paving, 2-inch intervals being allowed between the stones, to permit the water or drainage, should the flow be suddenly great, to rise into the subway itself, which is, in time of need, to serve the purposes of a sewer.

The cost of this is estimated by the author at 367. per lineal yard, which is to include constructing the vaults to the houses, and covering the roadway, under the metalling, with an elastic material—patented for the purpose of deadening sound.

In the second rewarded design, No. 32 (Mr. J. T. Knowles), the house vaults are similarly extended, leaving an interval of 15 feet between the back walls, in which are placed the sewer and the water main: the gas mains are placed on either side the street by the side of the footways, an improvement, certainly, if we would avoid a weekly blow up: preparation is made for ventilating the sewer by means of shafts; gas being introduced for the purpose of producing or increasing the circulation; and light is thrown into the vaults by openings under the curb of footways, which are raised higher than those in present use.

The estimated cost is put at 221. 14s. 7d. per lineal yard, but this is exclusive of the house vaults.

In both these designs the road, in fact, standing on arches, ready access to the private drains, and for the arrangement of gas supply, is obtained.

In the third design of this class, No. 11 (Messrs. Warren), the house vaults are as usually constructed, and a gangway, 4 feet or 5 feet wide, is formed against the ends of them, in which are placed the water and gas mains. The sewer is in the centre of the road, ventilated by openings in the road, or by lamp-posts, and shafts carried up in the chimney-stacks of some of the houses abutting on it.

The houses are to be drained in pairs by 6-inch pipes, running into a 9-inch pipe, which is to be connected with the sewer; and the water-supply is to be by a 9-inch main on one side, with a 4-inch rider ditto on the other, always charged at every lamp-post in case of fire, for road-watering, &c.

The cost of this arrangement, including a cast-iron paving for the carriage-way, but exclusive of the water and gas main castings, is computed at from 387. to 397. per lineal yard.

Of the designs for *second-class streets*, in the plan to which the first prize was awarded, No. 3 (Mr. Cullingford), the sewer is carried on both sides of the road, outside the house vaults, with a passage-way over, to contain the water and gas mains. The ventilation is by means of gas fires burning at the end of the passage, shafts being carried through the area walls, and up the party-walls, by the side of the kitchen flues, as often as required.

The road is to be drained by means of gully-pits with outfall into sewer. The cost is called from 127. to 157. per lineal yard.

In the second design of this class, No. 26 (Mr. Reddell), there is a continuous passage-way below the footpaths, in which are placed the water and gas mains, and which affords access to the sewer: light is introduced to this passage by means of deck-lights in the iron curb to the footways, the passage is also arranged to receive the telegraph wires, in all other cases conveyed along the subways. The sewer is ventilated by 12-inch drain-pipes, built in behind the flues in the party-walls. The outlay at which this is estimated to be carried out is 231. per lineal yard.

In the third design, No. 24 (Messrs. Hughes and Hopkins), the whole of the ground is again cleared away, the interval between the backs of the vaults being used for the subway; but, unlike the other intentions, this proposes that the sewer, instead of being sunk, shall stand on the paving of the passage-way, being, of course, perfectly water-tight, the gas

and water mains resting upon it. The cost is calculated, with the vaults under the road, as at 457. per lineal yard, exclusive of the vaults, but with tunnel communication to each house as at 397.

Some of the designers appear to have forgotten the depth at which our sewers are occasionally found, and others the amount of accommodation which the water-mains, &c. in some of our roads would require.

## THE MINERAL STATISTICS OF THE COUNTRY.

A MOST useful and elaborate volume of mineral statistics, by Mr. Robert Hunt, the Keeper of Mining Records, has just been published, by authority of the Treasury.\*

In the introduction, Mr. Hunt expresses his satisfaction in being enabled now for the first time to embrace every important branch of our mineral industries. Sir R. I. Murchison, the Director of the Museum of Practical Geology, appends a Notice, in which he speaks of the value of these returns, and remarks that they are particularly important in showing that the produce of coal in the United Kingdom has now reached the enormous annual amount of 66½ millions of tons (money value at the pit-mouth, 16,663,8027.).

With respect to the statistics of building stones, clays, bricks, &c., in which we were particularly interested, the returns, though considerably increased, and very valuable and useful in detail, are not so complete as to afford any correct general results that could easily be embodied within moderate limits. This is most especially the case in respect to clays manufactured into bricks, tiles, &c. Still the volume contains many important details even as to these. We find, for example, that 54,552 tons of clay were shipped in 1856 from the port of Poole to twenty-one home ports, such as London, Bristol, Liverpool, Hull, Glasgow, &c.; and that 3,061 tons were shipped thence to Antwerp, Stockholm, Seville, and various other foreign ports. To London 582 tons were sent by South Western railway.

The statistics of building stones begin with the granites, elvans, porphyries, and slates of Cornwall. From about Penryn and Penzance alone, 244,600 cubic feet, or 22,050 tons of granite were produced in 1856. The limestones, slates, and granites, &c. of Devonshire, are next given. Peculiarities in the slates of Llancauno are described, some being good only for flooring, others for chimney-pieces, &c. The oolites, conglomerates, sandstones, slates, &c. of Somerset and Wilts. come next under notice. The total value of the Bath oolites worked in 1856 appears to have been 25,0007. In a note it is remarked that the value of the Bath oolite, before any delivery charges are incurred on it, is about 9s. per ton of 16 feet. Of the oolites of Portland, &c. at Weymouth, Dorset, at least 2,000 tons a day are used for the Portland breakwater. Under head of Surrey, it is stated in a note that lime from Reigate chalk is sold at the pits for 9s. a square yard, and the chalk, when dug in large pieces, is sold at 3s. 6d. the wagon load. Quarries at Maidstone and Aylesford, Kent, yielded 55,000 tons of Ragstone. In a note it is remarked that the Harwich breakwater, Lowestoft harbour, and some works at Chatham, besides several metropolitan and other churches, are built of Ragstone from the Maidstone quarry at Maidstone, and an analysis of it is given. Of the Staffordshire limestone, got at Castle-hill, Dudley, about 3,500,000 tons are used in the Staffordshire iron-works alone. Under Staffordshire also it is noted that the Rowley rag has been employed by Messrs Chance in the manufacture of artificial basaltic stone, and a description of the process is added. Some interesting information is given as to the alabasters and marbles of Derbyshire. Under "Aberdeenshire," it is noted that the prices of the Aberdeen and Peterhead granites in the quarries varied, in 1856, from 2s. to 5s. the cubic foot. At Aberdeen, 30,000 tons had been produced, of which 30,393 tons were shipped; and at Peterhead, 2,400 tons were produced. Of the Olden slates, in Argyleshire, 10,000,000 are annually produced. In short, there is something of interest, or of practical value, in every page of these statistics, incomplete as they still are; and doubtless every year will increase their comprehensiveness and general utility.

The returns of iron ore are far more complete than those given in any former publication, and may now be regarded as a very close approximation to the real produce of all the iron-mining districts of the United Kingdom. These returns show that 10,483,309 tons of iron ore have been produced. Iron ores have sold, according to their respective qualities, at the mines, for prices varying from 5s. to 15s. per ton. The

\* Memoirs of the Geological Survey of Great Britain, and of the Museum of Practical Geology. Mining Records.—Mineral Statistics of the United Kingdom of Great Britain and Ireland for the Year 1856. By R. Hunt, F.R.S., Keeper of Mineral Records. London: Longman and Co. 1857.

mean average price of iron ore, computed from the sales of all the districts, has been 11s. per ton. This will give 5,695,8157. as the value of the iron ore produced in 1856 in Great Britain. The total produce of pig iron, at the mean average market price, or 47. per ton, will give a money value equal to 14,545,5087.

The quantities of metallic copper produced from the mines of the United Kingdom in the last three years were as follows,—

	1854	1855.	1856.
	Tons.	Tons.	Tons.
Cornwall and Devonshire .....	11,979	12,678	13,333
Sold at Swansea .....	1,215	1,276	1,245
Purchased by private contract .....	6,489	7,140	9,171
Total .....	19,717	21,294	24,257

The fine copper in 1856 was the produce of 278,792 tons of copper ore, obtained from the mines of Great Britain and Ireland, the money value of the ore being 1,744,5167. This exhibits, in 1856, an increase in our production of fine copper of 2,968 tons over that produced in 1855, and of 4,340 tons more than the quantity yielded in 1854. In the same periods, the proportion of copper produced at Swansea from foreign and colonial ores, sold at the public ticketings at that port, have been respectively,—in 1854, 3,495 tons; 1855, 4,630 tons; 1856, 4,537 tons. The money value of the copper produced at our British smelted works was, in 1854, 2,331,8047.; 1855, 2,867,2077.; 1856, 2,846,8037. The mean average market price of the several varieties of metallic copper was, in 1855, 1307. 5s. and in 1856, 1257.

The following comprehensive table will show the value of the whole of the mineral produce of the United Kingdom in 1856:—

Tin Ore .....	2683,850
Copper Ore (the produce of all two sales, excluding foreign ores, but including private contract purchases) .....	2,343,060
Lead Ore (as sold, containing silver) .....	1,431,659
Zinc Ore .....	37,465
Iron Pyrites .....	46,968
Arænic { Sold in Cornwall .....	£1,011
Other Sales .....	900
Nickel and Uranium .....	1,011
Iron Ore .....	227
Cobalt .....	5,615,315
Salt .....	10,904,812
Bryozoa and other Minerals .....	533,003
Porcelain and Fine Clays .....	10,000
.....	120,896
Building Stones (estimated on the basis of the returns and prices given) .....	27,129,814
.....	3,042,473
Total .....	30,602,323

The market values of the metals as obtained from the furnace, have amounted to the following sums:—

Tin .....	2683,850
Copper .....	2,343,060
Lead .....	1,735,969
Silver .....	163,547
Zinc .....	235,075
Pig Iron .....	14,545,508
Other Metals .....	100,000
.....	21,434,270
Other Mineral Products (exclusive of building Stones) .....	17,348,751
Total .....	37,783,021

## RESTORATIONS IN EXETER.

SOME remarks made in the *Builder* of the 14th instant, in a laudable spirit, on the churches of Exeter, should not pass unnoticed.

"Observer" asks what the members of the "Architectural Society" are about, if their church towers are allowed to wear coats of stone and plaster in splashdash, whilst the old registry-office close to the cathedral has been modernized with a plastered facing.

The fact is, that the Exeter churches, and too many other buildings (including the registry-office referred to, where some good cinquefoil-headed lights were done away with, are required without the advice of an architect. Even the cathedral is in the same predicament; and although the dean and chapter renew portions of the exterior from time to time, and have lately replaced two statues that were broken in the western screen, the want of the eye of a master over the whole building is apparent, and the Architectural Society has no control over the improvements. The parishes are small, and represented by citizens not wealthy; so that, anxious as the secretaries and members of the society are to reprove bad work and encourage good (St. Lawrence's Church was improved through the assistance of a member), they have very little power over the repair of the parish churches.

Still there are some edifices which evince that the church-restoring disposition is not so dead in the "semper fidelis" city as your correspondent's sensible remarks might lead us to suppose.

ONE OF THE E. D. A. S.





INSTITUTION FOR THE DEAF AND DUMB, CABRA, IRELAND.—MR. C. GEORGE HEN. ARCHT.

#### ST. JOSEPH'S (R.C.) INSTITUTION FOR THE DEAF AND DUMB, AT CABRA, IRELAND.

Not long ago, we gave some particulars of this edifice (p. 584), which has been erected from the designs of Mr. C. Geoghegan, of Dublin, and we now add a view of it. The plan of the building is an elongated parallelogram, having a centre projection beyond the limits of the wings at front and rear appropriated to the use of the "Christian Brothers," apartments for masters, servants, cellars, and closets. Each floor contains four rooms, with principal staircase, situate between the back chambers facing the hall entrance.

In the wings, which are connected with the centre by corridors, having glass doors, are contained the schools, chapel, refectory, dormitories, play-room, kitchen, staircase, and inferior offices: a covered ambulatory, extending the entire length of the back elevation, and thence to a depth of 160 feet behind the building, serves to divide the garden from the play-ground, ball-court, &c. to which it offers a convenient shelter and approach to the out-offices from the main edifice.

The style selected for the institution may be termed the Gothic of the Tudor period; the quoins, window dressings, arches, cornices, &c. are formed of red bricks from Wexford, of sizes and moulds made expressly to suit the various purposes. The string-courses, sills, copings, ornamental carved crosses, finials, and niches are of granite, with entrance steps and balustrades. The walls are built of limestone masonry, plastered and pebble dashed, with which the red brickwork and dressed granite form a contrast.

The chimneys are of terra-cotta, varied in design, forming the apex of end gables of each wing. The entire roof is finished with crested ridge of fire-clay. The schools, dormitories, chapel, &c. will measure, at completion, 68 by 32 feet. The flooring is formed of full-sized deals, tongued with iron hooping, sustained upon wrought-iron trellis girders, thus obviating the necessity of joists, columns, plastering, &c. and giving additional height to the apartments. Alternate flues for fresh and foul air have been provided in piers situated between each tier of windows, with warm-air chambers in connection with fire-place of central building.

The contract for the present works, taken by the Messrs. Beardwood, amounts to 7,000*l.*; the ironwork in which has been skilfully executed under the direction of Mr. Anderson, of the firm of Messrs. Courtney and Stephens, each girder having fully realized its calculated strength under the required test, in presence of the architect.

The institution, in its present state, provides beds for 100 children, and when the wings are fully completed, will accommodate 100 more.

STRIKE AND INTIMIDATION AT DERBY.—There being a turn-out at the Victoria Foundry, and new hands not belonging to "the club" having been taken on, one of these was threatened by two of the turn-outs, who have been sentenced, at the County Hall, to one month's imprisonment each with hard labour.

#### "VIATOR'S" ACCOUNT OF WORCESTER CATHEDRAL.

It would be well if every "Viator," while pausing on his way in one of our cities, were to devote an hour or two to the investigation of the cathedral. In every instance the time would be found to have been well bestowed. But there is a vast difference between a traveller's passing visit to one of these grand churches, and such a diligent, sustained, and thoughtful examination of the same edifice as will justify the subsequent appearance of a descriptive and critical notice in the *Builder*. The "Viator" who has recently been writing in your columns upon Worcester Cathedral, will pardon me, I trust, if I correct certain inaccuracies which detract from the value of his papers upon Worcester Cathedral, as they have appeared in the *Builder* of the 3rd and the 17th inst.

After commending the recent removal of the white-wash from the Purbeck shafts, strings, abaci, &c. in the choir and Lady Chapel of the cathedral, "Viator" expresses his opinion that "the painting, oiling, and varnishing to which the marble has been subjected, appear but a poor substitute for the polish of which it is susceptible." Neither point nor varnish has touched the marble. In many instances, the condition of the surfaces rendered polishing impossible: in other cases, circumstances did not admit of polish being applied; and some of the shafts, &c. have been polished. All the rest of the cleaned marble has been carefully rubbed with oil.

"Viator" has imagined that the south face of the lesser transept has been rebuilt after a design, carefully copied from the opposite face of the same transept towards the north. Instead of this being the fact, the restoration (absolutely necessary from the condition of the building) of the south face of this beautiful and singularly interesting transept has been effected by replacing every stone of the original work in its original position, in exact accordance with the time-worn but still legible expression of the mind of the great artist who originally raised this portion of the fabric. The pinnacles, indeed, are new; but this was an inevitable necessity, all traces of these members, as they were at the first designed, having long disappeared from every part of the cathedral. "Viator" pronounces these new pinnacles to be "immoderately heavy," and "as unlike the graceful turrets of our Early English churches as the imagination can figure to itself." I do not know to what "graceful turrets" "Viator" alludes: these pinnacles have been carefully studied from one of the best original examples, and they differ from the model only in their being somewhat lighter than that model may be seen to be at Beverley.

The actual eastern end of the cathedral, with its window group, is new, both in design and in construction. The design has been derived from the original features of the north and south faces of the lesser transept; and while the general character of the new composition is in exact harmony with the transept, it has been modified with equal skill of judgment so as to adapt it to the more important

position of the eastern end of the cathedral itself.

"Viator" represents the new group of ten lancets with the gable trefoil to have taken the place of the "great east window of the geometrical tracery period, of nine lights, with a transom at mid-height." The loss of this window, however, "Viator" considers to be a subject for but little regret, except on account of its "comparative antiquity." I will only remark upon this, that "Viator" may be quite at ease as to the "comparative antiquity" of the lost east window, since it was erected by one Nelson, not seventy years back, in the place of an earlier window, which, in its turn, appears to have succeeded to the original composition.

The remains of the second Norman Cathedral, together with the relics of the first, which yet linger about the great transept, "Viator" does not notice, but he indicates the existence of early members, which he considers "good evidence that this part of the building was, in its origin, conformable to the Early English of the choir and Lady Chapel." A more careful examination would, I am persuaded, convince "Viator" that the early portions of this transept were finished before the choir was even contemplated.

It is the first, not the "second," pier from the west, on the north side of the choir, which differs in so singular a manner from the other piers of the arcade in both bulk and section. It is to be regretted that "Viator" did not give an exact description of this anomalous pier. What is to be understood by the statement that the windows of the choir-aisles are "preceded by a screen of triple arcades, on shafts"?

"Viator" considers that a quarter of a century must have "intervened between the completion of the opposite sides of the nave." Such an interval would scarcely have produced such marked changes. The remarkable manner in which the two western Transitional-Norman bays of the nave have been made to range with the Gothic bays, and the much earlier remains which are to be traced where the actual junction was effected, are not noticed by your correspondent. Of some of the late Norman decoration he says that he "can give no description." "Viator" would find, on examination, that the ornaments in question are formed by groups of spiral shells: shells also are introduced into the enrichment of some of the caps.

The extension of the Early Norman crypt towards the south, beyond the southern range of the choir-aisles, and the closing up by masonry of the apsidal aisles of the main crypt itself, your correspondent does not describe; but he speaks particularly of some wall-painting in the crypt, comprising an "architectural design of a trefoil-headed arcade, and some esculentons quartered with fleurs-de-lis and lions rampant, so that these can scarcely lay claim to an antiquity higher than the twelfth century." The wall-painting in the crypt at Worcester represents an arcade of four principal five-foiled arches of equal height, with two smaller lateral arches. In the three spandrels above this arcade are as many shields, the central one being England, three lions passant, and the others *Beauchamp* and *Clare*. Beneath each of



the four principal arches is the figure of a bishop, in full vestments, in benediction, with a nimbus. One of the figures is tolerably perfect, but the other three are much defaced: all were evidently drawn by an accomplished hand. The double piscina yet remains in this one beautiful chapel. This wall-painting is on the northern side of an Early English bay, which now terminates towards the east the (otherwise) Norman crypt beneath the chapel to the south of the southern choir-aisle. A recent excavation has shown that a similar Norman crypt once existed towards the north. The whole of the Norman crypt is evidently the work of Wolstan, the first bishop of the see under the Norman dynasty.

"Of the exterior it is not necessary to say much," writes "Viator," and he then proceeds summarily to declare that "it is quite impossible to fix upon a single feature which can be offered as a pleasing illustration of any period of architecture." Certain particulars follow, all of them about as correct as the description of the heraldic wall-painting in the crypt. The Tower has neither lost the nobleness of its form, nor have the "effacing fingers" which have been busy themselves with its surface obliterated all traces of its original rich and effective decoration. The fine effect of the exterior of the cathedral, while it yet retained the character which the Gothic artists had at the first imparted to it, has, indeed, been sadly impaired; but it has not disappeared; neither has it left us without sure guidance for conducting rightly the work of restoration. "Viator" complies with his mistakes statements which might detract from the reputation of the workmen who have executed the restorations. He cannot refrain from indulging in the habit of reflecting upon the Dean and Chapter: he omits all mention of the architect who is so satisfactorily carrying out the comprehensive views of the liberal and enlightened guardians of this noble cathedral; and he advances opinions which demand criticism instead of conveying information. C. B.

#### ARCHITECTURAL ASSOCIATION.

On Friday, the 16th, the first business meeting of the session was held at Lyon's Inn Hall. Mr. Wigley, President, who was in the chair, said that since the last meeting a fortunate event had happened to their treasury, and which had brought it nearly to par. After correspondence with the Architectural Exhibition, with reference to the advance of funds that was made by the Association, on the occasion of the first Architectural Exhibition, in 1849, altogether originated by the Association, which advanced something like 15*l*. for the purpose, that sum had been refunded by the Architectural Exhibition to their treasury. This gave the Association the double satisfaction of having a public acknowledgment of their having originated that useful public institution, and enabling them to face their creditors.

Mr. S. C. Capes read a paper "On the Public Libraries, Art Schools, Museums, and Buildings in London, with the Advantages they offer in architectural Education," which we print in full. Mr. Penfold made some observation at the close of it, wherein he referred thankfully to the lectures of Professor Donaldson at the London University, and showed their value, as did the chairman also.

Mr. Herring, Hon. Sec. then said it was a well-known fact that many of those engaged in architecture had not proper time, although they might have the means, for study, and he would propose that the meeting should express its feeling to the architectural profession at large, as to the desirableness of letting their pupils have the benefit of the Saturday afternoon. Ultimately, a resolution was passed expressing as the opinion of the Architectural Association that the privilege of the Saturday afternoon holiday should be accorded to the pupils and assistants of architects in London and the United Kingdom, and recommending the subject to earnest consideration.

#### ON THE PUBLIC LIBRARIES, ART SCHOOLS, MUSEUMS, AND BUILDINGS IN LONDON, AND THE ADVANTAGES THEY OFFER IN ARCHITECTURAL EDUCATION.

The metropolitan cities of other countries may have more art reputation, yet none equal London in the solid means of instruction in every branch of science and art afforded to its inhabitants. Rome and Athens, with their temples, palaces, and ruins; Paris, Vienna, Munich, St. Petersburg, and others, have each their charms, and several objects of study; and London, unpoetic and unartistic as it may appear to foreigners and strangers, possesses a much larger amount of architectural adornment than is generally acknowledged, equal, if not superior in general character, to that contained in some of the much-praised foreign cities. It will be my object to endeavour to draw the attention of the junior members of the architectural profession to its best and most instructive buildings, and to

point out to them the various sources of study placed within the grasp of its inhabitants, as well as to show how every student may obtain instruction in whatever path he desires to pursue, either for amusement, profit, or fame.

Do not suppose that I undervalue the advantages of foreign travel, or deny the great beneficial art results derived therefrom; such I consider one of the essentials for their perfect education. My present wish is to describe how they can procure in this metropolis a large amount of professional knowledge not to be acquired in an office, and at a small money cost, and can profitably employ those hours not occupied in the ordinary office routine, which routine is absolutely necessary in order to acquire a thorough knowledge of the laws and business of the profession, and which can only be obtained by going through a proper course of training in the office of an architect.

I know you will advance as an argument the difficulties under which they labour in obtaining sufficient time to follow up the advantages I am about to describe, but I do not think that any architect who receives with his pupils sufficient remuneration to compensate him for the trouble taken in imparting office instruction would be unwilling, for the interest of his pupil as well as his own reputation, to allow him such opportunities of pursuing those studies which the progress of the present age demands, and which are not expected to be acquired in an office. It is not to be supposed that in those extreme cases where no, or only a very small, premium is given with a pupil, and where it is understood that the latter should, in compensation, devote his whole time in making himself useful to the architect to whom he is attached, he should be enabled to obtain equal opportunities as those who have not, as it were, immediately upon leaving school, to assist in providing means for the completion of their own education; yet for this latter class, and for those engaged as assistants, by a more diligent use of their mornings and evenings, they can acquire by the same means of instruction the same amount of knowledge as those in apparently more favourable circumstances.

I have prepared a list of some of the art schools, libraries, museums, and societies of London, with their rules for admission, which, after an explanation of their contents and objects, I will read for your guidance, and which can be consulted daily at the office of the registrar of the Architectural Association, one of whose duties it is to assist architectural students in their educational pursuits by obtaining for them introductions, or by giving such information as will best enable them to carry out their views.

The thoughts, precepts, and works of the learned men of all ages must form the grammar for our education, and the opportunities of studying the books wherein they are contained and the drawings which illustrate with life-like reality the embodiment of their ideas are afforded to us in the numerous public and private libraries which London possesses; but, surrounded as we are by them, how little do we seem to appreciate the advantages of this, the greatest boon we can receive, and which it is impossible too much to appreciate? And yet how often do we hear complaints of the difficulties which surround us in our pursuit after and our endeavour to quench our thirst for knowledge. The libraries of the British Museum, the Department of Science and Art, Soane Museum, Museum of Economic Geology, East-India Museum, the City Library at Guildhall, Institute of Architects, and Institute of Engineers, and in these libraries are obtainable works of all ages and of all countries, of all kinds and descriptions of art, science, and literature—such a collection as no other city did or does possess, and so undeservedly neglected by those who are aware of the riches they contain, but are too indolent to seek for them.

For schools of ornamental and practical drawing, modelling, and sculpture, there are the classes at the Department of Science and Art, the King's College, London University, Royal Academy, &c. with the most talented artists to assist your studies, as well as the drawings and models contained in these schools, the sculptures and ornamental works of various nations contained in the British Museum, the splendid collection of casts belonging to the Architectural Museum and Museum of Ornamental Art relating to the Greek, Roman, French, Mediæval, Renaissance, Italian, Cinque-cento, and Elizabethan periods of ornamentation, with drawings and cartoons illustrating the coloured mural decorations; the more than 4,000 articles of furniture, decorations in glass, metal, leather, marble, and other works, all treating of decorative art, and the models of the original designs of St. Paul's, and of various buildings designed by Wren and other great masters.

Do not forget the Soane Museum, containing casts and models of Greek and Roman ornaments and buildings. A catalogue of the books and description of the contents of the museum have been presented

to this association by Mr. Bailey, the curator, and is placed for reference of members at the office of the registrar.

The Sydenham Palace, containing a school of architecture and sculpture, is well known to you all, and with the aid of its well-written guide-books, affords a large store of instruction, combining under its vast roof the architecture of several ages and the sculpture of all nations, enabling you to contrast in art-history the æsthetics of one nation and of one age with another, and to follow up the gradual development of the several styles. It also, in its courts of manufacture, exhibits to you the building materials, fittings, and decorative art-furniture of the present day, bringing prominently before you many of the latest improvements of each class, and oftentimes showing you the detail process of manufacture, thereby affording you practical information in the easiest manner.

Under its roof and in its gardens, and also at the Botanical Gardens at Kew and Regent's-park, you can sketch and study natural foliage—a study requisite for ornamental design; and opportunities are there afforded to you for acquiring a knowledge of landscape gardening, for in practice we are often called upon to superintend the laying out of ground to the best advantage, to enhance the beauty or picturesque effect of our buildings.

In the history of our art you can have the advantage of the lectures given at the Middlesex and the two other archaeological societies in London; the Antiquarian, and several other societies; and in the instruction in the practical part, and various sciences bearing upon architecture, you have the Museum of Geology, with its lectures on geology, mineralogy, metallurgy, mining, physics, applied mechanics, natural history, and chemistry; with laboratory practice and schools; the Department of Science at Kensington, with its schools, lectures, and practical museum of building materials; its patent museum and library; its educational collections, with the models of schools and school-fittings; its Economic Museum, with its models, plans, diagrams, and drawings, relating to the dwellings, building materials, furniture, and fittings for the working classes; the very excellent course of instruction, both as regards fine art and construction, given by Professor Donaldson at the London University; and the System adopted at King's College, with their workshops, laboratories, &c.

The Royal Academy, Institute of Architects, Institution of Engineers, and the Society of Arts, all offer considerable inducements for the advancement of your studies, by their system of bestowing books, medals, and honorary rewards for drawings, designs, and essays, on various subjects, thereby raising a spirit of honourable emulation amongst their students and the younger members of the profession. The Royal Academy gives to those who have obtained sufficient elementary knowledge of drawing and design, upon submitting satisfactory specimens of their previous study, and upon proving themselves sufficiently advanced by performing test drawings in the schools of the Academy, a free studentship for ten years, during which period they are at liberty to enter any of the classes of the particular school to which they belong, and to attend all the lectures of the several professors, as well as the free use of the library. Of late years a rule has been enforced, that only those architectural students who have availed themselves of the advantages of the library and of the classes, consisting of perspective and treatment of shadows, are eligible in competing for their medals. For this year they offer a gold medal for the best design for a National Gallery; two silver medals for drawings of the west front of Spencer House, made from actual measurement; a silver medal for an architectural subject, tinted in Indian ink or sepia, exhibiting the scientific projection of shadows; and one for a perspective drawing in outline. Each recipient of the three first-named medals receives also a free admission to the schools, library, and exhibition for the remainder of his life. The recipients of the gold medals are eligible to compete for the travelling studentship, held for three years, at 130*l*. per annum, with 80*l*. allowed for the travelling expenses.

The Institute of Architects admit, for a subscription of one guinea per annum, the pupils of their fellows and associates to their library, and to all their ordinary meetings, and have formed for them a class of design, in which a premium of books is given for the best sketches made during the session. The medals, which they also offer, are not confined to students, and for this year are as follows:—The Soane Medallion, with 50*l*. to enable the successful candidate to study abroad; for the best design for a marine sanitarium; a silver medal and five guineas for the best geometric drawings, from personal measurement, of a Mediæval building in Scotland not previously illustrated; and a similar premium for the like subject in Ireland; with three or more silver medals and premiums of books for essays. The Institute of Engineers offer medals and book rewards for the best papers



read at their ordinary meetings, and essays forwarded to them on subjects bearing upon their profession.

The Society of Arts offer medals, both gold and silver, for drawings and essays submitted to them on art, including architecture; and on construction, manufacture, &c.

I have brought the subject of rewards prominently before you, to show that such inducement be required for study, there are specific objects placed before junior students, which, if earnestly pursued, will not only tend to future advantage, but present honour and reputation. You may say that the many public invitations to architects to submit designs in competition, as advertised in the newspapers of the day, afford equal attractions, but I deny they afford equal instruction; for, being dissatisfied with, and questioning the ability of the class of men, oftentimes totally ignorant of our art, who have to decide upon the merits of the drawings, it is almost impossible to bestow that interest on the subject to carefully collect the same amount of information, to weed all errors in construction, proportion, and style, as would be done before submitting the work to a competent tribunal composed of members of the profession.

The Architectural Exhibition is an institution of great value to the student, enabling him to examine and study the works of the present day, as erected in the various parts of this empire, and making him acquainted with the various improvements in manufacture, building materials, house fittings, and furniture, as soon as introduced. The exhibition is one of the many proofs of the advantages which have occurred from the Architectural Association, which, in carrying out its principles, has been enabled to originate and firmly establish so excellent an Institution, affording not only information to the profession, but art education to the public. This Association, instituted for the study of design and construction, is founded on the principles of mutual instruction, and is dependant upon the active co-operation of the junior members of the profession, who, the more eager they are, by combining, to avail themselves of its benefits and support its usefulness, must continue to increase its advantages. That the class of design, which forms one of its attractions, has been productive of great gain to its members, is evidenced by the leading position which those who formerly belonged to it are now taking; and there is no reason why, if other classes were organised for the study of other specific objects, that they should not prove equally beneficial; for, where students show themselves desirous to learn, many will have equal pleasure in imparting instruction.

If you will allow me to digress a little from my subject, I may mention that it is the earnest wish of the committee that more should be done, and they feel that, although this is a young society, there is no obstacle why, by energy and perseverance, it should not become one of the most prominent institutions of the age; for the advancement of our professional knowledge, and a school for fine arts. The annual subscription is fixed at a small amount, so as not to exclude earnest students, however poor; and it is only by increasing the number of its members, and by an earnest spirit of combination amongst themselves, that its sphere of usefulness can be extended; therefore, it is for you all to use your utmost endeavours to advance its interests, for by so doing you advance your own. All meet here on equal terms: all are students in art; for, however much we have acquired, we have yet something more to learn: it therefore behoves those who, through the means of this Association, have obtained the knowledge for which they sought, still to remain on the list of its members, and employ some of their spare hours in imparting that knowledge to others as a donation for what they have gained through its instrumentality.

Let those who have succeeded from it again join and unite for the common good: let the interest of one be the interest of many: let us all uphold the national art interest, and endeavour to retain, if not raise, that position which the late foreign and native competitions have gained for us, and that European distinction in matters relating to art which we are beginning to acquire.

You must excuse my running away from the subject of my paper, to which I now return by giving the list of societies and institutions mentioned at the commencement.

[Here followed a list of societies and institutions, with their rules, objects, and subscriptions, or means of admission.]

By this list you may observe that there are upwards of thirty institutions in London: I have named directly or indirectly on the study of your profession, having periodic lectures, illustrated with drawings and diagrams, which fix the subject-matter more firmly in the mind than any printed reports are capable of. There is no branch of art neglected, and every facility is afforded to those wishing to accept of instruction. Museums have been formed and fur-

nished, books collected, societies instituted for all classes of men, and by their location in this metropolis they necessarily become more advantageous to its inhabitants, as being more accessible than to those living at a distance. The value of these institutions to students will necessarily be in proportion to the system individually adopted for their own education: it is impossible without the aid of an architectural college to lay down a course of study for each different branch: they are, therefore, left to strike out their own paths to knowledge, or depend upon the guidance of each other: and it is only by being made acquainted with the different means of study, that they are enabled to avail themselves of their advantages.

We will now proceed to the buildings of London, and see what instruction they offer; and in so doing will commence with the most ancient that have escaped destruction by the great fire or the ravages of modern improvements; and, although the greater number of the buildings of antiquity have been destroyed, yet many remain of great use and interest to the student.

Of the Norman period there are fine examples in the Tower of London, consisting of the chapel, with other portions of the so-called White or Caesar's Tower; the remains of the priory of St. Bartholomew the Great in Smithfield, erected in the early part of the twelfth century, by Rahere;—the portion in the best state of preservation is the chapel of the old church, now used as the parish church; the circular part of the Temple Church, one of the four remaining round churches of that period in England, with its fine doorway, beautiful arcade, and triforium.

Waltham Abbey, within a few miles of us, may also be included in the buildings pertaining to London, and will well repay for the small labour of a visit; the crypt of Bow Church; the Confessor's crypt at Westminster Abbey, and portions of the south transept.

The Early English of St. Saviour's, Southwark, the chapel of Lambeth Palace, Temple Church, and the Early Geometric of Westminster Abbey, afford an endless supply of information to those desirous of studying the buildings of that style.

Of the Decorated period we possess Austin Friars Church, Lambeth Church, portions and several monuments in Westminster Abbey, St. Steven's Cloisters, &c.

Of the Perpendicular and Tudor styles, that marvellous work, Henry VII.'s Chapel, Westminster Hall, Crosby Hall, Eltham Palace.

Churches of St. Helen's, Bishopgate; St. Andrew's Undershaft; St. Olave's, Hart-street, and portions of many other churches and tombs in and about London are well worthy of examination. Hampton Court may also be included, and contains many valuable suggestions.

Of the Elizabethan, II.lland House, Charlton House—both very fine examples. Several portions of the ancient hostels and private dwellings in the east and south-east of London.

And should any wish to follow up their studies of Mediaeval architecture, there are many modern reproductions in the above styles, evincing the greatest talent on the part of their authors. The Palace of Westminster itself is a valuable school, which you would prize all the more had you to make a long pilgrimage to study from it. London possesses churches and domestic buildings innumerable, teaching you, by the experience of others, not only the true spirits of the several styles, but sometimes what to avoid; for it is not always setting before you the best copies that enable you to become perfect in your art: it is also necessary that the faults of others should be pointed out to you, so that you may avoid falling into the same errors. As our Government thought fit to have a room of horrors in their late Art Exhibition at Marlborough House, so have our architects raised up in London objects of dread: a wise man, however, learns by the experience of those who have preceded him in the same path; and oftentimes the study how to remedy an evil will lead to more careful thought and investigation than making an original design. It is also an excellent practice in studying a building not only to admire and sketch its beauties, but to endeavour to invest yourself with its spirit, and to design additional portions which you judge will add to its effect.

In the Classic and Italian styles of architecture there are works of which we may well be proud. The massing and grouping of the buildings of Greenwich Hospital form a palace equal to any for grandeur of effect; and where will you find any temple or building in beauty of outline to Wren's St. Paul's? You may declaim against the truthfulness of some portions of its construction, but you cannot justly deny its grace and elegance, both externally and internally. Had the interior only the benefit of good polychromatic decoration, it would, in my opinion, show itself the finest temple that man has yet produced.

The style adopted does not perhaps give so great a

scope for those picturesque corners and small groupings of details seen in Gothic buildings; but for grandeur of effect and impression produced on the mind it is equal to any. No matter from what point, whoever views it cannot fail to admire it, and feel either proud or jealous that London contains so fine a masterpiece. Look at all of Wren's churches: examine the plans; study the position of the ornamental details on their exterior; and you will not only have received valuable lessons in skill and geometric science, displayed in overcoming irregularities of sight and the poising of weights, but an insight into artistic and picturesque grouping for the adornment of a town. His great object in the external design of his churches was not so much to please the mind with a close inspection in the narrow and bustling streets, but to obtain elegance and life seen at a distance rising above the dirt and turmoil of the city. Take the towers and steeples of St. Mary, &c. Bow; St. Mary, Leigate-hill; St. Bride's, St. Vedast Foster, Christ Church, St. Stephen's, Walbrook, and many others, together with his attempt at Gothic, and you cannot fail to acknowledge the master-mind which you designed them, and the valuable lesson they afford in the true principle of design. St. Stephen's, Walbrook, is, I think, one of the finest examples of interiors that he has produced, though most are admirable for the purpose intended, namely, the assemblage of large numbers.

Let me call your attention to St. Mary, Woolnoth, a singular and pleasing design by Nicholas Hawksmoor, which may be studied with advantage; St. Mary-le-Strand; St. George's, Bloomsbury; St. Martin-in-the-Fields, with its portico (rather overpraised); St. Giles's, and St. George's, Hanover-square, all of which are churches of interest to the student.

The Banqueting-house at Whitehall affords you a small specimen of a design, which, if carried out in its integrity, would have greatly contributed to make London an art-city.

To those who have travelled abroad, I ask, where will you find a finer and more suitable building for public offices than is exhibited in Somerset House, with its beautiful Strand front, its atrium, its spacious quadrangle, and its bold river frontage,—save and except the exercise of the dome?

Our British Museum, Bank of England, Royal Exchange, India House, Mansion House, Horse Guards, Burlington House, University College, Geological Museum, Post-office, Custom-house, have each considerable merit. Newgate, as a prison, is a masterpiece of its kind, and our Waterloo and London bridges are yet always excite our admiration.

Our modern banks, fire-insurance offices, show our advancement in art. Our City halls, such as Goldsmiths', Fishmongers', and some others, are worthy of our wealth; and our new streets exhibit buildings, in studying which we may profitably employ our time. Our railway stations, baths and washhouses, markets, prisons, hospitals, and institutions, afford us a large field of instruction; and I may here remark to those who may be desirous of examining our public institutions for the purpose of study, that they will in most instances, upon application, receive the greatest attention from the officials, and every information that their time will allow. I myself have been over a great many, and have never received any great hindrance.

Our theatres and their scenery give us lessons in internal decoration; and, for vistas and picturesque street architecture, we possess the views from both of the Regent-circuses, that from Oxford-street, overlooking Hanover-square, towards the church (not sufficiently recognised), Trafalgar-square, the Poultry, Westminster, New Cannon-street, many portions of Belgrave, Paddington, and the suburbs; the Temple, Lincoln's-inn-fields, Piazza, Covent-garden, &c.; and for landscape gardening we possess our unrivalled parks and St. James Palace.

If we are deficient in fountains and statues (but of the latter we possess a large number, of great merit), and other street decorations, which many continental towns contain, we have in lieu thereof the freshness and verdure of our squares, and the quiet which pertains to them: and if we have not our public buildings so well situated for attracting the popular admiration, we have them in greater numbers, and they possess all the means for furnishing art-instruction.

If my humble efforts be the cause of drawing more serious attention to the riches which surround us, and induce any to make use of the advantages placed within their grasp, it will greatly enhance the pleasure I feel in coming before you. S. C. CAPES.

BIRMINGHAM AND MIDLAND INSTITUTE.—Part of the Birmingham and Midland Institute, built from the designs of Mr. E. M. Barry, and of which we engraved illustrations, was opened on Tuesday evening, the 13th inst. We are glad to hear that many of the speakers expressed their satisfaction at its acoustic properties, which are always a cause of uneasiness to an architect.



## THE USE OF INDIGO.

TURNER'S DRAWINGS.

In the days before cobalt and French blues were invented, water-colour painters had scarcely any alternative between indigo and Prussian blue. The use of indigo was, however, the rule, and that of the prussiate of iron the exception, because no pigment is so capable as indigo of representing aerial tints and tones, or so available in the formation of landscape greens and greys in every variety of tenderness or intensity.

This otherwise valuable pigment has, however, one fault of such magnitude as ought totally to exclude it from a place in the *matériel* of the conscientious artist. It is one of the most evanescent of pigments. I speak, of course, of the indigo of commerce, simply ground and made up for use as a water-colour, and not of the sulphate of indigo, which, although it will stand, is violently intense, and acts chemically upon other colours, so as to preclude its use in works of high art. The chromo-lithographers, whose productions are exposed to the continuous action of light in shop windows, can best tell what their experience is as to the durability of indigo; but it will be more to the purpose I have in view in writing, if I were to relate a portion of my own experience, because I feel that the relation is imperatively required to induce the immediate rescue from *father's* deterioration and final ruin of certain works, which constitute in every sense the most valuable public and private artistic possessions of this country in particular, and of the world. It is now some twelve years ago that an ardent admirer and collector of Turner's water-colour works, on taking one of the English and Wales drawings out of the frame in which it had been exposed to the action of light for only a few months, was struck by the novel appearance of a clearly defined marginal band of colour, "fresher" or bluer than the rest, and extending all round the drawing. The fact was, the drawing had been put into a frame somewhat too small for it, and consequently a portion of the colouring had been covered by the "rebate," and thereby protected from the bleaching power of light from which the rest of the drawing had evidently suffered. It was, however, equally evident that the component pigments had faded unequally, from the fact that the faded portion had become decidedly redder than the portion protected by the rebate. The pure bright yellows had gone but little, though perceptibly. The madder lake, as well as the ferruginous reds, remained in all their original power. The proprietor of the drawing to which I have referred decided at once upon what was afterwards proved to be the real cause of mischief, and was thereby enabled to understand how it was that he had so often been perplexed, in revisiting various collections of Turner drawings, by fresh discoveries of red clouds, &c. where he thought he used to see grey ones. An appeal was, however, made to Turner himself, who requested to see the drawing which it was alleged had faded. It was shown to him at his house in Queen Anne-street, in the presence of a gentleman well known to almost every collector of Turner drawings. On taking it into his hand Turner exclaimed, "I will never make another water-colour drawing,"—a resolution which he did not very long maintain. On being asked if he would have the kindness to blend the faded and unfaded portions of the damaged drawing a little, the answer was equally decided and characteristic. "Oh no! if I were to do that I should have all my drawings brought to be restored." He admitted that he still adhered to the use of indigo, having supposed it to be a permanent material. On asking him whether he had not observed that all his early drawings, and those of Girtin, which had been long exposed to light, had become rusty, or what is called fox, in colour, he made no answer, but said, "Well, what am I to use for greys?" The reply was, cobalt. I do not suppose that Turner used indigo from that time. By far the greater part of his drawings have been, however, made with this very fugitive pigment, and I write in the hope that you will exert your influence to induce those who have the care of the Turner drawings, now exposed to view in Marlborough-house, to take such means as may rescue them from certain and not very slow destruction. The writer of this well remembers seeing the series of "River" drawings spread out for his examination on the floor of Turner's dining-room, and believes that in colour they are not now what they then were. It is at least worth while to test the matter by covering one of them for a while with an opaque screen, having a few holes cut in it here and there. On a recent visit to the Manchester Exhibition, I was greatly moved by the unpleasant fact that some of my old acquaintances (Turner drawings, which I had not seen for years) have assumed decidedly new faces. One of the grandest of the English series is changed in such a way, and to such an extent, as to have lost all its value as an authoritative lesson in art. I also take this oppor-

tunity of protesting against a fashion which has sprung up of late years of framing Turner and other well-toned and harmoniously-coloured drawings with a starting stripe of white paper, as a line of demarcation between the colour of the drawing and the gold of the frame. I believe Turner always contemplated the union of the gold of his colour with the gold of the frame, and I know that he enjoyed it, and used to urge the hanging of frames containing his drawings in groups, without intervals between the frames, so that nothing but gold might be seen in connection with the drawing.

Indeed, what but gold can harmonize or not interfere prejudicially with such exquisitely delicate balancing of light and colour as we see in his marvellous works? He knew perfectly how to deal with the eye, either as regards the quantity of pure white, or the quality of his extreme lights: very often no pure white at all, or can be admitted into his composition, and, in such cases especially, none can be brought in contact with it excepting injuriously. But how often do we see the whole of the artists' wisely-planned and delicately executed scheme counteracted by the effect of these white margins. The eye is so unsettled by the glare of these new-light Bristol-board mountings as to be incapable of seeing any light at all in the highest lights of many of Turner's drawings,—lights which, in contact with gold, and in the absence of the white mounting, would have seemed perfectly luminous. I know of no stronger instance of the injurious effects of this frame-makers' fashion, than that of Turner's large drawing of the Wreck now exhibiting at Manchester. I well know how richly harmonious the effect of the colour of that picture is in contact with gold; whereas, in contact with its present abominable white margin, it looks vulgarly "painty," and positively disagreeable. The case of vignettes made expressly for book engravings can afford no valid reason or excuse for this practice, for in them the greatest ingenuity is exercised to break up and render as little obtrusive as possible the lines of demarcation between the picture and its necessary ground, and thereby to lead the eye from dwelling upon the white ground itself.

I hope that no one will conclude, from what I have stated, that water colours are more liable to fade than oil colours, for I have proved, by experiment, that indigo is quite as fugitive, if not more so, as an oil colour; and I have no doubt that this will be found to be the case with pigments generally. That Mr. Turner should have remained in ignorance of facts of this kind, though known to artists generally, is accounted for by the state of extreme isolation in which he was pleased to live, and by his marked repugnance to discuss questions connected with art with his brother artists.

M. I. H.

## THE DISTRIBUTION OF NATIONAL MEDALS.

FROM THE DEPARTMENT OF SCIENCE AND ART.

SOME few months since, the Department of Science and Art announced its intention of awarding annually to the Local and Provincial Schools of Art, in connection with itself, a number of "silver national medals," in addition to the bronze ones usually distributed; and that the directors of the schools should feel an interest in the matter, it was at the same time determined that a presentation of works of art, to the value of 10*l.* should be made to every school, a student of which was successful in the national competition. If I did not, in common with many others, greatly mistake the Department's intention, it was, that, as the local bronze prize was a mark of comparative merit among the works of each school, the silver national medal should indicate the relative standing of the schools themselves. If such was the purpose of the proposers of the new prize, it was undoubtedly praiseworthy, and well calculated to produce the best effects, by stimulating at once the committees, the masters, and the students. But I regret to say that the first distribution, which took place at the Town-hall, Manchester, on Friday, the 9<sup>th</sup>,\* does not lead one to believe that this or any other principle has been acted upon by the gentlemen who awarded the medals.

The greatest number to be distributed in one year is arbitrarily fixed as 100, but the number which may be awarded in one "stage" is not only unlimited, but two or more students of the same school may receive (or rather have received) national medals in the same stage. Thus, there are nine medals awarded in stage 2; and of the five awarded in stage 14, three are taken by the students of one school. But this is not the worst feature I remark. The crowning folly is, that one student is in many cases allowed to compete in two stages. A student of the Manchester school is rewarded in stages 19 and 8; so that if any advanced student resolves to obtain a piece of silver which will be of considerable value as a work

of art, he has only to beat a retreat to the earlier stages of his labour to be tolerably sure of success. I am aware that there must always be many difficulties to contend with in this matter: such, for instance, are the consideration of the student's age and the time which he has studied in the school. In stage 5 the age of the successful competitors ranges from sixteen to thirty-three years; and the time in the school from one year to three years and four months. But if prizes are to be given, some principle must govern the distribution.

The total number of medals awarded this year is ninety-two, and these are very unequally distributed. Whilst the ladies of the Gower-street school, London, take ten, the Metropolitan Training School and the Mine district together take but eleven: the Potteries have as many as seventeen.

Of the works exhibited, very little can be said either in commendation or disparagement. There is the usual predominance of elementary studies, the same wiry outlines, and the same carefully stippled chalks, a square inch of which is considered a good day's work. The advanced works, however, with the exception of elementary designs, are not so numerous nor so generally good as in some past years. Stage 7, "Drawing flowers, foliage, and objects of Natural History from flat examples or copies;" and stage 11, "Painting ornament from the flat or copies," have received no national medals. Stage 14, "Painting direct from Nature," has five medals, four of which are awarded to female students.

I cannot, however, pass stage 23,—"Applied design," without commenting upon the works sent from the Sheffield school. Sheffield is scarcely the district from which one would expect to receive designs for porcelain, yet a student of that school has obtained a medal for designs of cups and saucers: the same student has also obtained a medal for designs of scissors. In one pair, the handles are formed of two human figures, and the pivot works in the interior of a head of "Silenus;" the second has handles formed of grotesque animals with wings. A medal has been awarded to a design of a water-urn, by G. Theaker: this work, notwithstanding it exhibits considerable taste in the execution, is too evidently copied from the worst examples of the modern French school. A design for a water urn, by R. Townroe, has also received a medal. This design, although possessing more of constructive utility, violates every principle which the Department has laid down as essential to be observed: three dolphins, two of which tied together by their tails bite the sides of the third, form the spout: the lid is surmounted by a female figure bearing a cornucopia; and the body is surrounded by six naked youths. Is it not astonishing that such works as these should meet the approval of the Government examiner? But the Department is for ever shifting its ground: what it professes one month it wholly repudiates the next, and a history of the workings of the institution during the past eight years would form a valuable and curious addition to the comic literature of the day.

I now come to the least successful part of the Exhibition—the modelling stages. In these there are but five works: three are from the Potteries, and to each is awarded a national medal. Whatever may be the merit or demerit of these works, if the Department thought them worthy of the distinction awarded them, there is little excuse for the position they occupy. Two are placed on the ground; two more (bas-reliefs of the discobolus) laid flat on a table; and the fifth (a vase), placed in such a position that a view of the interior is the best to be obtained. But this treatment of the models is characteristic, and the purity of works in the modelling stages may be in part accounted for by the little encouragement given to that branch of art by the authorities of the lead school. First, the avowed opinion of the masters in the Training School is, that modelling is an art included in the power of drawing, and, therefore, it is unnecessary to train men specially as masters for that department; thus any man who has taken a certificate for painting has no difficulty, after three months' practice, in obtaining that for modelling. Secondly, the accommodation for modellers is of the worst kind, even in the large schools. In Manchester, the class-room is a back kitchen, or cellar. In Sheffield, it is very little better. In the Potteries, the classes are carried on in a corner of the general class-room, and the same space of about 6 square feet is considered amply sufficient in most of the metropolitan district schools. But I am still unable to account for the total absence of work from the head school. Until very lately the modelling classes there established were provided with two masters, and it seems scarcely possible but that some works have been executed of sufficient merit for exhibition.

The successful candidates of the "National Competition" received an invitation from the Department of Science and Art to attend in Manchester for the purpose of receiving in person the certificates of their

\* See p. 594, ante.



success. About eighty were induced to respond to this invitation upon the terms offered by the Committee of Council on Education, viz. a payment of "3d. per mile, reckoned on the distance by railway of the student's school from Manchester. Thus a student from Birmingham would receive 17. 1s. 3d.; a student from Sheffield, 10s. 6d.; and a student from Exeter, 22. 18s. 9d. If the total expenses of a student exceed the sum allowed, the excess must be paid by such student." Upon such a liberal arrangement it is not surprising that several students came from Ireland for the purpose of receiving their national medals, and it must be a matter of regret that M. Vecthe was unable to complete his work in time for the proposed distribution.

I would now beg to make a few remarks upon the nature of the "102. worth of works of art" given to each school. Nothing would seem more simple than to have made the 102. worth of works of art bear some relation to the staple of manufactures of the town to which they are given. Yet such an arrangement does not seem to have suggested itself to the authorities of the Department. The things exhibited are shields, tazzas, and salvers; but however beautiful these works may be as works of art, they are hardly calculated to improve the taste of the students of the Manchester, Liverpool, or Coventry schools. I believe it is even a question whether these Medieval specimens of metal work, beautiful as no doubt they are, are the best description of prizes for elementary schools of art.

I feel some apology is necessary for employing so much of your valuable space, and I offer it in the statement that this annual distribution of medals costs the nation many thousands of pounds. C. H. W.

#### THE CHAPEL OF HAMPTON COURT PALACE.

To the description of the chapel of Hampton Court Palace, by Mr. A. White, in a recent visit of the Middlesex Archaeological Society, I trust he will permit me to add some particulars, which, I believe, are not generally known.

In the summer of the year 1845, I was engaged in making various surveys and sketches in the chapel of Hampton Court Palace, and other parts of the building. At the east end of the south wall I discovered one of the original stone mullioned windows, in a very perfect state, but without any glass in it; the window was, and I believe now is, cased up between two 9-inch walls: part of one side was sufficiently opened for me to make careful sketches and measurements: within the casing I found many fragments of glass, but none that would indicate that stained glass was largely used in the chapel. At the same period I also surveyed the roof, from a suspended scaffolding and an opening in the boarded vaulting. I took careful sketches of this curious and interesting piece of construction, the whole of which is put together with mortises and tenons, and oak pins; these pins, in part, holding the numerous pieces together. I found several indications of colour and gilding, but certainly not to that extent to warrant the present unsatisfactory taudriness, as a restoration. In the original painting there was no attempt to conceal the material of which the roof is constructed; but the "polychromy" was of that judicious character that relieved the architectural details, defined the construction; and, by leaving portions of the material in its natural state, the evidence was certain that the vaulting was no mere trumpety polychromed plaster, or gimcrack chinaware, but good, solid, honest English oak.

In continuing my survey I ascertained that the gallery at the west end also underwent alterations, under the auspices of the great Sir Christopher. The present gallery floor is considerably higher than the ancient floor, and the panelled walls conceal two good chimney-pieces, strings, mouldings, and other things, which, if opened now, would add another "wonder" at the princely magnificence of the "proud prelate."

Sticklers for ancient precedent will be, perhaps, somewhat surprised to find that many of the ornaments used in the state rooms are made of a composition something like papier mâché, and that the leaves at the junctions of the panelled ceiling of the staircase, and in other places, are stamped in lead.

No doubt many drawings exist of the palace in its original state, before Sir Christopher Wren mercilessly swept away so much of this once stately and extensive building. It is to be regretted that his great skill and talent were not in this instance directed by better taste; that he, who must have studied the works of the Medieval architects, did not endeavour to blend his architecture with that of the cardinal, and, without copying, unite harmoniously the two periods: then would he have handed to us *progression*, and not *retrospection* in our art: then would he have followed a Medieval example worthy to be followed.

There are still many interesting and instructive parts of Hampton Court Palace but little known, worthy of careful examination—things that I have now nearly forgotten—as my sketches and notes are not in my possession; and a continual examination of the ancient architecture in many parts of the country, and the distance of time, have, in some measure, obliterated many gems of the old palace which ought to have been better stored in my memory; yet, in spite of Mr. Ruskin's invective against "Perpendicular," and archaeologists' tirade against "debased" art, there is much to be learnt by the study of the architecture of the period of Hampton Court Palace.

E. B. L.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE session will commence on the 2nd of next month, and the honorary secretaries have addressed a circular to the members, inviting them to contribute papers, or information in another shape, to the general meetings. They say:—

"If, as is highly probable, you may have recently made some particular subject your especial study, or if, and is not less likely, you have been engaged upon the design and superintendence of some works involving novelties in architectural composition or construction, you would be conferring a benefit upon the profession at large by the communication to the Institute of the results of your study in the one case, or your experience in the other."

In these days, when new styles of art, new building materials and appliances, and modifications of old ones, are being constantly brought into use, the records of individual experiment are of growing importance; and we trust that you may take occasion to communicate to the Institute such conclusions as you may have arrived at with respect to their value, either by theoretical investigation or actual practice.

We find occasionally that architects have withheld valuable papers from an apprehension of the necessity of preparing elaborate diagrams. Such apprehensions need not be entertained, as we have found that papers are generally best illustrated by sketches and the working drawings from which important buildings may have been executed."

As these observations apply as well to those who are not members as to those who are, we give them the publicity of our pages, in the hope of inducing contributions to the general stock of information.

At the opening meeting of the session a paper by Mr. Wyatt Papworth will be read, "On the Introduction of Deal, and of Painting (woodwork), into this Country."

#### MEDWAY UNION WORKHOUSE COMPETITION.

THIS competition appears to offer another illustration of the necessity for immediate co-operation by the profession generally, to ensure a more satisfactory position than is usually awarded to architects who may feel induced to devote their time and experience to future competitions of a similar nature. It will be in remembrance that an advertisement appeared in the *Builder* of January last, inviting architects to send in plans and specifications, together with detailed estimates, for the erection of the new workhouse for the Medway Union, according to instructions prepared by the Board of Guardians, and in accordance with the requirements of the Poor Law Commissioners. This advertisement also stated the intended outlay was not to exceed 11,000*l*. Thirty-one sets of designs were accordingly submitted for the approval of the guardians, when the first premium was awarded to Messrs. Peck and Stevens, and the second to Mr. Edward Holmes. Some idea may be formed of the importance that was attached to the printed instructions, by the fact that the lowest tender for the erection of the design for which the first premium was awarded was exactly double the amount of the contemplated outlay, namely 22,000*l*. Thus situated, the guardians abandoned the idea of proceeding with the design of Messrs. Peck and Stevens, and wrote to Mr. Holmes, asking him if he were prepared to guarantee that his plan could be carried out for the stipulated sum. The architect requested a fortnight to prepare estimates, at the expiration of which time he waited upon the Board with a guaranteed estimate from a highly respectable builder, that the work could be done for the sum of 12,000*l*. Mr. Holmes was informed, however, after having been put to much expense and devoting a whole fortnight in getting out the quantities and preparing the estimates, that his guarantee would not be required. He, however, received a communication from the Board of Guardians on the 2nd of September, inviting him again to compete with Messrs. Peck and Stevens, the guardians being desirous of reducing the accommodation from 750 to 650. He of course protested against this procedure on the part of the guardians, and endeavoured to awaken them to a sense of the injustice they were doing him, but without effect. Messrs. Peck and Stevens have accordingly submitted new designs, which have been laid before the Poor Law Commissioners for their approval, Mr. Holmes declining to compete a second time.

#### NEW ROYAL ITALIAN OPERA-HOUSE, COVENT GARDEN.

*Resurgam* has been the fulfilled motto of Covent Garden Theatre, and, as our readers know, Mr. Gye intends to carry on the tradition. We have already published some particulars of the intended new building, and have now the pleasure of giving a view of it.

Covent Garden Theatre, as erected by Mr., now Sir, Robert Smirke, occupied the site of one that had been burned down. The first stone was laid on the 31st of December, 1808, and the theatre was finished in nine months from that time. On the 2nd of December, 1846, Mr. Albano commenced the entire reconstruction of the building, and produced a fine interior, of which we gave an engraving in our volume for 1847.\* On Wednesday, March 5th, 1856, this shared the fate of the earlier building, and was burnt to the ground.†

The Opera-house, which has now been commenced for Mr. Gye, is to occupy a portion of the site of the old theatre, and that of several houses at the rear. The remainder of the site will be devoted to the purposes of a flower-market, the probable elevation of which is suggested in our view, although the design is not yet fully decided on. The portico (hexastyle; Corinthian) faces towards Bow-street, and we believe it is not intended to complete this portion of the work until after next season. The grand entrance is under the portico, the lower story of which will be used as a carriage-porch, enclosed with glass, while the upper portion will be available as a promenade, in connection with the Crush Room. Entrances to the gallery, upper boxes, and stalls, are in Hart-street, but the pit, boxes, and stalls can likewise be approached by the grand entrance. An entrance to the theatre will be also provided through the flower-market, and a balcony is contemplated, to overlook the latter, in case it should be thought desirable to use it as an adjunct to the theatre. Her Majesty's private entrance will be in Hart-street, by a separate staircase, anteroom, &c. A private entrance and staircase for the Duke of Bedford will also be provided. There are separate staircases to the various parts of the house, and well-holes and winders are avoided in every case. All stairs and corridors are to be fire-proof. The supports of the boxes are to consist of wrought-iron cantilevers, resting on cast-iron columns at the back of the boxes. The house will be larger than that destroyed by fire, and will be so constructed that the stage and the auditorium can be thrown together whenever desired for banquets or balls. The accommodation generally will be on a more liberal scale than in the old house, and each tier will possess retiring-rooms, and other conveniences. The roof is to be of wrought-iron, covered with slab slate; the floor girders will be also of wrought-iron. The ceiling of boxes and auditorium will be formed of fire-proof fibrous material; and the wood, which will be very sparingly employed, is, we understand, to be rendered fire-proof by a process belonging to the lessee, Mr. Gye. The works are rapidly progressing, the walls being nearly up to the ground level.

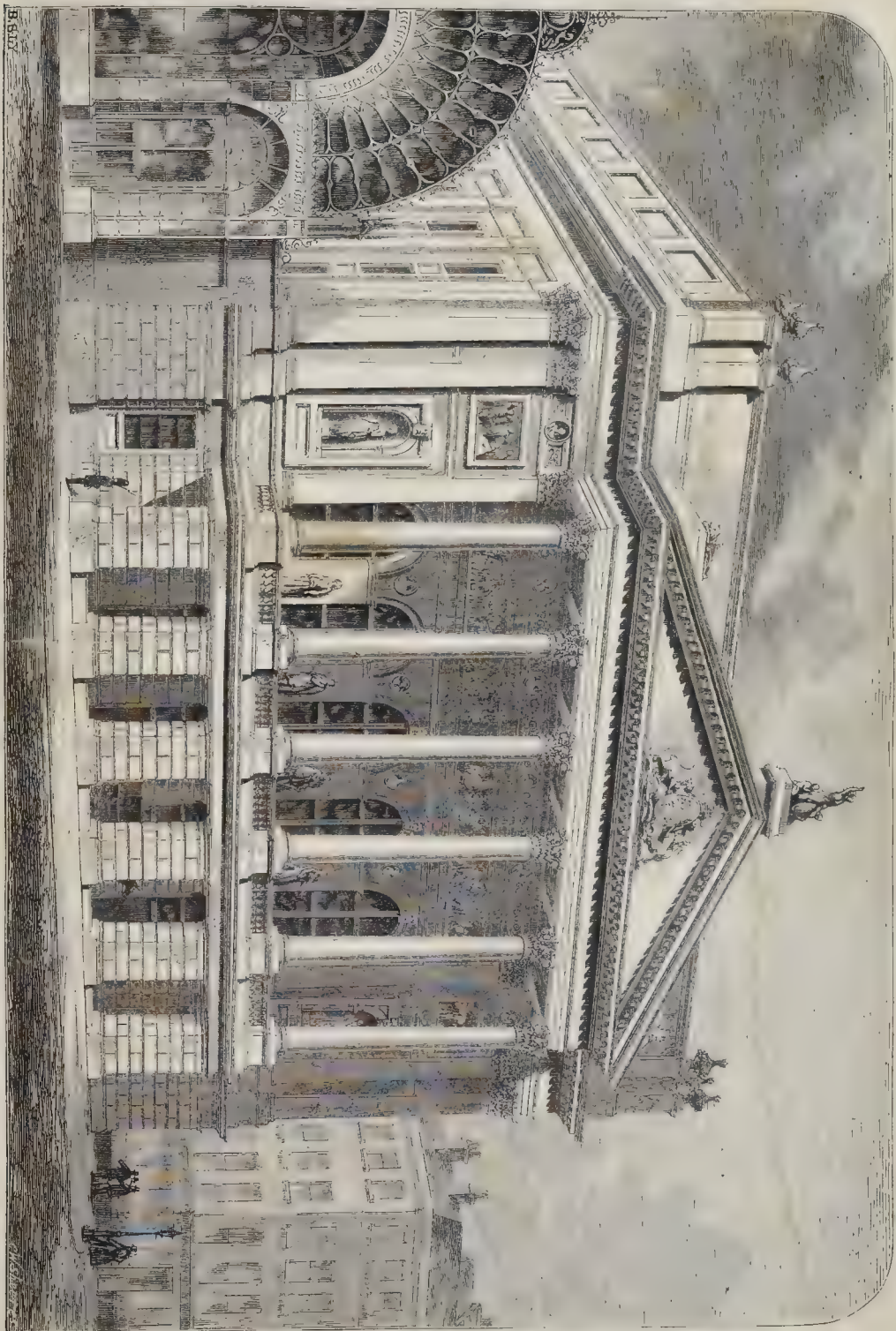
Mr. Edward M. Barry, of Old Palace-yard, is the architect, and Messrs. Lucas (Brothers), the contractors. Messrs. H. and M. D. Grisell, are the sub-contractors for the iron work, which forms a large portion of the contract. Let us add that the bas-reliefs under the portico, and the statues on each side of it, are the well-known works of Flaxman from the old theatre. It is fully intended that the theatre shall be opened next season, and we cordially wish Mr. Gye that full measure of success that the skill, taste, energy, and liberality with which he has so long catered for the gratification of the public, so well deserve.

THE PAVILION DESIGNS, BRIGHTON.—The selection has not yet been declared, and writers are still calling on the committee to obtain the aid of a professional man before coming to a decision.

\* Vol. V., p. 165. The view and particulars are also given in "Buildings and Monuments, Modern and Medieval," by George Godwin, together with some observations on Acoustics, as applied to theatres.

† An elaborate inquiry into the still unknown cause of the disaster will be found in our volume for that year.





NEW ROYAL ITALIAN OPERA-HOUSE, COVENT-GARDEN.—MR. EDWARD M. BARRY, ARCHT.







## CHURCH-BUILDING NEWS.

**Bosley.**—The parish church has recently been restored and reopened. The old high-backed pews have been replaced by open sittings. A new pulpit, &c. has also been erected, the walls scraped and cleansed, and the dilapidations in the windows, roof, and other parts of the building renovated. The expense has been defrayed by subscription. Mr. Balmer, of Maidstone, was the architect, and the work has been executed by Mr. Thompson, of the same town, builder.

**Oxford.**—The chapel of Balliol College, which has been recently rebuilt under the superintendence of Mr. Butterfield, and just now brought to completion by Messrs. Ruddle and Thompson, of Peterborough, builders, was opened on the 15th inst.

**Marston.**—The foundation-stone of a new church at Gear Hill, near this place, was laid on the 12th inst. The architect is Mr. Butterfield, and the builders are Messrs. W. Brown and Sons, of Frome.

**Monaghan.**—The new Free Wesleyan Church erected in this place by those who seceded from the Conference party, about the time that Messrs. Dunn, Griffith, and Everett were expelled by the Conference, has been opened. The chapel (land inclusive) cost nearly 350*l.*, according to the *Cavanish Telegraph*, and is now about 200*l.* in debt. It was built chiefly by subscription. It is erected on an elevated spot (Tregoney Hill).

**Nechell's Green (Birmingham).**—The new church of St. Clement's, with its accompanying schools, has been commenced, and towards the close of this month, according to *Aris's Gazette*, the foundation-stone of the church will be laid by Lord Calthorpe. The architect is Mr. J. A. Chatwin, of Birmingham, and the builders are Messrs. Branson and Gwyther. The church will be in the Geometric style of Gothic architecture, and will be cruciform in plan. The nave will be 93 feet by 23 feet, and the chancel 22 feet by 20 feet, with proportional transepts and aisles. It will have a small spire, 66 feet high. There will be galleries in the transepts. The roof timbers will be exposed, and the chancel roof boarded. The church will accommodate 852 persons, and 452 of the seats are to be free. The cost of the building, including spire and boundary-walls, is 3,200*l.* The schools will cost 2,400*l.* To complete these works, 800*l.* are required. The site for the schools was purchased in 1851; that for the church, together with a large garden, has been given by the Birmingham Church Society.

**Derby.**—The new chapel recently erected by the Wesleyan Reformers of Derby, in Beckett-street, has been opened for Divine worship. The building is calculated to afford accommodation for 500 persons, and has been reared at a cost of about 1,800*l.*, including the site. Messrs. Giles and Brookhouse, of Derby, are the architects, and Mr. Porter the builder. The chapel is 60 feet long and 45 feet wide. The elevation is of a plain Italian character, faced with bricks and stone dressings. School-rooms and vestries, with requisite conveniences, are attached at the back. The heating is effected by the introduction of fresh air passing round hot flues, and admitted into chapel through iron-gratings in the aisles. The ventilation is formed by means of a large shaft attached to an ornamental open centre-piece in the ceiling, and to a flue in the chimney-shaft, heated from the furnace flues, under the direction of Mr. T. Hall, engineer, Derby.

**Leeds.**—The east window of the church of St. Luke, at Leeds, has just been enriched with stained glass, designed and executed by Mr. F. Barnett, of Leith, who has also been engaged in a similar work in the church of Holy Trinity, in this town. The window, as described by the *Intelligencer*, consists of three Early English lancet lights, the centre one containing medallions of the Crucifixion and the Ascension, on mosaic ground, the intermediate spaces being filled in with mosaic and geometric patterns. The north light contains a full-length figure of St. Luke, in a panel interwoven with the geometrical design. The south light contains a similar figure of St. Paul, on a similar ground. The draperies of these figures vary in colouring, and are both diapered. Around all the lights foliated borders run,—that in the centre compartment being a continuous scroll, with green and purple leaves on blue and ruby ground. The side borders consist of the English rose with conventional foliage, on azure ground. The same artist has completed two windows of single lights in the church at Scaerott, in this neighbourhood. The subjects are the Baptism of our Lord in the river Jordan, and the Last Supper, in Early English mosaic ground.—The window at Trinity Church was inaugurated with Masonic ceremonies, to the memory of a late brother, Charles Lee, of this town, for many years Deputy Provincial Grand Master for West Yorkshire. The window is at the west end of the south aisle, next Boar-lane. It measures 9 feet 6 inches in length, by 4 feet 8 inches in width, and the head is semicircular. It has been executed from a design by Mr. W. Perkin,

of Leeds. In the centre is a figure of Sanctus Johannes, the Patron Saint of the Order, who holds the Bible in his right hand, and the square in his left. He is entering the porchway of the temple, on each side of which are two pillars supporting the royal arch, with the monogram J. H. S. forming the key-stone. Above the figure is a circular compartment with the "All Seeing Eye," the Bible opened at 2 Chron. and the square and compasses laid thereon. Below the figures are three medallions. The floor of the porch is laid with mosaic pavement, and the working tools are grouped thereon. The window is surrounded by a border composed of an endless chain, and radiating ribbon of blue and red, and encircling the border are words, "Let there be light, and there was light;" also "Brotherly Love, Relief, and Truth." In the bottom of the window there is a slab of black marble, on which is engraven, in gold letters, the inscription.

**Baldersby.**—Of the church of St. James the Apostle at Baldersby, lately opened and consecrated, fuller details have been forwarded to us than those in our previous notice. The edifice, as already noted, is in the Early Decorated style of architecture. It consists of a tower, placed on the south side of the western extremity of the south aisle of the nave, 160 feet high, of which the spire is 72 feet; a nave with aisles, 75 feet by 40 feet; a chancel, 35 feet by 19 feet; an organ-room on the north side of the chancel; a vestry east of that; and a heating department beyond the chancel-aisle or organ-room. The tower also forms the porch, which is groined. In the north-east angle is a circular staircase leading to the bell-ringers' room, which is lighted by a window of two lights in the west wall. The spire is pyramidal in form, and ornamented with bands representing scales inverted. The nave is divided into aisles by clustered piers supporting on each side five arches. The windows are all according to the Early Decorated style, and are slightly varied. A double *vesica piscis* window lights the eastern extremity of the south aisle. At some future period it will be filled with stained glass. The two tall windows in the west gable, and the wheel window above them, are from the works of Mr. Wailes, of Newcastle-on-Tyne. The wheel window has an *Agnus Dei* surrounded by winged angels. The lower windows display the armorial bearings of the founder (the late Viscount Downe) and others. The east window of the choir is of three lights terminating in geometrical tracery. The stained glass, representing the "Transfiguration of Christ," is by Mr. O'Connor, of London. The two side-lights in the south wall of the chancel are at present covered with calico—the stained glass not being ready for them. A low stone screen separates the chancel from the nave. It has a gate of scrolled iron-work in the centre. An iron screen separates the organ-room from the chancel. The pulpit is of carved oak, on a base of stone. The seats in the choir for the officiating clergy and the choristers are carved. On the floor in front of these seats is a memorial of the founder. It is a slab of white marble inlaid with brass.

The chancel up to the bases of the windows is lined with alabaster, and under the east window is a carved reredos of the same material. The floors are of Minton's decorated tiles mingled with the fossil-spotted grey marble of Derbyshire. The roof of the chancel is not finished, but is to be coloured in appropriate devices. The walls throughout the church are lined with bright red brick, relieved at intervals with lines of Huddlesstone stone, on which are introduced trefoils, quatrefoils, and other patterns. In the centre aisle of the nave, near the west wall, stands the font, resting on marble pillars of various colours. The basin is white marble inlaid with other colours; and the top rim is of grey marble. The architect was Mr. Butterfield, and the builder, Mr. R. H. Norris, of London. The stone is of three kinds, Huddlesstone, Bramley-fall, and Rainton; whilst the covering tiles are from the works of Hutton Moor, near Ripon. The parsonage-house stands to the north-east of the church, grouping with it. The school building consists of school and class rooms, and master's house and offices. Some almshouses are to be erected on a site west of the burial-ground. The ground upon which the church and its appendages have been erected formed part of a farmstead called Baldersby-brooms, in the parish of Topcliffe-by-Swale.

**Kirkbure (East Riding of Yorkshire).**—The church at Kirkbure, near Driffield, has been restored and re-opened. Under the plans of Mr. Pearson, of London, architect, the works were commenced in the summer of 1856. The old porch was taken down, and a new one has been erected in its place. The chancel, which had been reduced and partly rebuilt in 1819, and windows of a different character inserted, was also taken down, and a new one extending 15 feet further east has been built in keeping with the remainder of the church. A new vestry has been added to the north side of the chancel. The nave has been new roofed and carried up to the original

pitch. The roofs are slated, tile ridged, and the gables surmounted with crosses. The old walls have all been pointed, and the decorations touched up and restored. The doors and windows in character with the original church are circular-headed, and the mouldings are enriched with the chevron or zigzag, billet, block, lozenge, beak's head, and other ornaments peculiar to the Norman style. On the south side of the nave are two pointed windows, the incongruous insertions of a later period, which have been allowed to remain. The principal entrance on the south has four mouldings, principally chevron, and the label is enriched with men, beasts, birds, and fishes. Some think it is intended to represent the twelve signs of the zodiac. Most of the windows have small attached columns. In the east end of the new chancel a Catherine-wheel window has been introduced, with irradiating tracery. Extending round the nave and the chancel is a block-corice with corbels, principally representing human heads in the most grotesque positions. Round the chancel are strings of billet and lozenge ornament. The interior of the church before its restoration had a very primeval appearance. The walls are of immense thickness, and the openings of the windows narrow, but gradually opening inwards. The most striking object is the arch between the nave and the chancel, which is of considerable span. Above this arch an arcade of three lights has been introduced. An old pointed arch in the tower has been opened out. All the old wooden furniture of the church has been removed: the pews have been replaced with stalls, which with the reading-desk and altar-table are of oak. A new stone pulpit, in Caen stone, has been placed near the chancel arch, and the floors have been laid with encaustic tiles. The church is ventilated, and warmed with hot air. The roofs are open to the ceiling with stained timbers. The churchyard has been lowered and levelled, and new walks have been made. The mason and joiner's work has been executed by Messrs. Simpson and Malone, of Hull. Mr. Emery acted as clerk to the works. The repairs and restorations have been estimated to cost 2,500*l.* Of this sum 1,500*l.* are borne by Sir Tatton Sykes, and the rest raised by voluntary contributions and a church rate.

**Middlesborough.**—The foundation-stone of a chapel at Tees Tillery, near Middlesborough, was laid on the 12th inst. The ground upon which the chapel is about to be erected was given by Mr. B. Samuelson, who also bears a part of the cost of its erection. Mr. Cawthorne, of the Tees Tillery, having contributed the whole of the bricks required.

**Carlisle.**—Mr. Willis, the organ-builder, and his assistants, have commenced the manipulation of the instrument in Carlisle cathedral, and are now busily engaged in removing the dust which has accumulated in the pipes. Nearly the whole of the dirt had entered the pipes during the restoration of the building. It is intended to apply hydraulic power to the bellows, but the present hand-power will still be kept in reserve. There is to be a cistern capable of holding 1,500 gallons of water, the daily consumption being estimated at 800 gallons. The men are now engaged in laying the necessary pipes, the flags in the south aisle being taken up for the purpose.

## PROVINCIAL NEWS.

**Oxford.**—The fountain at the Infirmary is now completed, according to the local *Herald*. It will be useful to the Infirmary in flushing the drains, and as a reservoir for use in case of fire. The basin of the fountain is 28 feet in diameter from out to out, and has in the centre a circle of rock-work, about 5 feet high and 5 feet in diameter, surmounted by a figure of a Triton, 6 feet high, modelled by Mr. Bell, and executed in one piece of terra cotta by Mr. Blashfield. The original from which this statue was taken is at Rome. In case future subscriptions should go beyond the amount required for defraying the expense of the fountain, they will be applied, says the *Herald*, towards lowering the front wall, &c.

**Sunderland.**—The Town Council of Sunderland, having requested the borough engineer to prepare estimates for public drinking-fountains, Mr. Crozier, the engineer, has reported that they may be provided for five pounds each.

**Wearmouth.**—The Town Council of Sunderland have resolved to advertise for estimates for the execution of the alterations about to be carried out on Wearmouth-bridge, under the superintendence of Mr. Robert Stephenson, C.E. The leading feature of the plan is the widening of the bridge, 34 feet being to be added to the carriage-way, and 2 feet to each of the footpaths. The levels will be materially altered. During the progress of the alterations, a temporary bridge, 12 feet wide, will be formed on each side of the present structure. The cost of the whole will be about 20,000*l.*

**Morpeth.**—The trustees of the Grammar School of Edward VI. recently held a special meeting to con-



sider the different tenders sent in for the erection of the new school and master's residence. There were eight tenders, varying in amount from 1,680*l.* 7*s.* 6*d.* to 2,594*l.* 3*s.*; and that of Mr. John Fulton, of Hutton-le-Hole, amounting to 1,680*l.* 7*s.* 6*d.* was accepted, subject to certain conditions. The architect is Mr. Ferrey (who was also architect of the church of St. James, recently built at Morpeth). The site of the new building is a piece of sloping ground on the northern border of the town, lately purchased by the trustees from the Earl of Carlisle. The Gothic style of architecture has been adopted.

#### PROGRESS IN SOUTH AUSTRALIA.

The population of this thriving colony in 1850, was 63,700. At the close of 1856, according to an article, in the *South Australian Register*, on the state and progress of the colony, the population had increased to 104,700. In 1850 there were 108 manufactories, of different kinds, in the province: in 1856 the number had risen to 228. In 1850, there were twenty-seven flour-mills; in 1856, seventy, whilst the actual mill power had advanced in a still higher degree. In 1850, the total tonnage of shipping visiting Port Adelaide was 86,583 tons: in 1856 it was 106,741 tons. The imports of 1850 (retained for colonial consumption), amounted to 12*l.* 17*s.* 4*d.* per head of the community. The corresponding imports of 1856, amounted only to 10*l.* 9*s.* 11*d.* per head. The exports of colonial produce, in 1850, amounted to 545,039*l.* or 8*l.* 11*s.* 1*d.* per head of the population; in 1856, to 1,364,904*l.* or 12*l.* 14*s.* 11*d.* per head of the population. In 1850 there were (including rooms for preaching), 142 places of worship, calculated to accommodate 20,173 persons, the actual average attendance being 14,463. In 1856 the number of places of worship was 218, adapted to accommodate 34,459 persons, of whom 23,713 were calculated to be in attendance. In 1850 there were sixty-six Sunday schools, and 3,354 scholars; in 1856, 130 schools and 7,622 scholars. The Government day-schools, in 1850, were sixty-four in number, with 1,867 pupils, educated at an expense to the State of 1,556*l.*; in 1856, they were 147, with 6,516 pupils, at a charge of 8,979*l.*

We have not much news as to new building operations from this colony by last mail.

A new Roman Catholic College has lately been erected at Clare. It is large and commodious, and entirely built of stone, with gardens and grounds leading up to it. The building at present consists of a study, hall, dormitory, chapel, and dining-room, and apartments for professors, but it is intended during the ensuing year to carry up one wing of the building one story higher, in order to give increased accommodation.

There are at present two lines of magnetic telegraph in operation, of an aggregate length of about forty miles, the line from Adelaide to the Port and sea-coast (eleven miles), being opened on February 18, 1856, and the north line to Gawler Town, including a branch to the Dry Creek Stockade (twenty-nine miles), was commenced in the middle of January last, and opened on the 14th of April. A small station has been erected at Gawler Town. During the ten and a half months that the Port line was in operation last year, 14,738 messages were transmitted, and in the first three months of the present year, 7,253. The sum of 20,500*l.* was voted by the late Legislature, for the erection of the South Australian portion of a line to connect Adelaide and Melbourne, and contracts have been entered into for carrying out the work. Ten miles of submarine cable are to be laid under Lake Alexandrina and the Goolwa channel, to connect Goolwa and Pelican Point of Lake Albert Peninsula. Lines are in course of erection between Melbourne and Sydney.

#### THE CRYSTAL PALACE AS A TEACHER.

REGRETTING that so little use, comparatively, should be made of the wonderful collection of examples brought together at the Crystal Palace, we have urged, on more than one occasion, the desirability of arranging for the delivery of occasional walking lectures on the various branches of knowledge there illustrated. The editor of the *Railway Record*, impressed with the fact that the great mass of the visitors have no adequate conception of the historical or artistic value of the works which the company have been at so much pains to bring together, is making the same suggestion, pointing out how much information would be given by the "untechnical and free commentary of a man of judgment and taste who should walk through any special department of the building, and, with such graces of conversational discourse as the occasion might suggest, point out and dwell upon the peculiar works most fit to be admired; and, by adorning his lecture with such decorations as history and biography supply, awaken an interest in the æsthetics of the

Crystal Palace, and thus provoke the desire of a more minute acquaintance with its varied contents. To meet this, it would be the duty of such a lecturer to point out by names the books which have been written on the literature of a period, and the like; to recite some stirring ballad, or fix the attention on some bright act of the hero of any age, as a point from which all future acquired information connected with the subject of his discourse would radiate as from a centre; and we may rest assured that the light though studied words of such a teacher would not float upon the air in vain, but, resting at length upon the virgin soil of many a young brain, would be certain to bring forth fruit in due season."

We hope before long to see what so many are desiring carried into execution.

When we were last in the Crystal Palace, 23,000 persons were gathered together under its wonderful vault, on the Fast Day, to hear an earnest preacher. It was a sight that will not soon be forgotten by those who saw it. We mention it mainly to note that all the arrangements within the palace were excellent, and reflected the greatest credit on Mr. Grove and the other officials.

#### ON TRACING CURVED TUNNELS.

Your correspondent, Mr. Isaacs, appears to imagine that the common formulae used for tracing an ordinary railway curve on the surface will do equally well for fixing the points of a tunnel.

I, for one, should not much like to have the responsibility of constructing a curved tunnel, if obliged to set it out by the method proposed in your correspondent's article. It is perfectly true that the rule is easy to calculate, and equally easy to manipulate on plain ground: there would be no difficulty in using it to trace a curve on Newmarket heath, or Doncaster Race-course, or on the ordinary lie of country usually selected by engineers for a line of railway; but this, my practice tells me, is a very different affair from tunnelling. I did not send the method pointed out in my article, as one claiming any pre-eminent merit, but as being one by which several curved tunnels had been actually set out, and successfully executed, and that too, under very difficult circumstances: my object was merely to put on record the method adopted by myself, and fellow-labourer, Mr. J. T. Hay, in the practical execution of several curved tunnels, which fell to our lot on the Continent.

Nearly all the known methods, or proposed methods for tracing railway curves of any kind, were examined and considered. There are plenty of mathematical conundrums published for this purpose, all professing to be very good; but after examining the merits of most of them, they were passed by as useless for our purpose. The method proposed in my article was worked out, and considered to be suitable to our circumstances, and was therefore adopted. No doubt there may be others much better, but if so, I have not had the good fortune to meet with them, nor, indeed, have I ever, to my recollection, seen any method proposed, in print, for tracing curved tunnels.

Your correspondent asks, what is the advantage of the method pointed out in my letter. The first advantage to my notion is, that it has been both practically and severely tried,—and was not found wanting: it has therefore the advantage of not being a mere theoretical problem proposed for consideration, but a method practically employed in the actual execution of several tunnels of sharp radius.

Another advantage I think is, that it affords an instrumental and mathematical check on the measured tangential lines and offsets to the axis of the curve—one mutually assisting to check the other, which is certainly not the case on the common tangential method of setting out a curve. I consider this a very useful advantage in practice.

The country where these curved tunnels were executed was exceedingly mountainous and rugged, and I feel tolerably well assured that no sane man, having the responsibility of such works on his shoulders, would have ventured to set them out and keep them in operation by what your correspondent seems to call the common method of setting out railway curves. From the nature of the country, even the straight tunnels could not have the assistance of an observatory to set out the lines, because we could find no place in the mountains whence the two ends of the tunnel could be seen; consequently crows' nests and observatories, with transit instruments, did not figure as prominent features in the works, to excite the curiosity or admiration of the gaping multitude of *gobemouches* in their neighbourhood.

It is usual to have a fixed observatory, with a transit instrument, in the construction of tunnels, to prevent any mistake in the lines or deviation from the axis of the tunnel. I believe most engineers adopt this method, to keep things safe and sure. If, therefore, good instruments are thought necessary in a straight tunnel, how much more are instrumental checks

necessary in curved ones, especially, too, when there are several shafts on the line of work.

If your correspondent were to trace the surface line of curve on the ground by the method he proposes, I think he would find it a very difficult matter in practice to trace a corresponding curve under ground, so that one should be exactly vertical to the other; which must be the case to work the tunnel correctly, and keep the central axis of the shafts in the same vertical plane with the axis of the tunnel. In ordinary ground this would not be an easy matter in practice, but in rugged mountain districts, like the Cevennes, it would be exceedingly difficult: it is one thing to draw these curves on a sheet of paper glued on a board, but quite another to trace them over a series of gulleys and ravines, encumbered, as in our case, with multitudes of stone walls in the shape of artificial terraces, for the purpose of utilizing every scrap of soil for vineyards.

It was a matter of no ordinary difficulty to trace a straight line over these gullies and terraces, much less to trace an accurate curve without an instrument, both carefully and anxiously handled. Had your correspondent been occupied with the responsibility of these tunnels, I think he would not have trusted to the common method of tracing curves on the surface of the ground, for curves which had to be accurately traced many yards into the rocky bowels of our mother earth.

In the latter part of my article, your correspondent will find that I have actually noticed the common method of tracing curves, and alluded to it as a means of putting in a few intermediate stumps, if required during the progress of the works, though in the tunnels in question it was never made use of, as the trigonometrical points given by the method indicated were found sufficient.

Most of the schemes concocted for the purpose of tracing curves are modifications of each other, and may be reduced at last to the same principle and expression.

Some gentlemen have written whole pages to prove themselves the inventors of the method they advocate, but they are mostly new combinations of old forms of algebraic expressions, the original inventors of which had "gone where all good niggers go," long before railways began to "itch the world with noble homeliness."

This being the case, I do not claim to be the "sole inventor" of the method I have ventured to recommend and apply, nor do I know who is. I suspect it is that illustrious person known as "nobody,"—for, like the electric telegraph, it is no one person's invention, but made up by patchwork bits from many sources, neatly dovetailed together to make a practical scheme: it bears a strong family likeness to the "common" method, slightly married to a method that may perhaps have been at the time a little uncommon, the two together thus producing a very useful bantling.

I repeat that I do not pretend to claim for the method explained in my article any wonderful or pre-eminent merit: I sent it for publication not as a mathematical theorem, or trigonometrical conundrum, but as a practical method by which several curved tunnels had been not only accurately traced on the ground but successfully executed,—and this, after all, is an advantage over mere theorems, however pretty on paper.

I may here observe, that these tunnels were constructed with "side shafts," so that the axes of the shafts were not sunk in the axes of the tunnels: this was a matter calling for a little extra care in the setting out, to keep all the lines in their true position, so that the curve of the tunnels should not be broken-backed.

While on the subject of curves, perhaps the following rule may be useful to some of your young readers, as it requires neither algebra, trigonometry, nor logarithms: it is not a bad approximation for "common" work, and may be called a rule of thumb.

Rule.—The square of the tangents in chains, multiplied by the constant 33, divided by the radius in chains, will give the offset in feet and decimals of feet, which may be thus concisely expressed—

$$\frac{T^2}{R} \times 33 = \text{offset.}$$

If now we refer to a book of tables containing the offsets calculated according to the "common" method, we shall be able to compare the results given by this short rule of thumb.

Let the radius of curve be ten chains, the length of tangent two chains, we shall find the offset per table to be = 13.20, and by the rule above given we have— $\frac{T^2}{R} \times 33 = \frac{4}{10} \times 33 = 13.20$ , the same as by the tables.

Your young readers may amuse themselves by comparing it with any of the other formulae given by various writers for finding the offsets for tracing the points of railway curves.



Who the inventor of this rule may be I know not, and care less: it was given to me by a brother chip under a stormy day, while munching bread and grapes under the shelter of an unfinished culvert, during a pelting shower of rain, at Valstrouche, Hérault, France. He gave it to me, as being easy to carry in the head, and a good 'un to go, when idle, in a hurry, or not "scientifically" disposed to dabble with trigonometry and logarithms;—but mind, my learned friend did not say it was to be used for working curved tunnels, although it is an uncommonly common method.

JOSEPH LOCKWOOD.

#### FAILURE OF PIPES AND RESERVOIRS.

THE state of the Nene Valley drainage works is exciting some alarm. Mr. R. Stephenson, being called upon to report on the subject, has said,—"I think it essential to make a suggestion as to what should be immediately done to avert disasters which may at any period during this season of the year overwhelm the adjacent lands. The proper spirit in which this question should be approached by all parties affected should be, merging all Nene Valley drainage questions and the conflicting interests incidental thereto, to view it rather as if a great calamity were imminent, against the consequences of which all parties should most strenuously combine to provide a remedy. . . . The two main sources of danger are of course—first, the land floods; secondly, excessively high sea tides. . . . In my opinion, the proper course would be to construct at or near the proposed bridge at Wisbech a strong substantial wooden stanch, with two self-acting tidal gates opening seawards, with an aggregate waterway of 50 feet, and provided with slackers of sufficient dimensions to admit tidal waters. . . . The first cost of a stanch of this description cannot be safely estimated at less than 3,000*l*."

We have reason to believe that the danger is imminent.

Last week alarm was excited in the neighbourhood of the valley lying between Cowley-hill and Denton's-green, by the bursting of one of the huge Rivington water pipes, by which Liverpool is supplied. All the small brooks, ponds, and ditches in the neighbourhood were soon overflowing, and in two hours there was an extensive river of about 200 yards wide, covering potato, pasture, and stubble land, and reaching past Denton's-green-lane to the brook, upgraze of half a mile. Some idea of the force may be imagined when it is known that the pipe burst underneath, and the water threw up the earth, sand, and soil, and carried it away, leaving a hole of 11 feet 6 inches deep, and 48 feet by 36 feet 9 inches wide.

A few months ago we expressed objection to the mode in which some of the reservoirs in the north for new water were being constructed, and we were blamed for endeavouring to excite alarm. We hope, nevertheless, that it led to extra precautions, and, moreover, that engineers in charge will keep an eye on the embankments.

#### CONSTRUCTION AND USE OF THE TURKISH BATH.

As there has been much talk lately about Turkish baths, and whether it is possible or desirable to bring them into common use in this country, and as we know that there are most erroneous notions prevalent with respect to their cost and comfort, a short account of a visit to one recently constructed at South Preston Cottage, North Shields, may possess some public interest.

The residence is one very common among the middle class in this country,—a small dwelling-house, surrounded by a garden, and having a vineyard attached to the house. Behind this vineyard is a small oblong apartment, 8 feet high, about 16 feet long, by 6 feet wide. At one end of this a furnace is constructed outside, and a flue, 10 inches by 12 (in height and breadth), carried beneath the floor, composed of flat red tiles: a brick partition was thrown across, including a small wooden door; the walls are furnished with ventilators, and a small aperture is in the chimney to carry off the over-heated air. Thus, at a cost of from 10*l*. to 20*l*., and with two or three hours' firing, the fuel costing about 4*d*. you are able to obtain and maintain, for twelve hours, a heat in the inner apartment varying from 120 to 150 degrees, and in the outer from 60 to 90 degrees, two hours being the usual time to complete the processes. On a fine clear, cold, rather frosty night, just as the moon was rising above the trees, robed in the bath dress, a loose flowing cape reaching to the knees, we were conducted by our host from the vineyard (with its sashes open) into the outer bath apartment, where, seated upon low stools, with the thermometer at 85 degrees, we were soon in a most genial glow. Thus prepared, we entered the inner apartment (leaving the loose gown—wearing small aprons), the atmosphere at 125 degrees. Seating ourselves, *à la Turk*, on a low wooden bench, we

waited in profound silence the moment when all our skin inquiries should "melt, thaw, and resolve themselves into a dew." Nor had we long to wait. Soon a most copious shower of perspiration ran from every pore. Our attendant commenced a brisk friction with hands and feet over the whole surface of body, and produced a result that we confess we were not prepared for. Accustomed to daily use of the ordinary warm and cold baths, and the constant use of "flesh gloves," we fancied that we had left little to be removed; but under the skillful hands of our manipulator, we were soon divested of a rough coat of dead epidermis, that must have been a terrible obstacle to the delicate process of respiration, which nature intends to go on constantly over the whole surface of the body. Next we were rubbed from head to foot with soap, followed by a delicate stream of warm water poured over us, which produced a delightful glow of invigoration such as we have rarely experienced before. A sense of purity over the whole body, and a deep calm as of settled peace fell upon us with all the freshness of a new birth. Next a bracing stream of cold water, and we stepped again into the first apartment. When the body had been rubbed perfectly dry, we were conducted into the vineyard, where, reclining on a couch, every muscle in repose, we were exposed to a current of cold air, with the loins only girded. The night, we have said, was frosty; such a night as your comfortable and well-dressed Englishman shudders at the idea of exposure to.

Yet, as we imbibed a fragrant cup of coffee, and watched the soft light of the moon through the overhanging vines, there was no feeling of chill, but one of perfect health and renewed energy vibrated through the body; while, through the mind, sympathising as ever with her earthly dwelling, passed rapid visions of all that was pleasant in the past or hopeful in the future; and we left the dwelling of our friend convinced that few of the blessings of modern civilization, as auxiliaries to health and comfort, are to be compared to this English version of the Turkish bath, and glad that there are few martyrs to rheumatism and disease of the overtaxed respiratory organs among our countrymen who may not, at a trifling cost, possess themselves of this which would really seem to be a blessing.

#### ISLINGTON VESTRY-HALL COMPETITION.

At a meeting of the Vestry, held on the 16th inst. the committee presented their report on the designs submitted in competition, and recommended twelve designs for the consideration of the Vestry. The following is a list of the numbers and mottoes:—

8. *L'Espérance*;
- 32 and 33. *Islington*;
35. *Utilitas*;
46. *Con Amore*;
47. *(A Device)*;
50. *Utility*;
52. *Dum spiro spero*;
57. *Whyntington*;
66. *Faith*;
69. *Nemo*;
71. *A. B. C.*;

And 72. *Bravo*.

After some discussion, the recommendation of the committee was adopted, and the further consideration of the matter was deferred for a week.

The authors of several of the selected designs are freely named, and a simple struggle of interest appears to be going on. We may have something more to say next week.

Some of the cleverest designs are not included in the committee's list.

#### NOVA SCOTIA-GARDENS, BETHNAL-GREEN.

As an old subscriber to your excellent journal, I have had frequent opportunities of appreciating your earnest efforts to draw the attention of your readers and the public to the condition of the domestic accommodation of the labouring poor of the metropolis. I, therefore, think that you will be interested in hearing that the notorious site of Nova Scotia-gardens, in the parish of St. Matthew, Bethnal-green, was formally taken possession of by sheriff's writ, on Friday last, and orders given for its enclosure. A well known benevolent lady has purchased the waste place. An architect is about to prepare plans for the erection of suitable dwellings for the surrounding population, which will possess an arrangement somewhat similar to that adopted at the Victoria Lodging-house for Soldiers, in Piccadilly. As an early number of the *Builder* for the present year contains a very graphic description of the locality and its idiosyncrasies, its peculiarities are well known to you, but the scene which presented itself at the ground on Friday afternoon in last week was strange and characteristic: the "natives" had become aware that their offensive

play-ground was about to be taken away from them, and I believe they intended that the parties concerned should receive some very decided indication of their disapproval of the proposed loss. At all events, each hillock had its knot of oppositionists, and the "mountain" indicated in your engraving, presented a somewhat threatening aspect, as its crowd of occupants stood darkly prominent, against the clear sky behind them. One sturdy fellow, bent upon mischief, was hacking fiercely at a post as sturdy as himself, which had been fixed deep into the earth, as a land-mark long before. I found that a large number of similar posts had been torn up, or hewn down, and carried away in triumph by the lawless crew, only an hour or two previously. Whether my energetic friend was a mute or not, I cannot tell; I only hope that he was not deaf, for vouchsafing no reply to my request to know why he wasted his strength to annoy me, he put on his coat, and joined a numerous *entourage* which had assembled to see a fight, or hear a speech. As there was no fight, the architect delivered his "maiden speech," and my friend was all attention until its close, when he was pleased to signify his approval of its sentiments by joining in a "hooray," which welcome demonstration at once served to establish the popularity of the movement, and I have now reason to hope that, instead of the opposition which was expected, it will receive protection if not support, "a consummation devoutly to be wished."

I will keep you *au courant* with our progress, and, doubtless, when the buildings are finished and occupied, some of the many rich and benevolent, who will be tempted to visit them by their benevolent founder, may be induced to follow her steps to the dens of the wretched and poverty-stricken, and lend their aid in the recovery of other waste places.

Congratulating you that all the bread which you have "cast upon the waters," has not been lost, and that evidences of "its return after many days" are at last becoming manifest,—I am,

A FELLOW-WORKER.

#### THE CLOCK TOWER OF THE NEW PALACE AT WESTMINSTER.

WE are glad to hear that the four quarter-bells are now cast: the great bell, as our readers know, has been completed some time. As all the structural arrangements in the tower and the ironwork for hanging the bells have been ready for several months, we trust we may soon be able to judge of both clock and bells *in situ*. We make this note, because an unfair idea of the state of the clock tower has been circulated. The quarter-bells have not yet reached the building.

#### STATUES AND MONUMENTS.

A STATUE is to be raised in Cork to the late Father Mathew, the apostle of temperance. At a meeting of the committee last week, Mr. Hogan, the sculptor, after some remarks as to whether the proposed statue should be of marble or bronze, stated that bronze would be much better suited to this climate, and it was agreed that bronze should be the material used. The cost of a bronze statue of the proposed size, namely 8 feet high, was stated by Mr. Hogan to be 1,000*l*., and the cost of the pedestal was estimated at a little over 100*l*., making about 1,100*l*., altogether, as it was calculated that the corporation would give a foundation free of expense. Mr. Hogan stated that he proposed to make the statue 8 feet from the heel to the head, and that the plinth would be 6 inches, which, with the pedestal, which is to be 10 feet high, will make a height of 18½ feet altogether.

The statue to Moore, recently erected on the east side of the Bank of Ireland, in Dublin, was inaugurated last week, in presence of the Lord Lieutenant, who made a charming speech on the occasion, and suggested, incidentally, that a monument should be raised to another Irish minstrel,—Oliver Goldsmith, within the shadows of his own Trinity.

A statue to Madame Sévigné, by Messrs. Rochet, has just been erected at Grignon.

According to the *Literary Gazette*, it is proposed to erect in the principal squares of Messina four statues of colossal size, to the memory of the kings of the Bourbon dynasty. That of Ferdinand the Second, modelled in Rome by Tenerani, a cast in bronze by Herr von Miller, in Munich, and one in marble of Ferdinand the First, by Constantin Labarba, are now being exhibited at Naples, in the Museo Borbonico. The other two statues, of Charles the Third and Francis the First, the one by Zagari, in Rome, the other by Morello, in Palermo, are in an advanced stage of progress.

A statue of Etienne Geoffroy Saint-Hilaire, the naturalist, has been inaugurated with great pomp, at Etampes, his native town, in France.

In Paris a subscription has been commenced for a statue of Daniel Manin, the Italian, whose defence of



Venice against the Austrians, in 1849, was one of the most gallant events of recent times. The *Athenæum* says, the statue of Handel is getting ready for Halle, and that of Luther for Worms, and a statue of Correggio is now spoken of as in progress for Parma.

The temporary pedestal in the court-yard of Burlington House, Piccadilly, for Mr. Foley's excellent equestrian statue of Lord Hardinge, is now ready. The statue is cast, and will shortly be put up.

Sculptors and others are beginning to turn their attention in earnest to designs for the proposed memorial of the '51 Exhibition. In this case the committee seeking to afford every latitude, have made no stipulation as to scale, and will receive either models or drawings.

#### THE ARCHITECTURAL EXHIBITION.

Our advertising columns have already shown that the Exhibition will be opened to the public, in the Suffolk-street Galleries, on the 17th day of December next, and will remain open till the 20th of February. All drawings, models, photographs, &c. must be delivered at the Galleries on the 1st or 2nd of December, before six o'clock, p.m. and none will be received later. The regulation that drawings before exhibited in London are inadmissible, is temporarily waived, in favour of the competition designs for the Government Offices, and for the Memorial Church at Constantinople.

In the department for models, carvings, decorations, specimens of manufactures, and inventions connected with building, all contributions must be delivered and fixed in the spaces allotted, between November 2nd and December 1st. Two rooms, as before, will be retained for the above.

The names of gentlemen who will deliver lectures on the Tuesday evenings will be announced in due time. Professor Donaldson, Mr. Grace, and others, have already consented.

Subscriptions in aid of the Exhibition are still sought, and should any gentleman be led to forward the excellent example set last year by Mr. William Herbert, we will gladly hand the amount to the treasurer.

#### ST. PAUL'S SCHOOLS, NOTTINGHAM, COMPETITION.

In answer to the advertisement in our journal for these schools, numerous designs were sent by architects from all parts of the country. The committee, after consideration upon the merits of each design, selected those with the motto "I take Aim for the Mark," which, upon opening the letter accompanying the same, were found to be by Mr. Charles H. Edwards, of St. James's-terrace, London. The schools are to be commenced without delay.

#### THE BUILDERS' BENEVOLENT INSTITUTION.

We would again claim attention to the interests of this excellent institution, involved in the successful result of the annual dinner, which, as will be seen from our advertising columns, is fixed to take place on the 29th inst.; and we hope that not only builders, but architects and all other members of cognate trades and professions, will do what may be in their power, both individually and by their influence with others, to ensure a successful result.

#### THE DECORATIONS AT ALNWICK CASTLE.

The works in Alnwick Castle, the seat of the Duke of Northumberland, having arrived at a certain stage in the progress, have been thrown open for a time, and thousands of persons have passed through the apartments, under the supervision of Mr. F. Wilson, who has the works in charge. The *Newcastle Chronicle* says,—

"The three principal apartments thrown open on the occasion were the saloon, drawing, and dining rooms. Their ceilings, which have passed out of the hands of the artists, are arranged in geometrical compartments, most elaborately carved in the highest style of the cinque-cento era of ornamentation, and which, in magnificence of arrangement, elegance of design, and richness of resource, conveys an expression of dignity and grandeur, combined with exquisite delicacy and finish, which could scarcely be surpassed. The style and design of the carving seem difficult to describe, consisting of the most fanciful, yet graceful, combinations of the human figure, with fruits, flowers, and animals, grouped together, or flowing in ever varying and harmonious curves. The saloon and drawing-room are most gorgeous in their appearance, the carvings of the ceilings being richly gilded: their most delicate members and intricate curves stand out in bold and distinct relief from the darker ground on which they are raised. In the magnificent dining-

room, which is grander in its proportions than the others, but simpler in design, the carvings are to remain the natural colour of the woods of which they are composed; and as these are arranged with the purpose of producing contrast and variety, their combination has an imposing and superb effect. The friezes have been executed at Rome, and are finished in the highest style of Italian art."

A full description of the intended decorations, it will be remembered, has appeared in our pages, and the majority of our readers, admitting the magnificence, and perhaps elegance, of the work, will sigh with us over its inappropriateness. A very few years will pass away before all who have been concerned in the matter will see the error and regret the misuse of a noble opportunity.

#### NOTES UPON IRON.

For all the business that was done in the two great iron-making and iron-working towns of Wolverhampton and Birmingham, at the customary weekly gatherings on change at these places respectively on Wednesday and yesterday, the masters and commission agents might have remained at their works or their offices without sustaining loss. Both meetings were tolerably well attended. Whilst the dearth of money had prevented any orders being given out that were not of a very pressing nature, and, coupled with the state of things which occasioned the rise, had produced the languor referred to, still there was a generally expressed approval of the step which the Bank of England had taken. That step, it was considered, would tend to check the spread of the evil, which it was feared would otherwise grow with rapidity. Some shrewd masters went so far as to say that another one per cent. would be more an advantage than an evil, as it would put an earlier period to a condition of affairs which could not be otherwise than most injurious to trade. "We shall then see the worst quicker," was the expressive remark in which the opinion was enunciated. Although, however, nothing was done yesterday and the day before, yet the reports were few in which it was not stated that the houses had enough to do to keep them fully employed on a from-hand-to-mouth supply. But there was a confident belief that, before Christmas, "things would be worse than they are now," whilst this belief was accompanied by a kind of vague opinion that "Christmas turned, matters will soon right themselves." It would be difficult to quote prices of malleable iron, as they vary with the circumstances of the makers, the recommendations of the Preliminary meeting and the determination of the Quarterly assemblies being but little regarded in present transactions. Pig iron of 4½, 5s. and 4½, 2s. 6d. rates a month ago, is not quoted at 4½; but it may be obtained for the latter sum; and 3½, 10s. is now accepted for what at that time was quoted 8½, 15s.

#### GAS.

THE half-yearly report to the Imperial Gas Company states that there has been a falling off in the profits of the company during the last half-year, which has rendered the payment of the customary dividend of 10 per cent. on the present occasion impossible. Various causes had contributed to this, the chief of which was the reduced price of coke, as compared with the cost of coals. The report was adopted, and a dividend at the rate of 7 per cent. agreed to.—The Surrey Consumers Gas Company has just declared a dividend at the rate of 8 per cent. per annum for the last half year.—On the subject of gas in Denmark, says the *Gut-head Observer*, "a correspondent writes us from Sunderland, Oct. 3:—'Mr. John H. Little, the principal in the firm of Messrs. Little, gas-engineers, Newcastle-upon-Tyne, has arrived out here with a staff of workmen, to complete the erection of works for the lighting of this city with gas from plans prepared and survey made by the above-mentioned gentleman. The buildings are in an advanced state, and the works are expected to be lighted up the latter part of this month, which speaks volumes for the contracting parties, as they have only been commenced since June last.'"—The London Gas Company have resolved on a dividend at the rate of six per cent. per annum on the preference shares of 1840, commonly known as blue preference shares.—The South Metropolitan Gas Company have agreed to a dividend of three per cent. for the half-year just past, with a bonus of 7s. per share.—The Sheffield Gas Company's directors, according to the *Independent*, have announced in their report, just issued, that they recommended a dividend, at the rate of ten per cent. on the old, and eight per cent. on the new stock, leaving a balance of 594½ out of the revenue balance of 10,102½. A sum of 700½ had been expended in altering mains. The increasing demand for gas induces the directors to prepare for still further storage; tanks for two other large gas-holders are required, besides other additions

to the works, and power to borrow money is to be asked for at the forthcoming meeting of the company.

—Kirkburton has been lighted with gas, and the workmen employed in the completion of the works were last week treated by the contractors and the directors to a supper on the occasion.—The streets of Milford have been lighted with gas.—At Presteign the whole of the mains have been laid, and most of the houses fitted, and the town, it is expected, will be lighted by the 5th proximo.—The *Galway Indicator*, in some able articles on the gas movement is urging the cause of cheap and good gas at Galway. The directors of the local company resist, and have refused the courteous request of a deputation of consumers that some reduction of price from the 8s. still charged be granted. This they do on the absurd and false pretence that they are a set of private tradesmen, with whose business prices no one has any right to interfere. We trust the *Galway Indicator* and those who are aggrieved will very soon open the eyes of this public company to its responsibilities and duties, just as those of hundreds of other companies have already been,—as well as to their own best interests, in fact; for no axiom can ever be better established than this has been in the case of gas-light,—that, to an extent far beyond the usual conception of gas directors, low prices induce a high rate of consumption, and an increased amount of profit to the company.

#### IMPROVEMENT AT COLCHESTER.

TO-MORROW'S sun will set for ever upon the last vestige of an old abomination called "Middle-row," lately occupying a central position in the chief thoroughfare of this town. The removal of this barrier will increase the width of this part of the street from 30 feet to 88 feet; and I ask leave to call the attention of your readers to the fact that the compensation fund for this improvement was raised by voluntary contributions. Why should not similar means be resorted to to get rid of like abominations in London? Londoners are liberal enough in contributing to any object to which the name of charity is usually attached; and when we come to look into matters closely, we shall see that this public spirit is, in some matters, even more meritorious than private charity. In the first place, there will be no ground of accusation that the contributors' motives were public applause, or a reputation of piety; and in the next place, there is no sectarianism in it: you cannot pull down Middle-row, Holborn, and then ordain that only members of this or that religion, or natives of this or that county or parish, shall walk over the site thereof; and, lastly, it benefits an unlimited number of people.\* But the chief nuisance of this kind in London is one where many of the occupiers and owners deserve to lose their property and business without recompense. There is a street more Holy in name than in nature, with a church at each end of it, many of whose inhabitants live chiefly by corrupting the moral health of the community; and though they would think it monstrous and diabolical if an Act should be passed for burning down their tenements at night, without either notice or compensation, it may be asked whether even this expedient would be more dreadful in its consequences than the traffic that is carried on in this filth market. I must excuse myself for applauding the public spirit of the town in which I reside, by stating that I am only a temporary resident, and by confessing that I was not one of the contributors to the compensation fund. SCARILL.

#### CONDITION OF OUR COURTS OF JUSTICE.

GREAT trouble has been taken, and expense incurred, in providing our legislators in their new house with that necessary element,—wholesome air. A glance through the Parliamentary reports of the last few years shows the various and pitiful complaints which have from time to time been made. Sometimes there has been too little air; at others, the blasts were too strong and too moment the air has been too hot, and at another time cold; on some occasions complaints have been made of both heat and cold at the same time, and those situated in different parts of the house, and lately the members have been in danger of being poisoned by the gases from sewers and the bone-boilings of Lambeth: even Father Thames himself has not escaped without suspicion. The remedy, however, is in their own hands; and, although worthy of commendation, they are not so much to be pitied as those who have no means of helping themselves. Looking into some of our metropolitan courts of justice, let us remark that the "Temples of Justice" in a great state should be constructed and designed in a manner equal to the importance of the functions which are there to be carried forward. At the present time, nothing can be more contemptible than the architectural features which are presented in most instances,

\* The removal of Middle-row, Holborn is, we believe, arranged for by the Board of Works.



both inside and out, by our Courts. Take, for instance, the Courts of Chancery in Lincoln's-inn: can the most remote and ill-devised of small and insignificant railway stations show anything to the eye worse than the view which is presented after passing through the gateway leading from Chancery-lane to the chief English legal tribunal? Look on the pictures presented by the buildings in ancient times appropriated to the dispensation of justice. The Court chiefly occupied by the Lord Chancellor when here, and that adjoining where the judges often sit, are somewhat quaint in their interior arrangements: in the former there is an indifferent painting behind the judgment-seat, and a marble statue of a departed lawyer on the floor. The chief ornamental feature, however, which catches the eye both here and in the other chamber, is an array of the shields of arms of worthies who have flourished here. These halls should be made places in which to display the skill of the printers of this country. Some object to our churches being used for such purposes: to the introduction of art in our Courts of Justice there can be no objection. We should have there the best representations which can be produced by British artists of such events as King Alfred delivering his laws to his Senate, the signing of Magna Charta, &c. and also portraits and busts of men just and eminent in the administration of our statutes.

Impressed with such an opinion, let us look at the courts attached to the Old Bailey, where may be seen on the roof that abortion, executed in iron or zinc, the equal of which is scarcely to be met with elsewhere. Many will have noticed in the London streets, monster dispensers, or teapots, and it has often surprised us that some enterprising smoke-curer, who deals in chimney-cowls, has not attempted to copy this work, and attach it to his premises, as a means of attracting notice.

We need scarcely remark upon the Clerkenwell Sessions-house, nor on the Courts of Bankruptcy, or those in Portugal-street, as any exception from the uniform ugliness of these public buildings.

It has been said that the difficulty with the ventilation of the Houses of Parliament has, in a great measure, arisen from the vast extent of the edifice, and from the necessity, in many instances, of making the best sanitary arrangements, secondary to the beauty and harmony of the architectural features. In the courts of law just mentioned, there can, however, be no such excuse, for the beauty of the architecture need scarcely be taken into consideration, and yet the ventilation of these places is very imperfect. As regards the Chancery-courts of Lincoln's-inn, passing through them on a winter's day, the difference of the temperature will be found extraordinary: one court is at times intensely hot, and another of chilling coldness. It will probably be found, on inquiry, that this is in a measure caused by one learned lord liking warmth, and another preferring the cold; and there would be no great harm in this if it were not that the numerous council who are obliged to attend here, day after day, are constantly called from one court to the other, and these abrupt transitions cannot fail to be prejudicial to health. Besides the fault of heating, the ventilation here is often very imperfect. The courts in Portugal-street, particularly that in which Mr. Commissioner Phillips usually sits, requires very great improvement. At times, when the place is crowded, the atmosphere is shocking, and the currents of air driven in, with a view towards improving it, are very dangerous, heated as the people generally are by crowding and artificial warmth. The desperate remedy adopted at the Old Bailey has not rendered that place healthful, and the arrangements made for the reception of witnesses, &c. who are obliged to wait here for perhaps two or three days, are very imperfect. The police-courts are little better: what, for instance, can be much worse than the arrangements even at the Mansion-house? The condition of these places requires to be carefully considered, for most of those who come to them cannot help it; and truly, the troubles of the law are generally hard enough to bear without the additional infliction of an offensive and unwholesome atmosphere.

#### ST. LAWRENCE ESTATE, UNDERCLIFF, ISLE OF WIGHT.

SOME fifty acres of ground adjoining the miniature St. Lawrence Church, in the Undercliff, at the back of the Isle of Wight, have been lotted out for building villas, in plots varying from half an acre to two acres. A new road has been formed, commencing near the Earl of Yarborough's marine cottage, and giving access to the estate intended to be built on. Plots have been reserved for a church and for an hotel. Leases for a thousand years, at a ground rent, will be granted by the Earl of Yarborough, the owner of the property. The natural terraces, already formed by the broken surface of the Undercliff, the shelter of the Cliff itself, and the extensive view seaward to the south, offer

inducements for the display of somewhat better and more appropriate villa architecture than that displayed in the neighbouring town of Ventnor, which is a mile and a half distant. When the steam ferry from Stokes Bay, on the mainland, to Ryde shall have been completed (the works are in progress), the further necessity of establishing more speedy communication with the southern coast of the Isle of Wight than that at present afforded by the hilly roads must become more than ever obvious. Let the modern means of bridging distant localities into close (time) connection with the metropolis be introduced, and the day cannot be far distant, when the whole extent of the Undercliff may become a second Brighton, but with a bolder sea and a far richer country to recommend it.

#### THE ROYAL POLYTECHNIC INSTITUTION.

ADDED to the many sources of amusement and instruction for which the Polytechnic is celebrated (now more than ever), the indefatigable lessee and manager, Mr. Pepper, has provided, as we lately hinted, a variety of new and attractive entertainments, as well as several novelties of a more scientific and interesting class, the whole forming a congeries of attractions which it is really not possible to go over, even with a mere glance at each and all, at a single visit. Many of them, besides, are of so enduring an interest, that they are sufficient of themselves to induce one to return again and again to see them. The last novelties of the more showy and popular description comprise a stereoscopic and polyramic exhibition in a new room just added to the premises, a series of dissolving views of places and events connected with the Indian mutiny, and a new philosophical entertainment, explanatory of the tricks of modern "wizards." Neither have the enormous magnifications of the oxyhydrogen microscope, nor the skilful art wax-work figures of Montanari, lost their attractions in the midst of much that is more recent in novelty and interest to the crowds who seem to visit the Polytechnic. Several new mechanical and other inventions, also, have been added. Amongst these are Myer's system of railway signals for trains in motion, some of which, if we mistake not, have already been described in our columns; Stevens's patent bread-making machine, for doing away with dirty and disagreeable processes of manipulation; and Osment's pocket reservoir penholder, containing sufficient ink to write 100 letters, and sold at so moderate a price as a couple of shillings, which seems to show the faith of its inventor in its essential merits. So far as a brief trial of it can enlighten us, this instrument seems to bid fair to be the desideratum looked for, at least for out-door clerks and others.

In respect to the Polytechnic as a whole, we may add, the evident anxiety, and the liberal and enlightened efforts, of the present lessee to multiply and accumulate its attractions, and to enhance its general interest, disarm adverse criticism, even where one is not quite satisfied, here or there, with the efforts of those whom the lessee employs to carry out his ideas.

We may here remark that at the Polytechnic a school of art class in free-hand mechanical, perspective, and architectural drawing, was to be commenced on the 9th inst. This school is to be conducted by Mr. H. Hagreen, of the Department of Science and Art.

#### RECENT PATENTS.\*

W. E. NEWTON. — *An Improvement in Centrifugal Pumps.* (A communication.) Dated 19th November, 1856. — The object here is to obviate unnecessary friction, occasioned by the changes in the direction of the water that takes place in centrifugal pumps. To effect this the water is made to pass through the pump in the direction of a spiral of gradually diminishing pitch.

WALTER MACFARLANE, Glasgow. — *Moulding or Manufacturing Cast-iron Pipes.* Dated 26th of February, 1857. — The patentee records eight special claims, amongst which are — 1. the simultaneous formation of the moulds and cores for casting pipes, or the surfaces for shaping or producing both the inside and outside surfaces of pipes, the said moulds and cores being formed in a vertical position, for the purpose of casting pipes in end. 2. The system or mode of moulding and manufacturing cast-iron pipes in a horizontal position, in which the casting is partially uncered by means of the expansive force of steam or gaseous matters, as thereinbefore described. 3. The system or mode of forming the moulds for casting pipes, in which the pattern of the pipe serves the twofold purpose of forming the moulds and the cores, the said moulds and cores being formed in horizontal position, as thereinbefore described. 4. The system or mode of moulding and manufacturing heads,

elbows, branches, heads, and other pipe fittings, in which the pattern is made to form the mould and the core, as described. 5. The system or mode of moulding or manufacturing cast-iron pipes by the agency of moulds and cores which have not been subjected to the action of heat.

WILLIAM PEDDER, Savage-gardens, Tower-hill, London. — *Strengthening Metallic and other Structures.* Dated 2nd March, 1857. — This invention consists in strengthening plates, planks, and beams, employed to form metallic and other structures, at the parts of such structures where the ends are brought together by means of strengthening joint plates having a rib or feather projecting therefrom, against one side of which feather or rib one end of one plate is made to butt, and against the opposite side of which one end of the next plate is made to butt: the projecting rib or feather is of a greater length than the thickness of the plates, and after the plates are riveted to the strengthening joint plate, the projecting rib is beaten in to form a solid mass between the plates, and may be burned down so as to form a rivet over the ends of the plates.

CHARLES FAUVERT, Châtelleraut, France. — *Manufacture of Iron.* — Dated March 2, 1857. — The object of this invention is to deprive or drive off from puddled iron sulphur, phosphorus, and other metalloids by cementation: it is applicable to puddled iron in any of its stages or states. The patentee employs a cement, composed of the following substances: — Fourteen parts (by weight) of oxide of iron; thirty of highly aluminous clay; fifty of carbonate of lime or wood ashes; four of finely divided charcoal; one of carbonate of potash; one of carbonate of soda. The iron is placed with the cement by layers into a cementing furnace, and the furnace is heated in the ordinary manner. This iron, after cementation, is welded, and then drawn into bars, when it is said to become as soft and tenacious as iron made with charcoal.

A. CLARK. — *Improvements in the Application and Construction of Revolving Window Shutters and Blinds and Metal Window Sashes.* Dated Nov. 21, 1856. — This relates to window shutters and blinds composed of a series of laths hinged together so as to roll up and unroll, and consists in applying strips of steel as springs across the laths, so as to give them a tendency to coil themselves up, which springs may either be sufficiently strong to coil up the shutters altogether, or only to assist that operation, and may or may not form the connection between the laths. Springs of india-rubber may be similarly applied. Further improvements are also included. The improvements in metal window-sashes consist in applying a thin covering of brass, or other metal, on a body of iron plate.

#### Books Received.

A Memoir of the Rev. John Hodgson, M.A. P.R.S. Sec. Vicar of Hartburn, and Author of a History of Northumberland. By the Rev. JAMES RAINE, M.A. Rector of Meldon, Author of a History of North Durham, &c. In two Vols.; Vol. I. London: Longman and Co. 1857.

THE Rev. Mr. Hodgson was a well-known antiquary; and archaeology is much indebted to him for his elucidations of many interesting remains in the north of England. He was a contributor to the "Beauties of England and Wales," and author of various treatises, poems, and other literary and scientific productions. His most important work, however, was his History of Northumberland, based on his elaborate article in the "Beauties of England and Wales," on the same county. As a botanist, geologist, and philosopher also, he was well known, especially in the north; and he took an active and prominent part in those inquiries which led to the invention of the Duvoy lamp for miners, as recorded by Sir Humphry Davy himself. Mr. Hodgson was a native of Swildale in Ship, Westmoreland, or "Westmerland," as he maintained that this word should be spelt, having originally signified the lands of the western *meres*, or lakes; if so, one would think that "Westmerland" or Westmorland simply with an *s* in the place of the *e*, would be still more correct. The account of Westmorland in the "Beauties of England and Wales," by the way, was also written by Mr. Hodgson. In his youth he became first a schoolmaster at Bampton, and afterwards at Maltersdale, and elsewhere in the north. In 1802, at which time he was about twenty-two years of age, he appears to have obtained a title for holy orders; and in 1804, he became sub-rector of Esh and Sateley, in the parish of Lancaster. In 1806, he was appointed curate of Gathead, under Dr. Prusser, Rector. In 1807, he published various poems, one of which was titled "Longuivum, a Vision," in which the archaeological bent of his mind was manifested in stanzas on the history of Longuivum under the Druids, Romans, Saxons, and early Christians. The living of Jarrold with Heworth was next entrusted to his care, and the

\* Selected from the lists published in the *Mechanics' Magazine*, the *Engineer*, and other sources.



archaeological remains of Jarrow Slake and its vicinity were soon overhauled and elucidated. A good many years afterwards, in a communication to the Society of Antiquaries of Newcastle, Mr. Hodgson pointed out that the Roman road-remains at Jarrow consisted of a branch of the Wrekendyke; and, when requested by a builder of a village on the line of road near Gateshead to give a name to the new settlement, he called it by the name which it now retains. In 1810, Mr. Hodgson married, and in the same year his connection with the publishers of the "Beauties of England and Wales" commenced. This connection led to his acquaintance with Mr. John Britton, who kindly offered him his aid and good wishes. Mr. Hodgson's account of Northumberland in the *Beauties of England and Wales* extends to 243 closely-printed octavo pages; and his account of Westmoreland, afterwards written, to 245 pages, exclusive of a copious index. In 1812, the Newcastle Society of Antiquaries was established, and Mr. Hodgson, at its second monthly meeting, read an essay on "The Study of Antiquities," which was published in the first volume of the Society's Transactions. He afterwards wrote and read many papers for the same society, and, indeed, became its secretary, and was eventually elected one of its vice-presidents. The more extended history of Northumberland was first thought of about the year 1812, but it encountered many difficulties and delays, and the first of its six projected volumes was not issued till the year 1820. The advertisement of the work first appeared in the *Gentleman's Magazine* and the local newspapers of 1819. Though the first that appeared, the volume of 1820, however, was in fact "Volume V. being the first volume of Part 3." The work turned out to be an unfortunate speculation for the author, in pecuniary respects: it was not supported by the county as it ought to have been. In the *Gentleman's Magazine* of 1822, there are contributions by Mr. Hodgson on Copeland and Bethal castles, Warkworth Bridge, and Willimoteswick. In the same year a new church at Haworth, designed by Mr. Hodgson, and intended for his own occupation as preacher, was finished and opened for divine service. This edifice is capable of accommodating 1,500 persons, and is cruciform in plan, with a tower at the west end, but without aisles, and with a low roof, flat ceiling, and numerous pointed windows of poor design. At the close of 1822 Mr. Hodgson communicated to the Transactions of the Newcastle Society of Antiquaries an essay on the Mithraic antiquities discovered in that year at the Roman station of Housesteads. In this essay he expresses his opinion that "the secrets to which the aspirants were admitted in the orgies of Isis and Osiris in Egypt, of Ceres at Eleusis, of Adonis in Phœnicia, of Bacchus in Samothrace, of Hu in Britain, and of Mithras in Persia, all emanated from one common fountain," and that the primary object of the Mithraic severities "was to prepare the mind and bodies of the aspirants to undergo every species of self-denial, and, by an exhibition of that part of the pagan creed which relates to the passage of the soul from life to immortality, to impress upon them the necessity of that great moral regeneration which was to fit the soul for entering upon a new, happy, and eternal existence."

The volume now published of the memoir of Mr. Hodgson brings down the history of his life to the beginning of 1823. It contains many letters written by Mr. Hodgson and others, but particularly by himself, and a great majority of them addressed to Mrs. Hodgson, containing minute details of his every-day life while absent from home. Indeed, it is doubtless for behoof of those readers especially who reside in the north of England, and have their interest in the subject of the memoir enhanced from that circumstance, that so detailed a memoir is more particularly intended, otherwise we should feel inclined to think that the whole work is on rather too extended and detailed a scale to have a very large circulation or a profitable sale.

### Miscellaneous.

**SMOKY CHIMNEYS.**—Although I occasionally see in the *Builder* articles headed "Smoky Chimneys," I have looked in vain for any contrivance of their cure, founded on sound principles of Natural Philosophy; or, indeed, for a single practical suggestion of any kind worthy of a moment's serious attention. And I cannot help thinking that this fact reflects considerable discredit upon the profession. One may obtain no end of learned talk about the fitness of this and that exterior and interior decoration; but no one who will build a house and guarantee any particular chimney to smoke only at the top. But what is the value of an elegantly decorated room to the man who, through the long winter nights, is obliged to sit in it, filled with the smoke that is being constantly emitted from the fire-place?—J. G.

**VENTILATION BY THE STEAM JET.**—An application of the steam jet to the ventilation of a coal mine has just been made by Mr. F. H. Perce, of the Bowling Ironworks, near Bradford. A jet of steam issuing from the top of a set of pipes produces in them a partial vacuum, which draws the foul air with great velocity up these pipes, and thence out of the pit into which they run. The cost is said to be very trifling. Wood or any other kind of pipes may be used. Little or no attention is required, and there is no machinery to get out of repair, while a powerful current of air, which can be regulated at pleasure, is produced. The steam is discharged into the atmosphere above the top of the pit, and does not interfere with the men working in the shaft. Manufactories or other places where steam is in use, or can readily be got up, might thus be ventilated. The principle might be made good use of, one would think, on ship board.

**BIRMINGHAM ARCHITECTURAL SOCIETY.**—The session of this Society commenced on Monday evening in last week, on which occasion Mr. F. Empson, the President, delivered an address. The observations referred principally to the position and prospects of the society, which are of a very cheering nature. One subject of general interest was mentioned in alluding to questions on which discussion was invited. This was the great disfigurement which is being perpetrated on some of our public buildings by external means of ventilation. Mr. Empson drew attention to the enormous appliances which have been put upon the roof of St. Martin's Church, which are not only ugly in themselves, but are so prominent as to take attention entirely from every other part of the building. The speaker thought that some means ought to be adopted to prevent such a barbarous plan of destroying the beauty of our buildings. In this opinion the meeting joined, it being asserted that it would be easy for the designer of a building to adopt any system of ventilation without so seriously injuring the building, and that it was very unjust to an architect to allow any other person so to interfere with and damage his design. A cordial vote of thanks to the President for his paper brought the proceedings to a close.—*Birmingham Gazette*.

**SANITARY STATE OF SYDNEY.**—In a recent number of the *Sydney Magazine of Science and Art*, just come to hand, there is a paper read before the Philosophical Society of Sydney on the sanitary condition of the town, by the Registrar-General of the colony, Mr. C. Rolleston; from which it appears that "the rate of mortality in Sydney in 1856 to 1857 exceeds that of London in a year of cholera, and the mean deaths of the whole of England for the last seventeen years, by 0.266, or  $\frac{1}{4}$  per cent." There is something here radically wrong. The deaths of children under five years of age, a good test of the general health, are over 8 per cent. in excess of that of the city of London, and over 4 per cent. of the deaths of all England. Poverty or want is a very trifling cause of mortality at Sydney, but drunkenness and habitual intemperance a very serious and prevalent one. Of the want of adequate drainage we have before spoken.

**ELECTRIC LIGHT.**—Mr. Charles W. Harrison, of Woolwich, has patented some improvements in the production of the electric light. He places pieces of metal, or other suitable material, in gas retorts, or in tubes connected therewith, for the purpose of receiving a deposit of gas carbon, until they are coated to the desired thickness, and he then cuts or grinds them to the required form of electrodes; and, secondly, he uses electrodes of spongy or powdered metals, prepared by compression into any desired shape. He produces lights of various colours, according to the metals used. For the positive electrode he employs a circular disc, which is kept in position by a small roller.

**LOCAL BOARDS OF HEALTH APPOINTMENTS.**—Will you assist myself and others (by publication in your influential journal) in bringing from under the bushel the light so modestly hid of the generous liberality, now becoming so prevalent, of incorporate bodies and local boards of health, towards candidates for surveyorships, in inviting five or six to attend the board, and at the same time politely intimating to them that their expenses will not be paid? Now, sir, inasmuch as these considerate gentlemen make it optional with the candidates whether they attend or not, I cannot complain, though of course some who had been unsuccessful would partly attribute it to their non-attendance; but what I do cry shame upon is that so many should be thus unnecessarily and (I must call it) unjustly selected upon the same liberal terms, when, say two, or even three, who had the largest number of votes, might be invited, and the expenses of the one or two unsuccessful ones paid, as would be only just. Let me ask those liberal-spirited gentlemen, members of councils, how they would relish having to travel one, two, or even three hundred miles, to be not only disappointed, but mortified by having to pay for that privilege?

DECLAMO.

**INDUSTRIAL SCHOOL FOR MIDDLESEX.**—At a general meeting of the Middlesex county magistracy on the 15th instant, a special report was brought up from the committees appointed under the 18th and 19th Vict. c. 169, to provide an industrial school for the juvenile offenders of the county; and upon the motion of Mr. E. E. Autrobus, the chairman, seconded by Mr. Armstrong, a resolution was passed authorising the committee to carry out the plans, as approved by the Home Secretary, at a cost not exceeding 53,000*l*.

**KINGSTON-ON-THAMES, SURVEY.**—PARISH ASSESSMENT.—At a meeting of the Board of Guardians for the Kingston Union, on Tuesday last, fifty-six tenders were received for a new survey and valuation of the parish, the amounts varying from 190*l*. to 1,000*l*. The guardians decided on accepting the joint tender of Mr. J. Wornham Penfold, of Charlottetown, Mansion-house, and Haslemere, Surrey, and Mr. E. Kernock, of Kingston, who will make an entirely fresh map and valuation of the whole parish; and we think, now the matter has been placed in the hands of these gentlemen, that a fair and equal assessment will be made, and thus put an end to the appeals which have been so frequent of late, and been the cause of so much expense and dissatisfaction to all parties.—*Standard Express*.

**LECTURE ON EARLY ART.**—The session for the winter quarter of the Croydon Literary Institution opened last week, when Dr. Kinkel, of the University of Rome, gave a lecture on "Early Christian and Byzantine Art." The decay of heathen religion and art towards the commencement of the Christian era, the catacombs of Rome, the cradle of a new style of art, the early churches, the Roman judgment hall transformed into the Christian meeting-house, the foundation of the Byzantine empire, its character of despotism and splendour, the cathedral of St. Sophia at Constantinople, the mosaic paintings used in the ornamentation of the Byzantine places of worship, and the influence that all these exercised on Russian and Mahomedan nations, were treated of with care.

**RE-OPENING OF ST. MARY WOOLNOUTH CHURCH, LOMBARD-STREET.**—The *Standard* says, this church, which has been for some time closed in consequence of being under repair, will be re-opened for Divine worship on Sunday next. The church, as many may know, stands in a commanding position forming the western angle which connects Lombard-street and King William-street, and was designed by Hawksmoor. The front and the whole exterior have been cleaned and restored by Messrs. Colls, of Camberwell, builders. The interior has also been decorated by the same builders.

**THE MARKET CROSS AT ENFIELD.**—May I be allowed to call your attention, and by so doing the attention of the London and Middlesex Archaeological Society, to the market cross at Enfield, a neat erection in the Gothic style, and one which Spelting, in his "Church Walks in Middlesex," says, "is a market cross of some merit, considering that it was erected about twenty years ago;" but which, at present, appears to be little more than a mark for the boys of the place to throw stones at. The iron rails around it are broken, and the whole bears the appearance of premature decay. I trust that a very short time will see a restoration.—O. S.

**THE LATE M. ZANTH, ARCHITECT.**—The newspapers mention the death of M. Zanth, architect to the King of Wurtemberg, and designer of the magnificent Moorish chateau, the "Wilhelms," often named during the late Court festivities in and about Stuttgart. M. Zanth, who was associated with M. Hittorff in his fine works on the buildings of Sicily, was a corresponding member of the Institute of British Architects. He was an exquisite draughtsman.

**RAILWAY MATTERS.**—The foundations of two viaducts on the South Durham and Lancashire Union Railway were laid on the 15th inst. One of them, the Tees Viaduct, has been contracted for by Mr. Kennard, who built the Crumlin Viaduct; the other, the Deepdree, has been taken by Messrs. Gilkes, Wilson, and Co. of Middlesbrough. Both will rise to the height of more than 150 feet, and span valleys of great width. The principal viaduct on the line, however, will be over the river Bealch. This will be 192 feet high.

**SURVEY OF ST. LEONARD'S, SHOREDITCH.**—At a meeting of the vestry, to consider tenders for the survey and valuation of the Eastern Counties Railway station; the works belonging to the Imperial, Independent, and Chartered Gas Companies; the pipes and mains belonging to the New River and East London Gas Companies; and all assessments now rated above or at 150*l*. a year; the tenders of Mr. Hughes, Mr. Paine, and Mr. Liddiard were recommended by the committee for adoption. The tenders ranged between 80*l*. and 300*l*. the last-named being 80*l*. The final appointment is specially appointed to take place on Tuesday, 27th inst.

JAMES SAUNDERS.



**CARPENTERS' COMPANY. —**  
Twickenham Almshouses. — A VACANCY has occurred in the above Almshouses. Applicants must be Liverymen or Freemen of the Company, of the age of fifty years or upwards, and must be single, or Widows of Liverymen or Freemen of the Company, of the age of fifty years or upwards. Applicants are to be left at a Gent's Hall, on or before the 2nd day of NOVEMBER, 1857. Forms of application may be obtained at the B. d. s. Office, at 11, Pall Mall. **EDWARD B. JUNT,** Clerk to the Company.



and understands perspective and color. Address, stating full particulars, to W. T. B. Office of "The Builder."

the getting up of drawings, both geometrical and perspective, of sheets and details, and also with the practical part of the profession. Would have no objection to undertake any description of professional work at his own residence.—Address, A. B. 9, Ottostreet, Royal-road, Kensington-park, S.

The Present War.—Stevens's Eighty new Osomaras and Iron Stereoscopes. The Diver and Diving Bell—more than 3,000 Model and Works of Art; Electrical Experiments; Machinery always in Motion; Montanari's Art Wax-work, &c. &c. Exhibition daily of the far-famed Polytechnic Oxy-Hydrogen Microscope.



# The Builder.

Vol. XV.—No. 769.



OCTOBER, into which we shall enter next week, may be regarded as the commencement of the Architectural season, though not exactly the season for building. The Institute will hold its first meeting on Monday next: the Association has got into work, and so has the Liverpool Architectural Society: part of the elaborate inaugural address delivered thereat will be found on another page. The Institution of Civil Engineers will begin its session on the 10th.\* The Architectural Institute of Scotland, which has been doing its work well, and has published some admirable papers,† will also, we suppose, commence as usual in that month: the Architectural Exhibition will open its doors to receive inventions and materials (designs will be taken in at the commencement of the month following); and, in short, as we said above, the architectural season will begin. Considerable activity, too, prevails, and a busy time may be looked for. Of the Institute of Irish Architects we do not hear much. There is some talk, we believe, of its reconstruction on a broader basis: we shall rejoice to hear of its successful accomplishment. With reference to the sister-island, by the way, we have been asked to mention that a new professional journal for Ireland, entitled *The Architect and Engineer*, is to appear with the coming year. We do so willingly, but we must also say that to ensure success it must be carried on with stronger resolves and better arrangements than accompanied some recent attempts of a similar kind there.

The Architectural Photographic Society now numbers in its ranks nearly 600 members, and ought to be able to give a rich return for the guinea subscribed. The committee have made arrangements with artists to supply them with views in France, Belgium, Spain, Italy, Malta, Athens, and Constantinople, and in our own country they expect to have a large and fine collection, from which the subscribers will be able, with some restrictions, to choose their own subjects. As they make their arrangements directly with the photographers themselves, the cost will be greatly reduced. Already, too, many photographers in Italy and Spain, and England, have endeavoured to conform with their expressed wishes, which will, in the end, render the views more serviceable to the profession. Next year the committee have every reason to hope to extend their operations into Asia, and to the remaining countries of Europe.

The Architectural Union Company is making progress, though not so rapidly, considering the importance of the object to be achieved, as could be desired. About 800 shares have been subscribed for, and doubtless, when the Institute and other bodies meet, a fresh impulse will be given to the arrangements. The main terms as to the purchase of the house have been agreed upon, and the preparations necessary for obtaining tenders for the alterations

proposed to be made in the premises are said to be in hand. A handsome seal has been prepared for the company. It is inscribed round the upper half, "Concordia Domum Dat;" round the lower, "Architectural Union Company. Limited." The house provided for the architectural family, the Institute, the Association, the Exhibition, and other bodies, in the shape of a Greek Doric portico, forms the background. Concordia, a somewhat lusty matron, with a wreath in her left hand, invites the Past, Present, and Future, to enter the home. An old man, with records and fragments, represents the Past; a young man, with his plans, an Ionic capital and a Gothic pinnacle at his feet, the Present; and a naked boy, to show probably that he is not wrapped in prejudice of any kind, the Future. Concordia is generally represented on coins, if we remember rightly, with a cup in one hand, and a cornucopia in the other; and if so accompanied on the medal would have been more easily recognizable. Misconstruction was perhaps feared. As it is, wags will probably see in the old man, the Institute; in the young one, the Association; and identify the child, at their feet, as the lusty *tertium quid*, to result one day from a union. View it as they may, however, the seal is an interesting production, very creditable to Mr. Owen Jones, who kindly designed it, and to Mr. R. Monti, who made the model from which the die was engraved. We look anxiously to see the promising and capable Present take possession of the new Home, there to make the best use it can of the Past, and provide handsomely for the Future.

Next year it may be expected the Architectural Exhibition will be held in Conduit-street: on the present occasion it will take place in Suffolk-street, as before, but with a difference, for very considerable alterations, which we have no doubt will be improvements, are being made in the Gallery.\* The roof of the large room was a clumsy and ill-arranged affair, carried partly on obstructive columns, and the walls, it will be remembered, were very badly lighted. The roof has been cleared away, and an entirely new roof is being put up by Mr. Smallman, builder, from the designs of Mr. Charles Fowler, jun. It consists of three pairs of principals, with half principals, at each end, so placed as to make the plan of it an elongated octagon. The principal rafters have no tie-beam, but there is a collar-beam about 6 feet up from the foot of the rafter, and this collar is secured to the rafter by strong iron angle ties on the face of both.† A cove is formed from the foot of rafters up to the collar-beams, at which upper level there will be a flat ceiling, mostly of ground-glass: behind this at night, gas will illuminate the apartment, without heating it disagreeably; while for day-light the outer roof will be glazed to the extent of 18 feet on each side of the ridge. The walls will be hung with canvass, painted in patterns, and the cove, we understand, will be decorated with the figures of eight kings, painted by Mr. Hurlstone, the president of the Society of British Artists, to whom the gallery belongs, with representations on each side of them of the artists whom they encouraged. In this, as in most things now going on, a desire is evident to do something a little better than was thought sufficient a few years ago. Every new building of any size shows the same feeling: in most of them, either in the shape of colour or of sculpture, some attempt at decoration is made. In the various competitions, too, which have

lately taken place, considerable freedom of thought has been shown, to which we shall have other opportunities to refer.

Concerning the designs for the Government Offices, nothing has been heard since the decision. The same mystery prevails as to the proposed Wellington Monument in St. Paul's. Individual sculptors, considering the matter still open, are active in making known their own particular views; but of the intentions of Government in the matter we shall probably know nothing before the meeting of Parliament.

The designs for the *Cambridge Music-hall* have been on view during the whole of the present week. The consideration by the town council of the question as to whether the present Town-hall is to be altered or not is deferred until the 9th of November, when the point will most likely be finally decided one way or the other. This we suppose will influence the decision as to the Music-hall. We are sorry to find that the impression appears to be that a Music-hall will not be built, and that the committee appealed to architects for designs without sufficient grounds for believing that they would be in a condition to carry out the scheme. One of our correspondents, however, says,—"It is not known when the selection will take place, but there is no doubt that full justice will be done to all by securing the aid of competent architects in weighing the merits of design and detail exhibited in the works of the various competitors." It is to be hoped that he will prove correct.

In the *Blackburn Infirmary* matter the committee have awarded the first premium, 100*l.* to Messrs. Smith and Turbull, of Manchester, and the second to Messrs. Hibbert and Rainford, of Preston. Even at this distance from the scene we could give evidence of personal canvassing on the part of unsuccessful competitors, not in accordance with the published conditions of the competition. The *Preston Guardian*, with a perception of the real stake played for, not always exhibited by non-professional papers, asks who is to carry out the design? and says,—

"The committee are bound in fairness to employ one of the firms who have been awarded a prize. We are aware that a discretion in this matter was reserved by the conditions under which plans were sent in; and we can imagine that such a proviso was expedient to guard against a possible evil. But two firms have passed through a severe ordeal, and their abilities in this peculiar architecture have received a practical recognition. The best possible test has been applied, and the result is satisfactory. We wish, however, to impress upon the committee the nearly self-evident fact that the prizes are by no means an adequate compensation for the abilities and labour expended upon the designs. The cost to the authors of the seventy-three sets of plans could not have been less than 600*l.*: their value and cost, if ordered and paid for, would range between 1,500*l.* and 2,000*l.* The prizes together only amount to 150*l.*; so that the inadequacy of the reward to the risk incurred is palpable."

Again,—

"Let the profitable part of the work go where the merit and risk came from. There can be no reason for withholding from either Messrs. Smith and Turbull, or Messrs. Hibbert and Rainford, the absolute erection of the building."

There ought to be no reason, but we are, nevertheless, very anxious to know the arrangement adopted in the selected design, hoping, most earnestly, that we may not have another pestilential hindrance to cure, added to those which already disgrace the country. The patients, in surgical cases, in many of our hospitals, would have twice as good a chance of recovery as they now have if they were put under a canvass tent on Salisbury plain. The motto adopted by the authors of the second design, "*Le Plan Français*," would lead us to believe that what has been said in these pages on the subject has, at any rate, been seen, even if it should not have been properly attended to.

\* The list of premiums awarded, and subjects for which premiums have been offered, is published: we shall refer to it on another occasion.

† The fifth volume of Transactions, for 1855-6, contains some particularly interesting and valuable papers, including essays "On the Architecture of Nuremberg," by Mr. Geo. Burnett, advocate; "On Wrought and Cast-Iron Beams," with illustrations, by Mr. Theo. Davies; "On the Egyptian Obelisks now in Rome," with illustrations, by Mr. Alex. Thomson; and "On the Monumental Edifices of the Egyptians," by Professor Donaldson, "Ph. D."

\* The report of the committee and balance sheet, 1856-7, are now before us. The latter shows that the payments, including 1*l.* returned to Architectural Association, and 34*l.* to members of the committee, were 42*l.* 19*s.* 6*d.* The receipts and subscriptions were 527*l.* 6*s.* 6*d.*, leaving due to Hon. Secs. 1*l.* 13*s.*

† The span is 43 feet. The principal rafters are 8 in. by 6 in.; the collar-beam is 8 in. by 6 in. at the ends, and 10 in. by 6 in. in centre.



We mentioned some time since the decision in the—

*Cattle-yard Competition of the Royal Dublin Society.*—Afterwards a second competition was invited, but we believe no decision has been publicly announced. The architect whose design was selected in the first competition writes to us,—

"Possibly you, or some of your professional readers, would kindly suggest what course is open for unsuccessful competitors to pursue, who, lured by the promise of a premium, send in elaborate drawings in competition, and subsequently find that the parties receiving and professing to adjudicate fairly on the same, decline to announce any decision, or state if such premium has been awarded or not. It appears to me that an announcement could be forced, by serving notice that unless the same were made within a given time, the drawings would not be taken back, but charged for in the usual manner."

Before making any remark let us print the inquiry of another correspondent, "F. W. C." and one observation will apply to both. He says,—

"On the 17th inst. I wrote to ask your advice as to how an architect, who sent in a competition design (a premium having been offered for the best) for a building about to be erected, should act, when his design, at first (as he heard) selected as the best, was not only traced, but also cut out of the book in which it was made up. Since then I have received my letter, and the builder's, which accompanied my design, but not until I had written for them three times: both were opened, I presume by the secretary of the committee, although each was sealed, and had the motto written on it; and these were put into a large envelope, sealed, and the motto on it."

I shall esteem it as a special favour, if you will be good enough to favour me with your opinion as to whether, in accordance with professional practice, I have any claim for such ill-treatment?"

We believe it is tolerably certain, that a competitor has no remedy unless a special contract on the part of the committee can be proved. This being the case, and we have stated it scores of times, does not common sense dictate that architects should always require a proper understanding and contract, before they make designs?

*The Islington Vestry-hall* competition will be settled, some expect, this (Friday) evening. As a meeting of the vestry, held last week, the committee, who had been empowered to consider whether the probable cost of the twelve designs for the Vestry-hall returned to the vestry is within the amount advertised, reported that, as it would have entailed considerable expenditure of time and money, they had not availed themselves of the vestry's permission to employ an architect in prosecuting the reference. They had read the specifications, and carefully re-examined the drawings, and they found that, with the exception of the design numbered 32 and 33, they all, according to the architect's statement, came within the stipulated cost. There were several of the designs, they said, not compatible with the requirements of the vestry. After considerable discussion, a motion was carried to the effect, that the twelve selected designs be referred back to the committee, to make a detailed report on the designs, giving a full analysis of each, and that it be printed and placed in the hands of vestrymen.

The personal interest which, it has been shown, several of the vestrymen have in particular plans lessens, we fear, the chance of a creditable decision, and serves to explain why some of the twelve selected designs are in the list instead of better designs left unmentioned. It is asserted that, at the first meeting of the committee, they put on one side all the designs which included a tower! If it were so, this was certainly unjust and erroneous, and probably served to put out of court some of the best designs,—designs, moreover, which might be carried out without the tower. If such was the determination, competitors should have been informed of it in the first instance. Several very sensible letters and articles have appeared in the local papers on the subject. One writer in the *Islington Gazette* says,—

"I would suggest one of two courses; either let the vestry choose anew six plans, and request some gentleman of sufficient standing to decide which is best, or let them direct him to choose six from the

whole seventy-seven, and leave them to make the final selection." \* \* \* "As to cost, no committee are competent to decide that from small-scale plans; they should choose which is best, and let the architect, if he can, procure a secured tender; if he cannot, throw him over and go to the next best. The science of construction lies in getting strength where needed, and omitting it where useless, and it may thus happen that one man may erect his building at a cost, wherein another may exceed one-half for precisely the same thing. Let it be remembered also, that the nicest knowledge of the value of a rod of brickwork,—the keenest appreciation of the fluctuations in the timber-market,—or the best practical acquaintance with the method of rearing streets of houses, so that they will hold together without cracks and settlements just long enough to be sold into other hands, is no more a knowledge of architecture than a scaffold-pole is a building, and this is the sort of error that nearly every committee splits upon. The practice of forty years ago made architecture a matter of book-knowledge, and every smatterer who knew one order from another, dubbed himself a critic. Now that it is rising from its degradation and becoming again an invention—an art—it is still clogged and hampered by the leaven of the old false principles. Some ten or twenty years hence we shall no doubt have a better state of things."

And in the meanwhile the meritorious must often suffer. In addition to a building offering all the accommodation required, the vestry should seek to erect a work which would not simply not discredit the important parish in which it is placed, but would tend to improve the taste of the rising generation, and have a beneficial influence on every building hereafter erected there. An influence either bad or good every public building exerts, and governments, corporate bodies, and parish boards ought to bear this most seriously in mind. The Islington vestry includes men of great intelligence and perfect integrity, and will, we feel sure, experience much regret hereafter, should it, through want of sufficient consideration and exact knowledge, do wrong in this case.

Our statement of current topics, however, has already run to greater length than was intended.

#### AN ARCHITECTURAL REVIEW.

THE LIVERPOOL ARCHITECTURAL SOCIETY.\*

To the quiet followers of intellectual pursuits like ourselves, the notes of war, which have been again heard in the land, are apt to sound peculiarly disagreeable, from a feeling that, beside great national struggles for the securing of liberty or defence of territory, the noiseless march and bloodless triumphs of intellect, whether in science, or literature, or art, may attract to themselves less regard, if they do not lose something of their pertinence and dignity, in the public eye. Yet, if we view this matter rightly, we shall see that there is no time wherein the mental improvement of ourselves and others is more called for than when either national independence or prosperity is endangered.

For the strength of a nation to cope with its enemies, either within or without, consists not alone in its pecuniary resources, but in a great measure in the elevation of mind and largeness of heart of its members; and he who by any means aids in the mental culture of those around him, and assists in the establishment and dissemination through the pores of society of just principles, and right views of things, in whatever department of useful knowledge, not only serves the cause of true learning and enlightenment, but promotes the interest of the state, braces the nerves of the body politic for coming difficulties and dangers, and adds strength to the pillars of empire.

Moreover, it should be borne in mind that the true scholar or artist is directly contributing to that true national prosperity and glory, to which vastness of territory, richness of revenue, and commercial importance, can only be considered at the best as subordinate means and instruments, and which consist in a generally diffused knowledge, a solid literature, an exploring science, a correct taste, purity of life, and the possession of civil and religious liberty—all those things which tend to render private life, in whatever rank or class, dignified and happy. It is these that exalt a nation, and not large armies and navies or even wide-spread dominion—which latter, indeed, if it be obtained, as it almost always is, by violence and wrong, rather degrades than elevates, and cannot be held without prejudice to the interest of virtue among both conquerors and conquered.

Let us take heart, then, and pursue our course with

\* The following formed part of an address delivered by the president, Mr. S. Huggins, at the opening of the session, on Wednesday, the 21st instant.

erect heads, though we turn from battles of the Sepoys to battles of the styles. Peace hath her triumphs as well as War; and while her trophies are generally more enduring and more beneficial to mankind, she gives scope for virtues as noble as ever graced the purest and most patriotic physical struggle. After looking around me as far as my mental vision or means of observation extend, with a view to ascertaining what would be the most pertinent train of remarks I could fall into this evening, and asking myself what were the greatest errors and shortcomings in the present view and practice of the profession—what the worst obstructions to advancement in architecture—the thing that still struck me most as a grievous evil and impediment to progress was the absence of mental freedom in design—the continued fealty, which is slavery, to styles and schools—the lack of judgment and comprehension in the treatment of those materials which munificent time has bequeathed to us from the genius of those who have gone before us. It is not a congress such as proposed somewhere in print a short time ago to settle the principles of Gothic architecture, that we want; such a congress would be as absurd as would a synod to fix the doctrines of religion. It is common sense and honesty among architects and their patrons that we stand most in need of. Circumstances are so different in the present day from those of the age in which the latest of them flourished, that we cannot take any style as such: as styles they are dead, but, like the carcase of the slain lion from which Sampson drew forth honey, they contain a rich nutriment for the architecture of the future. What we have to do with a style is to analyse it, and exercise the constructive power of our intellect in the production of new organisms from its elements. You may take any part of a foregone style as a key note to give the æsthetic tone to what else of modern invention may be brought into contact with it. I do not believe there is any such fixity and immobility between the parts of styles of architecture as is generally supposed, nor so much detachment amongst them. A style may be looked upon as a fluid substance which may be separated at pleasure, and which may be made to flow out into various streams, and mingle its branches with those of other styles widely different from it in original character. The pointed arch was first introduced into architecture for its structural advantages. It has been employed in very different styles, and I believe it is applicable to any arcuated system of building. The cusping is a beauty that is peculiar, I presume, to Gothic, and cannot be transplanted into classic windows; but the Saracenic architects filled in their windows with a wonderful maze of beautiful forms, in the shape of a purely geometrical tracery, that is equal to anything in Gothic; and this I believe to be applicable to windows in any style, such as church windows, that are not to look out of, but only to admit a moderate portion of light. I never considered a high-pitched roof as essential to a building in which a Gothic style of beauty is to reign; nor buttresses as essential to vaults, nor vaults to buttresses. There are modes of ceiling and roofing besides stone vaulting which, in exerting to some extent oblique pressure on the walls, may require and justify the use of the buttress—which feature, by the way, is as properly employed to resist a cylindrical vault as a pointed one. And if a buttressed building may be true and unaffected without a stone ceiling, so on the other hand may a vaulted building be entirely real and genuine, though innocent of buttresses, for you may thicken the walls in order to dispense with them. A building may be true Gothic architecture with a pointed and tracery window, though it have no other feature that is now considered peculiarly Gothic; what else is required being the mere unbiassed offshoot of common sense and a feeling for beauty; and what may seem stranger still, it may be a true Gothic building without any window at all, but lighted from a Gothic skylight. You may build a Gothic cathedral, a Gothic parish church, a Gothic Roman Catholic church, and a Gothic dissenters' chapel, all fully suited to their respective purposes, with equal claims to be considered true works of art.

The purpose of the building, which must always govern its form and all else, may admit of but few parts; but if all the elements proper to its nature and purpose grow round it, it is a perfect work, perfect of its kind. It may not be so great as an edifice that developed all; yet, in being all its purpose required, and all that was contemplated in its design, it is a true and complete work of art; just as one of the lower animals—a dog, or a horse, for instance—is perfect of its species, though it boast not all the faculties of man; and such a structure, however humble its class, is more honourable to the designer, who has, as it were, projected himself into his work, than a reproduction of the Parthenon. We have scarcely yet attempted the revolution in architecture analogous to that in poetry, when, instead of the



remote and historical, the familiar and common were wrought into song. We have yet to infuse the spirit of architectural beauty into the humble cottage, the back street row, the ordinary dwelling, which are to enshrine household virtues and domestic affections as beautiful as the mansion or the palace.

Whether you will go so far with me or not, you will admit that there are many possible modifications of architecture not dreamt of in our philosophy. Let us give up the fear too much entertained amongst us of violating or changing the spirit of style. Let us be free and fearless, and leave styles to their fate. Our English language is not now what it was in structure: besides importations of new words, it has undergone changes in construction also by imitation of the idioms of ancient and modern languages, rendering it more ample and copious than originally constituted. The same is true, probably, of most languages. Who can say that the languages of architecture are not susceptible of similar modification in their structural characters, responsive to the calls of the day and the advance of human improvement?

An important means I am expecting of regeneration to architecture is the introduction of the Gothic style of sculpture into a broad and free Anglo-classic style of architecture, adapted to the general requirements of the day. The genius of the classical sculpture has vanished before the light of Christianity, and is a thing that properly belongs to the past. "It was (as Mrs. Jamieson remarks) the apotheosis of mortal beauty and power, and found early and necessarily its limits of perfection, and the highest possible adaptation of its principles, in the deification of external nature." Gothic sculpture, on the contrary, is the expression of the new and larger life of Christianity, which is no more than the fully developed life of humanity, and is a thing of infinite progression, to the capabilities of which we can see no limits. And while Gothic sculpture is susceptible of much classic tincture, the classic elements are also susceptible of so far imbibing the Gothic spirit in composition as to harmonise with its sculpture. I know of no instance of this having been attempted; but a mixture analogous to it was effected in the sister art of poetry by Milton, when he introduced mythological and classical imagery into his "Paradise Lost," which poem, so far from being injured by it, has, by the author's exquisite management, received increased poetic interest. His breadth and comprehensiveness of mind and power of mental digestion enabled him to see points of unity unseen by less gifted poets, and to lay everything under contribution—his classic lore, his political opinions, his domestic affections, his theological convictions—to the enriching of his great poem.

The true poet weaves all into song; so does the true architect convert everything into architecture. To true art insight and instinct all things are possible. Art, like nature, is ever young, ever renewing and germinating. It has in it something like the force of nature, which appropriates its autumnal leaves as fast as they fall, and extracts from them the sap of life for the nourishment of new forms. Like nature, it has an insatiable appetite for the production of the beautiful and sublime, and its effort is to prevail over the loose materials that come drifting to it from remote ages and lands, and to absorb the dead matter, purifying as it were in the hands of the archaeologist, into works breathing a new and vernal life. Its beautifying spirit possesses an adaptive and restorative energy that brings all into order, and gives to everything its due rank in the new realm to which it is introduced.

The great and paramount thing is to respond truly to the wants, in strict accordance with the means, of the present day and country. A change has come over the spirit of our dream since medieval times. A change is constantly and must be evermore coming over the dream of our life; a change that I believe manifests itself even in the human countenance in the course of generations by the action of new circumstances upon the soul, of which it is the index. The great duty of the architect is to recognise this change, which he does not do when he bedsacks a Gothic church for the religious rites by—a space in which changes have taken place ten times as great as any that occurred between the widest periods of the style; changes produced by new and revolutionising discoveries, by reformation in religion, by new institutions, and by the revival of classic literature and classic architecture, which latter alone would have a wonderful influence upon the Gothic style were it allowed fair play; for there is a great deal in the decoration and detail of even the best periods of Gothic architecture that Attic taste cannot well endure, and that no man would repeat who had rightly studied and refined himself by the classical remains.

It is absurd to contend, as has lately been done,

that because we are a Gothic race we must naturally love pointiness and that quality of form called rigidity, and which is present in a pointed and absent in a round arch. Revived ancient learning and classic art compose a leaven which has been working against this instinct for the last 300 years. The goodly works of Homer, Horace, Euripides, Æschylus, and the rest, like beautiful exotics transplanted into our intellectual soil, have taken deep root in it: their fragrant virtues have penetrated through all the pores of our civilization and education, and imbued every English mind with their sweetness to such an extent that, though of Gothic descent, I should think there would now be a difficulty in finding anything of purely Gothic feeling or character among the educated natives of these islands, and that this difficulty will increase with every passing generation.

Nor is that classic style which, under free and independent treatment of Greek and Roman architecture, would be originated in England, identical with that style which arose beneath the blue skies and glorious sunshine of Italy—a land wherein those mysterious relations which exist between the various beauties of nature and the deep emotions of the soul must be more vividly felt than in our less genial clime. We are graver and more abstract: we are a more domestic fire-side-loving people than the natives of Italy; and our deepest chords are tuned, and imate poetry brought out, by blendings of the influences of nature and life, differently proportioned to those which operate on the Italians, and such differences must of necessity lead to different utterances in the way of art—a truth which will be the more readily admitted when we consider that even in the different states of Italy local influences affected it, and Rome, Venice, Florence, Lombardy, and Bologna had their separate developments, just as distinct as were those of England, France, and Spain. The Venetian style of Italian architecture, which has been the general model to the architecture of England as well as to the rest of transalpine Europe, grew up amid scenes and circumstances very different to those which exist and operate here. As might have been expected from the character and habits of the people at the time of its origin, its aim was magnificence, luxury, pomp, gay floridity of ornamentation diffused over the entire face of the work, which is broken up into numerous minute parts and divisions—qualities which those of a purely Anglo-classic architecture would be almost diametrically opposed to. Chaste grandeur of form and proportion, concentration of decoration, contrasting with masses of plain wall, firmness and greatness of parts, and breadth and power of effect, such as shown by Wren in the west front and dome of St. Paul's Cathedral would be the most natural to and best express the English feeling and character, which the architect just named, Sir Christopher Wren, may be considered to have more truly represented than Luigi Jones, who was a less original illustrious—that is, was more indebted to Italy than his illustrious successor. While Greek architecture is too cold for this climate, the Italian is somewhat too warm; but architecture may be chaste without being cold, and warm without being corrupt.

What Italy has done for us is the furnishing a bright example of ancient architecture, reformed upon modern ideas, and extended to general purposes. Italy has given us new elements and features: it has solved many architectural problems. It has originated what may be called the order of fenestration—no unimportant one—but it has not given us a stereotyped style, much less patterns for individual works. The Italian styles and examples, as well as all other styles and examples, are to be taken as food for the æsthetic faculties, and not literally, and without digestion, appropriated. They will furnish us with symbols of thought whereby to embody and express our new and enlarged sense to our contemporaries, but they can properly do nothing more.

The most prominent fact discovered by what is called the great Government competition (great drawing match would be a more proper name for it) is that a practice directly the reverse of what I have been contending for reaches to the very highest places in the profession. The present method of architectural design seems to be not to exercise what inventive power is possessed, in the formation and decoration of a shell or carcase distributed horizontally and vertically in accordance with the building's purpose, but to take an illustration of some imposingly executed design, spoil it in order to conceal the theft, and then draw a plan and section to suit it. Several of the premiated designs are little more than copies of French, Italian, and other continental buildings; and many of the others, when divested of their gay bedizenery and getting-up, in which everything was done that could be done to mislead the judges as to the relative merits of the designs, and shown up in the truth-telling dress of the engraver, exhibit little else than a collocation of windows and columns, and

the most hackneyed features of the style, without a spark of ingenuity, novelty, or feeling.\*

#### HOW ARE WE TO REVIVE GOTHIC ARCHITECTURE?

THE *Builder* for the 10th inst. contains an abstract of a paper read by Mr. Scott at the meeting of the Yorkshire Architectural Society, held at Doncaster, on the 23rd ult. "On the Present Position and Future Prospects of the Revival of Gothic Architecture." As this is a subject to which I have for some time past given much thought and attention, I may, perhaps, be allowed to say a few words touching the means by which it seems to me that the principles of this revival—now that they are firmly established—must be carried out.

After describing the causes which gave rise to this spirit of revival in church architecture, and passing not undescribed eulogiums on those who were mainly instrumental in bringing about a general revolution in this respect throughout the country, the writer goes on to say that we have at length "succeeded in obtaining a fair knowledge of Mediæval architecture; whether at home or abroad, and in mastering its general principles. So far as this goes, we have fairly cleared the ground before us, so that there is no more difficulty for a student in making himself acquainted with Gothic than with the so-called Classic architecture: this is no small achievement, to have thoroughly mastered the grammar of our art." It is, indeed, no small achievement. But, as every schoolboy knows, it is one thing to know the "As in present" and "Syntax" by heart, and another thing to be able to compose good or even decent Latin prose. Neither will an accurate acquaintance with the details of the various styles of Gothic architecture enable a man to design, though it may teach him to imitate a Gothic building. It is not merely by observing the details of window tracery, mouldings, and the like, that we can hope to attain to a practical knowledge of our "national" architecture, but by observing the spirit by which the builders of the Middle Ages were actuated in designing new forms, and in borrowing suggestions from the architects of other nations. It is in this last respect, as it seems to me, that our architects at the present day most signally fail. We cannot produce new forms of beauty in our architectural designs in the same manner as our Herefordshire elder-makers get new sorts of apples, by grafting; though some of our modern-Gothic architects,—some, too, who stand high on "the blazing scroll of fame"—seem to have adopted some such a botanical expedient, giving us now a chip of Italian pine, now a slip of one of those tall ugly poplars which line every canal and every tall ugly poplars in some parts of "la belle France." For heaven's sake let us have no patchwork churches! We want no foreign grafts. The old stock is not dead yet; but is able and willing to yield us as goodly fruit as ever grew thereon in our forefathers' days, if only we will treat him as kindly and as tenderly as they did.

The "Lancet period" of English architecture is marked by features peculiarly its own, and which render it perfectly distinct from the contemporary styles of the continental nations; and in beauty of form and proportion (both in elevation and ground plan), in the boldness and elegance of its vaulting, and in its exquisite treatment of detail, especially in the sections of its mouldings, it immeasurably surpasses them. Even when they borrowed from the French the first elements of tracery, our English architects took good care to avoid the error which their continental brethren almost invariably fell into, of making the circle fill the whole head of the window, thus bringing the heads of the lights below the real spring of the arch. Working upon the hint thus borrowed, but without for one moment forsaking those principles of beauty which had hitherto distinguished their works from the productions of their neighbours, they produced that style which Mr. Scott has justly termed "the noblest period of our indigenous art,"—"the noblest style of architecture which has ever prevailed," and which has the additional merit of being essentially "our own."

In time, however, the constant repetition of the circle was found wearisome, and thought not to fit well into the form of the pointed arch. After adopting various expedients to get rid of these defects (among the most successful of which was the occasional substitution of the spherical triangle for the circle in the heads of the windows) our builders seem to have borrowed another hint from the French, and to have adopted from them the system of curvilinear tracery. Unfortunately, however, in borrowing the beauties, they borrowed also the defects of this style, and by degrees lost sight of that distinct subordination of parts, and that depth and boldness of moulding by which the "Early Decorated period" is distinguished. In the decline of the style, indeed, the tracery is

\* To be continued.



marked by an interweaving of the mullions, which suggests the idea that they are bent out of willow wands, instead of cut out of stone. It was this want of constructiveness which led to the adoption of the Perpendicular style, which was distinguished by an appearance of stability and bracing of parts which form a favourable contrast to the "finikin" prettiness of the contemporary styles in France and Germany.

Thus the various styles of English Gothic architecture form one unbroken chain, the several portions of which are so intimately linked together as to seem to grow each one from that which preceded it. If, then, we are to take up and carry on the chain which our forefathers have forged, we must take it up at the link at which they let it drop, in order to introduce foreign material.

Let us persist in the endeavour to produce new forms of beauty in geometrical tracery; and, when we introduce *curvilinear* forms, let us adapt to them the bold deeply cut mouldings and constructive character of the leading lines which mark the architecture of "the later part of the thirteenth century," taking care never to allow the pattern of the tracery to appear cut off by the arch of the window, as is frequently the case in Late Decorated examples. The tracery should always fit into and fill the window arch.

I cannot agree with Mr. Scott in considering the "French architecture of the thirteenth and fourteenth centuries" as the "great central type of Pointed architecture." Compared with the English architecture of the same period, it appears signally deficient in that very "vigour of sentiment and masculine boldness" which he professes to admire in it.

The external outlines are generally clumsy, and the buildings seem absolutely groped up by an exaggerated system of buttresses. The vaults are poor, and badly constructed; and there is a paucity and shallowness about the mouldings, which contrast but poorly with the bold rounds and deeply-cut hollows of our "Early English" and "Early Decorated" styles.

"Having once, however," as the writer says, "agreed on a common basis, our course must be perfectly free and unfettered. Our aim, it is true, must still be one—to construct on this basis a style which will meet every exigency of the day; but in following up that aim there is the utmost scope for individual talent, and for the most exalted efforts of individual genius. The greater the number of minds brought to bear upon this work, the more copious will be the regenerated art, so only that all work upon the same foundation, and aspire to the same result."

The suggestion of an art-workman, at the meeting of the Architectural Association on the 2nd instant, that "a class" should be started "for practice and working drawings, where the artisan might join with the junior architect," seems to me to deserve our best attention, as a means calculated to promote the great cause which we have in hand.

I am glad to see that attention has at last been called (by Mr. Denison, at Doncaster) to the "stupid and conventional and unobserving practice of all the architects' offices, of setting Gothic windows, as they do Italian ones, twice as near to the outside as to the inside of the wall." This is a fault which I have observed in almost every single modern Gothic building which has come under my notice, and which is utterly destructive to the effect of window-tracery, by preventing the mullions from casting a proper amount of shadow upon the glass.

W. P.

#### WORCESTER CATHEDRAL AND THE NEW WORKS.

THE strictures upon my papers, which have appeared in the *Builder*, of the 3rd and the 17th instant, seem to demand a reply, which I should certainly have withheld had the writer confined himself to an expression of dissent from my opinions, without impugning the accuracy of my statements.

Your correspondent, with wonderful recklessness of assertion, affirms that "neither paint nor varnish has touched the marble." In my first visit to the Cathedral of Worcester, I was struck, as I think every visitor must be, with the disagreeable hue of the Purbeck shafts, recently disencumbered of their whitewash. I ascended into the triforium, touched the shafts, to which I found my fingers adhered, and perceived, or thought I perceived, the smell of paint. I was subsequently informed, by one who must have had personal knowledge of the fact, and who could have been influenced by no motive to mislead me, that the marble had been subjected to the process I have described. "C. B." appears to have been otherwise informed; but I am not disposed to doubt the evidence of my senses, and my informant's statement, upon the unsupported contradiction of "C. B." Let it be confirmed by the architect, and I will cheerfully and unreservedly admit my error.

I knew, quite as well as your correspondent, that the restoration of the south transept front had been effected by carefully replacing, in every case where it was possible, the original stones. I have watched for weeks the process of cleaning, and preparing them for this purpose; and I allow that I should more accurately have described the present condition of this portion of the cathedral by an employment of the word "replacement" rather than "restoration." But I am unable to perceive that, by this misuse of terms, I have inflicted any wrong upon the architect. In the view I took of the matter, he was entitled to the praise of a faithful and exact imitator. "C. B." places him *quoad hoc* upon a level with an intelligent mason who, I suppose, would have refitted the stones quite as well as the architect.

Your correspondent takes exception to the opinion I have expressed regarding the new pinnacles. This he does after a very disingenuous, or very ignorant fashion. He says that, I "pronounce the new pinnacles to be immoderately heavy." What I have written is, that the *octagonal covering* is "immoderately heavy." "C. B." has been informed that the design has been carefully studied from one of the best original examples, from which they differ only in being somewhat lighter. Ay, lighter, but in what respect? Why, in the open part, the sub-structure, the shaft, and arched openings, which present a shocking disparity with the heavy stone pyramids. Why, here is the very mistake which has been committed laid bare, and my criticism justified to the very letter. If this be "C. B.'s" method of defending his friends, well may the architect exclaim, "*Non tali*," &c.

The information communicated by "C. B." that the "actual eastern end of the cathedral, with its window group, is new, both in design and in construction," may be accurate, and I do not doubt that on this question "C. B." is the faithful exponent of the opinions of others; but if this be so, what becomes of the statement so industriously propagated (it found its way into the *Builder*, August 22, p. 481), that the architect possessed proofs that the ancient window was of five lights, and that the new window was constructed in accordance, &c.? If this be so, how are to be justified the praises heaped upon the architect, for his wonderful sagacity in discovering and seizing upon the design of the first great master-spirit and designer, and in faithfully carrying it out? Again, I say, *non tali*, &c.

Your correspondent erroneously represents me to have said, that the great east window, "with the gable trefoil," has taken the place of the Geometric window of nine lights. Does "C. B." seriously intend to assert that he ever saw an Eastern Decorated window, of which the summit rose up into the gable above its horizontal string? Such an arrangement, I would venture to say, nowhere does exist, except in the imagination of "C. B." I was not aware that the window in question was of so recent a date as has been communicated to "C. B.," though, from the coarseness of its execution, and inelegance of composition, I did presume that it was not of the period represented by its design.

"C. B." complains that my papers leave many points of interest in Worcester Cathedral, untouched. Undoubtedly they do; but even "C. B." will discover, when he undertakes that which he has not yet accomplished—a diligent, sustained, and thoughtful examination of Worcester Cathedral—that a description which should embrace every detail and feature of so vast an edifice would fill a number of the periodical which received my humble contributions; and, even after such a reaping, there would remain much for careful gleaners.

My object was simply, as must be the purpose in all similar cases, to direct attention to the salient points of interest, exercising, of course, that discretion in my selection for which I must be held responsible.

"C. B." does not coincide in my opinion, that the great transept was originally built in conformity with the choir and Lady chapel. The means of arriving at an exact estimate of the date are, I confess, but scanty. My opinion was mainly determined by the vaulting pillars; and, until the contrary be proved by documentary proofs, I am prepared to maintain, that the internal evidence is in favour of the Early English origin of this portion of the cathedral.

It is quite true that the anomalous pier to which my description alludes is the "first," not the "second" from the west on the north side. From this admission I leave "C. B." to expect all the consolation it may be capable of affording him, and cheerfully award him the praise which is due to the author of so notable a discovery, if so be that he were really led to it by his own researches. Of this fact I entertain some doubt.

"C. B." again, cannot understand what is meant by the statement, "*preceded by a screen of triple arcades on shafts*." I regret to find that he was

here momentarily deprived of the assistance of his faithful monitor, and commiserate the dimness of his perception when illumined by no borrowed light.

As to the inaccuracy in my description of the mural painting of the crypt, it amounts to this. I have spoken of the representation of a *trefoil-headed arcade*, which appears to be formed in part of *cing-foiled* arches, and I have not correctly described the esutcheons. I visited this crypt in the obscurity of a gloomy day. Your correspondent, more highly favoured, saw it by the glare of an artificial light. Had I become aware of the figures of bishops of which "C. B." speaks, I think it probable I might have been more particular in my notice of this fresco, my chief object of drawing attention to which was to indicate its probable date, that it might not be supposed contemporaneous with the wall which it decorates. I do not at all doubt the greater correctness of "C. B." in this instance, and can easily reconcile myself to the error I committed, inasmuch as it has been the means of procuring to the readers of the *Builder* a more accurate description of a very interesting relic.

I expressed the opinion, in a guarded way, that "a quarter of a century intervened between the completion of the opposite sides of the nave." But, in so doing, I never entertained the concealed idea that I was fixing the precise interval which separated the declension of style observable in the south side from the purer exhibition of the decoration of the north one; nor do I comprehend how my lesser computation can be held to exclude the greater. I think this criticism is justly chargeable with a want of candour.

"C. B." is displeased that the exterior of the cathedral does not call forth my admiration, and proceeds to characterise my very summary account of it as incorrect. If he value truth and candour, he is bound to particularise the statement to which he attributes inaccuracy. My paper contains a reference but to these facts—the absence of a pierced parapet; the ungraceful composition of the buttresses; the disappearance of the ancient turrets; the presence of a corbel table; a line of trefoil holes in front of the porch; and the disagreeable form of the summit of the windows. I challenge your correspondent to convict me of inaccuracy in any one of these details. I regard the statement made by "C. B." at Worcester, that the exterior of the cathedral equals in beauty the interior, as simply preposterous, and am quite prepared to abide by my expressed opinion of its unsatisfactory outline, its paltry detail, its present desolate aspect,—an estimate in which I am supported by some of the most distinguished archeologists of the country.

Here I wish that "C. B." had seen fit to conclude his strictures. I wish it for his own sake, for the sake of the architect, and on my own account. But the animus with which his censures were penned was not to be concealed:—"Viator," he writes, "comples with his mistakes statements which might detract from the reputation of the workmen who have executed the restorations." This is a disingenuous, an unjust, and injurious aspersion. I have written nothing which can justify it; and so far from having indulged in detraction, I have bestowed my humble meed of approbation on the way in which the works have generally been completed. In one instance, it is true, I ventured to doubt if the imitation equalled the model; but this is a mere question of individual appreciation, for an honest exposition of which I did not anticipate that I should be branded as a defamer of the reputation of men worthy of all my respect.

"C. B." further ventures to charge me with "the habit of reflecting upon the dean and chapter." I am quite convinced that "C. B." is in as complete ignorance of my habits as I am of his own. But of this he may rest satisfied.—I entertain as deep a respect for the dignitaries of our Church, which I value as the foremost blessing of our favoured land, as can be felt by himself. I never have happened to express in words an opinion favourable or unfavourable respecting any dean and chapter; and I believe the words never before dropped from my pen. But is it not a notorious fact—a fact we all deplore—that in times past deans and chapters have unfortunately been led to give their sanction to the erection in the buildings of which they are the constituted guardians of hideous obstructions, such as those to which I alluded? And was it not permitted to me to deprecate the continuance of this practice without exposing myself to the charge of habitual slander?

But—"he omits all mention of the architect." *Hinc illa lacryma.* He has not rendered his papers the vehicle of the laudation of the architect: here is the cause which stirs the bile of your correspondent. He has not re-echoed the prejudices and jealousies of a little provincial coterie, and therefore he must feel the weight of their displeasure. But will not the architect bear with equanimity this neglect of his merits? Will not the admiration (fulsome some people were pleased













CHURCH OF NOTRE DAME DE DADIZEELE, BELGIUM.—MESSRS. PUGIN AND MURRAY, ARCHITECTS.



## SUBWAYS.

SIR,—When the Metropolitan Board of Works decided upon a competition, they issued an advertisement, which, although indifferently and loosely drawn, and open to variety of construction, stated plainly enough certain conditions to be observed, among which were, that the sewers should be of a given depth and area; that the first-class subways should contain street and leading mains for the surrounding districts; and that descriptive details should be given as part of the design. It might have been expected, therefore, that these requirements would have been found to be complied with in those selected for premiums, and that the detail necessary to carry out any system of subways would have, in all cases, been shown upon them. We will see if this has been the case.

**First-class Street.**—Design for first premium. The leading and only original feature in this is the construction of vaults beneath the whole of the subsoil, the subway being in the centre of them. Upon the score of expense alone this will prevent, in all probability, its ever being carried out; but the system is, moreover, wrong in principle. In other respects this design complies with neither of the requirements as regards depth or size of the sewer. The construction is deficient in strength, and no details are given of the ventilation, means of entry, or working shafts. The whole arrangement is, indeed, crude in the extreme, and to this may be added that the estimate appears to be extraordinarily small.

Design for second premium has the leading principles of the former, but shows more consideration: the author evidently, however, has not the knowledge of the requirements of the traffic of a large town, for the coal-shoots are to be in the carriageways, which is most objectionable, and a double curb would exist, which is without exception the most vicious and dangerous way in which a highway can be laid out. Whenever the gas-mains, which are proposed to be in separate channels by the side of the curb, require alteration or work to them, it would have to be performed from the street as at present, although perhaps with less inconvenience to the public, and no provision whatever is made for leading gas-mains, which is an absolute want. The designer has perhaps adhered sufficiently closely to the conditions given in the advertisement in other respects, and the estimate is certainly far nearer the truth than that of the first.

Design, third premium, is entirely different from the two preceding. Subways being formed close to the vaults on each side of the carriageway, the sewer being placed in the centre of the road, the galleries have not room for leading mains (one of the express conditions), nor for men to perform at ease any of those operations in them which they must do if the system be carried out: the sewer is placed so that the ground must be broken up for a drain to be connected with it or to be cleaned if necessary. The way the gullies are to connect with the sewer is bad; the means of access and for lowering pipes are left to be guessed at; whilst the ventilation proposed is open to grave objections.

**Second-class Street.**—Design, first premium, is nearly the same in principle as the last-mentioned, with the exception that there are to be two sewers, as well as two galleries. The terms of the advertisement appear in the main to have been complied with, but the subway is ridiculous in its dimensions, and shows no knowledge of the conditions which a subway to be efficient must ensure.

Design, second premium, has likewise two lines of subway; it labours under the disadvantage in respect of the situation of sewer that the third design for the first-class street does, and the dimensions of the subway are far too small for practical purposes.

Design, third premium, proposes, apparently, to form vaults under the whole of the public way like the first and second premiums for a principal street: it is original in design, and would be subject to the risk of the sewer bursting or leaking into the subway. The means of getting into this sewer are not shown, and not easy to imagine, nor the means of getting rid of any water which might leak into the gangways; and if openings from them are made into the sewers, then they would be flooded whenever the water rises above its ordinary level; and if the sewer ran full, or nearly so (which it may be presumed it would occasionally do), the vaults and basements of the houses would be inundated. It is not clear why this should have been considered by the judges adapted for a second-class street, inasmuch as it has all the dimensions and accommodation for the first-class street. This also enables to be seen the different modes in which estimates are made out, for whereas the cost is put down at 397. per yard lineal, *without vaults*, the first prize design, first-class street, for nearly the same thing, but *with vaults* up to the fronts of the houses on either side, is estimated at but 367. per yard lineal.

Such are the designs to which premiums have been awarded, and it is difficult enough to guess at the

principle which guided the judges in selecting them. They may be divided broadly into two classes,—those which propose subways in the centre, and to construct vaultage beneath the whole surface of the street, and those which propose lines of subway upon each side only. The first class, which suggests a system by no means novel, but not less objectionable, found, apparently, the most favour; for to them are assigned the highest premiums, whatever may be the estimate of their probable cost, their deficiency in detail, or compliance with the conditions of the advertisement. But this vastness of design, which appeared desirable in one class, was not so in the other; for, singularly enough, the latter appear to have been chosen on account of the smallness of their dimensions; and, whilst other designs embody the same ideas, and in which the detail of the subject has been considered, and which are practicable as regards dimensions, those only have been approved which are far too small for any serviceable purpose.

When the judges say "no general principles were found to apply," and that they have selected those most "susceptible of practical adaptations," they imply clearly that their own mind is made up as to what the fundamental necessities are and the ruling principle must be. If this is the case, it would have been well if they had intimated them in their straggling advertisement, and if, as from the reading of that it may be supposed, they had not formed conclusions at that time, it would be most satisfactory to the public and all the competitors, now that they have done so, if they would make them known.

## MONUMENTS AND MEMORIALS.

**Ely.**—The undergraduates' window in Ely Cathedral, just completed by Mr. Wailes, of Newcastle, has been put up, and forms a counterpart to the opposite lantern window representing the history of Etheldreda. The undergraduates' window contains figures of Archbishop Dunstan, Withburga, Edward, Edgar, Abbot Bithmoth, and Duke Brithmoth. There is also now being laid in Ely Cathedral, at the back of the reredos, a monumental mosaic slab, to the memory of Bishop Allen and his wife. It is by Ls. Liesching and Co. of Paris. The centre is a figure of 8, containing the family arms, which, as well as the outside panels, is bounded by pierre lithographe, and the mosaic work is formed by an admixture of porphyry, black marble, white and green enamel, and malachite.

**Cornard Parva (Suffolk).**—The east window of the parish church of Cornard Parva, near Sudbury, has been filled with stained glass, the gift of Mr. John Siles, of Sudbury; it is to the memory of his late wife. The window is in three compartments, and the centre medallion contains a figure of our Saviour, after Murillo, encircled by angels, with the text at the foot of it in old English,—"I am the way, the truth, and the life." On the left, the Saviour is represented as pointing to the vine, with the text, "I am the vine," &c.; and on the right as the good shepherd, with the text, "I am the good shepherd," &c. In the upper compartments are representations of the four evangelists. The artist was Mr. Clutterbuck, of Stratford, in Essex.

**Stratford.**—It is proposed to erect a gigantic public lamp in the Broadway, Stratford, in memory of the late Mr. Samuel Gurney, a benefactor of the town and district.

**Sheffield.**—A monument to the memory of Mr. John Harrop, in the Elizabethan style, designed by Mr. Hadfield, has been placed in the Sheffield cemetery, near the spot where rest the remains of the revered James Montgomery. The deceased was a builder, and a native of Doncaster. The monument bears the following inscription:—"This monument was erected in remembrance of John Harrop, of Sheffield, builder, by the members of the Master Builders' Association and his friends, as a token of their esteem for his general character as a tradesman, his uniform kindness to those of his own profession, and his steady adherence to the great principles of truth and equity. Born February 2nd, 1795; died May 2nd, 1855."

**Cheltenham.**—The *Carlisle Journal* speaks of a visit to Messrs. Scott and Drape's establishment, to inspect a portion of a window which they have now in hand for the chapel at Cheltenham College. The stonework of the window will be of Gothic architecture, and the design for the stained glass is in the Perpendicular style. The window will be 25 feet high and 14 feet wide. The design comprises fourteen figures, representing our Saviour, the Apostles, and Evangelists, each about 4 feet high. The figures are arranged in two rows one above the other, and are surrounded by perpendicular canopies. The tracery above is in character with the other parts, and is executed in monograms, sprigs of ivy, &c. The central light in the tracery will contain the arms of Mr. Dobson, the principal of the college.

**Monument to Mungo Park.**—The *Border Advertiser* states that steps are now being taken to erect a

monument to Mungo Park, the celebrated African traveller. A committee, which was appointed in 1841, for the purpose of raising subscriptions in Selkirkshire, his native county, and in the neighbourhood, have announced that they have sufficient funds to warrant them in proceeding with a "plain and simple structure."

**The Scutari Monument.**—Baron Marochetti's monument, to be erected at Scutari to the memory of the British officers and soldiers who fell in the Crimea, was recently about to be shipped in the barge *Kyanite*, of Plymouth, Capt. James Handford, which vessel, after taking on board the sculptured marble in London, was to proceed to Penryn, and there receive the granite base and pedestal, worked in the quarries of Messrs. J. and W. Freeman, and thence convey it to Constantinople.

## THE LIME PROCESS FOR TREATING SEWAGE.

WILL you permit me to correct a statement which occurs in a leading article of your journal (p. 590), and which, mentioning the lime process for treating sewage matter, speaks of it as having been patented by Mr. Wicksteed. Now, as this is wrong, and calculated to do injury to me, I beg to be permitted to state that the lime process, which was invented by me in 1844 (and of which I can bring indisputable evidence), was patented by me in 1846, being the first patent ever obtained for treating the sewage of towns, as is stated in Mr. Austin's report, page 20; whilst Mr. Wicksteed's first patent bears date 1851, as may be seen in the same report. I trust, also, you will afford me the opportunity of controverting the statement which has been made, and is now reiterated in the same article, viz. that not more than one-seventh of the fertilizing matter can be collected by this process: if so, what becomes of the six-sevenths? Can it be found in the water? I affirm it cannot: I challenge the proof that it can. The manure has been often and extensively tried, and has produced the most decided and satisfactory results, and has proved, to those who have fully acquainted themselves with its properties, that it is far too valuable to be disposed of in the manner proposed.

WILLIAM HIGGS.

\*.\* We were quite aware that Mr. Wicksteed's patent was considerably later in date than that of Mr. Higgs. The processes may be said to agree in the use of lime for the precipitation of the "solid matters in suspension," as they are spoken of by Mr. Austin. The mechanical details of the processes, on which much depends,—as in the matter of drying the manure to make it portable and commercially valuable, which is the real difficulty,—however, are different; and if it were possible to apportion relative claims, the main credit should be given to Dr. Clark, of Aberdeen, who in his "new mode of rendering certain waters less impure," &c. now well known, but which dates from 1841, showed the way to subsequent inventors. Much credit is, we believe, due to Mr. Higgs; but we referred specifically to the patent of Mr. Wicksteed, and did so because it is that which the reporters happen to have considered as having the best claim in their attention.

Mr. Higgs is in error in representing that we said that "not more than one-seventh of the fertilizing matter can be collected" by the lime process: we did say, referring to the different processes, that at best they left the bulk of the valuable constituents in the supernatant liquid; and we also said that six-sevenths of the valuable constituents in sewage were there, in solution. We do not know what commercially valuable proportion of the whole Mr. Higgs can collect: we never asserted that six-sevenths could be found in the water as left; but we do find, in the reports which we referred to, frequent reference to the powerlessness of the lime process to remove a very considerable proportion of the soluble fertilizing agents of the original sewage, whilst we also find the conclusion by Dr. Gilbert (Appendix XII. to the Report on the Main Drainage of the Metropolis, p. 479), on the authority of the examination by Dr. R. A. Smith, that the fluid, though at first cleared by the lime process, would, after a short time, again manifest putrescence. A similar inference as to the objectionable character of the fluid run off from the lime deposit would also be inferred from the words of Dr. Hofmann and Mr. Witt; and if the supernatant liquid does flow off, as we are told, in a comparatively pure state, it seems that some of the matters in solution are disengaged; and though these at Tottenham are not allowed to escape, so that "the whole establishment" is represented by Mr. Austin as "perfectly free from noxious or unpleasant odour"—it is doubtful whether the advantage of such a process for London is not, as put by the reporters to the referees, unestablished. We are, however, anxious to do justice to the efforts of all those who are trying to solve this most difficult problem of sewage utilization:



there are individuals, like Mr. Higgs, who have devoted long years and much thought to the subject, and who, we hope, will eventually realize a reward for their labours and investments. As regards the Tottenham sewage, we are told that it commands a price of 4*l.* 10*s.* a ton, and that the demand last season was greater than the supply.

#### THE NUMBERING AND NAMING OF THE METROPOLITAN STREETS.

It has before been suggested in these pages that few things are more difficult than for a wandering stranger in London to find his way at night. Even those tolerably acquainted with the town do not easily make their way in neighbourhoods to which they are not well accustomed. In some instances the names of the streets are imperfectly marked: in others the gas-light is so placed as not to make the name very visible; and then, when a street is found, it is not often easy to find the particular number of the houses. This might be readily remedied by marking the lamps with a faint, yet distinct colour, which would not obstruct much light. Firstly, there should be the postal division of the district; secondly, the name of the street and number of the house adjoining should be painted on the lamps at the commencement of each street, and repeated at intervals, one at each cross street; and on every lamp there should be the number of the house opposite to it.

This plan has been introduced into some towns northward, and has not been found very expensive. It must be evident to all that if this plan could be generally introduced into the streets, it would be a very great facility to the public, and at the same time offer as a means of facilitating the delivery of letters by the postmen, being in suburban neighbourhoods, where the gas-lights are few and far between.

#### WIMBORNE MINSTER RE-OPENED.

Flags and streamers waved from the towers of Wimborne Minster on the 29th ult.; the shops were closed, and strangers flocked into the town to be present at the re-opening of the Minster, which has now been closed for nearly two years, and during that period has been greatly renovated.

Mr. Charles Mayo, of Queen's College, Oxford, who is about to publish a history of the Minster, gives, in the *Dorset Chronicle* of a recent date, some account of the restorations, prefaced by a few notes of the history of Wimborne Minster, and we shall take the liberty of condensing his remarks for behoof of our own readers.

The town of Wimborne Minster claims an antiquity of about fifteen centuries. Its Roman name was *Vindoladia*. After the Roman occupation had ceased, little mention is made of the town till, in A.D. 713, Cuthberga, sister to Ina, King of the West Saxons, founded a nunnery here, over which she herself ruled.

There seems to be no reason to doubt that Cuthberga's church and nunnery occupied the site of the present Minster, though no part of her work now remains. Traces of an older building, which may possibly be hers, have been found in excavating under the present church. The oldest portions of the existing church, namely, the central tower, below the triforium arcade, and the parts immediately adjacent, were probably erected in the early part of the twelfth century. If this conjecture be correct, the arches abutting on the tower to the east and west are very early examples of the Pointed arch. The rest of the church was completed soon after, in the form originally intended.

The exterior now presents a very different appearance from that which it bore two years ago. We have no longer the broken-down dilapidation caused by years of parsimony and neglect; neither have we, except in the pinnacles of the central tower, and here and there on the transepts any of those hideous deformities in the perpetration of which the churchwardens of past generations delighted. The entire rebuilding of the choir aisles, the re-casing of the sacristy and library, the restoration of the porches, and the repairs of the western tower, and the substitution of new roofs throughout the whole building with the exception of the transepts, contribute to this changed look. The transepts are the only parts not yet restored. The exterior of the church is so well known that it is unnecessary to describe it. On entering at the west door we gain a view of the entire length of the church. The tower was formerly quite hidden from the church by the blocking up of the tower-arch; it has now been thrown open, the great west window and door and the groined ceiling replaced, and an elegant decorated screen restored to its former position across the arch. The front now occupies the centre of the space under the tower: it is Early English, of plain character. A curious old orrery, connected with the clock above, is fixed on the south wall. The southern pier of the tower-arch was found

to be very defective: a great part of it has been cut out and replaced. The boldness of this operation, and the indifferent masonry of the tower, have given rise to some fears for the safety of the upper part; but it gives no sign of being unsafe, now that all the supports have been removed, and the ponderous peal of eight bells has been testing the stability of the tower repeatedly during the opening week.

The nave has been fitted with oak seats of plain design by Messrs. Holland, of London, by whom also the roof (the gift of Sir Richard Glyn, Bart.) and all the woodwork of the church have been executed, except the roofs of the side aisles of the nave, which are by Wimborne builders. Some of the columns have been entirely rebuilt, and the foundations everywhere secured without disturbing the arches. The clerestory has also been taken down and rebuilt, and the windows of the Norman clerestory underneath it, formerly hidden by plaster, again exposed to view. The mouldings, string-courses, &c. have been cleaned and divested of their coatings of dirt and whitewash. The new roof is in the Perpendicular style, with hammer-beams and gill bosses. The central tower is open as a lantern. The walls have been strengthened with iron bolts and other contrivances, and the interior has been cleaned and restored. The ceiling is painted in bright colours by Castell, to whom all the decorative colouring and gilding have been entrusted.

The stained glass in the church has been given by various persons. In the choir, the three lights of the east window, and those north and south of it, are gifts of the Bankes family. The centre light is of foreign glass, the rest by Willement. Ten small clerestory lights in the choir, by Castell, were given by subscription. The east window of the south choir aisle, containing thirteen different subjects from the life of our Saviour, by Lavers, was given by Mr. Thomas Hanham. The side window, given by the Duke of Beaufort, and by the ladies of Wimborne, is by Willement (inserted by Miller), and by Heston and Butler. Four windows raised by subscription have been put up in the crypt by Lavers. The side window of the north choir aisle was given by the Earl of Devon (Willement; inserted by Miller); the Castleman family (Gibbs); and the Fryer family (Heston and Butler). The third window of the nave clerestory on the south side was given by Mr. T. Wyatt, the architect.

#### THE SANITARY CONDITION OF SHIPS AND STEAMERS.

We have before now directed attention to the unsanitary condition of a portion of our shipping, and are not surprised to hear these statements confirmed by the report of the Registrar-General of Health of last week.

A Scotch schooner, the *Favourite*, of Crail, reached the Tyne from Hamburg, and reported that one of the seamen, named William Graham, was ill of cholera. Mr. Hart, surgeon, proceeded immediately on board, and, seeing the man was in a state of collapse, had him removed on shore, where every effort was made to restore animation, but he died on Monday morning. He had been ill four days. The authorities are fitting up an hospital, so that in case any more vessels from North Europe should reach the Tyne with disease on board, patients may be removed on shore without being brought in contact with the general population. We are glad to learn that the authorities in all the north-eastern parts of the coast are adopting precautions.

Another fatal case is reported at Horsleydown, on board the *Lutken*, on the 22nd of September. The ship *Lutken* arrived at Horsleydown on the afternoon of the 21st, from Harburgh (Hanover). She had touched at Gluckstadt, and stopped there twenty hours, at which place cholera raged lately, and carried off 5 per cent. of the inhabitants. Mr. Platt, the registrar, states that the ship *Lutken* arrived at Horsleydown on the 21st of September, and that the case proved fatal in nineteen hours: he also directs attention to the circumstance that an immense intercourse is carried on between England and the Elbe in vessels which are in a very unsanitary condition. "The berths of the steamers conveying passengers being at times saturated with the steam of water-closets, the condition of ordinary vessels may be easily imagined. To avoid the delay of quarantine all steamers should undergo sanitary inspection, and the sailing vessels in the river should be thoroughly cleaned." Mr. Platt further remarks that "they should also get pure water, and they would not then form a bridge over which the epidemic can march from Harburgh to London."

We believe that at the last attack of cholera some of the earliest cases occurred amongst the shipping, and it is remarkable that the four deaths in the London district from cholera and choleric diarrhoea have taken place in the suburbs;—one girl aged four and a-half, and one six years,

in Craubrook-street, Bethnal-green; a girl aged two years in Sweet Apple-court, Bethnal-green; and a boy aged fourteen at Peter's-street, Bromley. The spot where the seven deaths occurred at Stratford is outside the London district. It is thus evident that the outbreaks, which, if properly cared for, should be the most healthy, are, in consequence of their unsanitary arrangements, the first to suffer.

The Registrar-General directs attention to the water supply, and Dr. R. D. Thompson mentions that he has made an examination of the water supplied by the Southwark company, and found 17.6 grains of extraneous matter on October 15th, whereas the total impurity in the pump well of Abbey-place, West Ham (Stratford), amounted to 56.16 grains in a gallon, comprising 4.40 grains of organic matter.

The water supply of large towns is truly a most important consideration. While, however, care is taken of the water, we must not neglect other conditions, for the subtle enemy to human life, which, though invisible to the eye, shows such palpable presence, marching over a regular course, and slaying thousands by the way, stops not only at poisoned wells, but also at overcrowded graveyards, reeking cesspools, and other offensive matters: it visits overcrowded and dirty dwellings, and ill-ventilated and dirty ships; but passes such places as are clean and wholesome, and well conditioned. Although we cannot see the pestilence, it is evident that it pounces upon its suitable prey with the same instinct that guides the carrion crow in the choice of its food.

#### KNIGHTSBRIDGE.

A NAME WITHOUT A TOWN.

Some time since you had a letter from a correspondent, about "a town without a name," and I think that I have a matter of as great importance in "a name without a town." Your readers, of course, know Knightsbridge, and could point it out to any inquirer, but I think it would puzzle any of them to define the limits of that place. Passing along from Piccadilly to Kensington, you may observe Knightsbridge Chapel, an ancient-looking building, with some important memorials concerning it; plenty of work for a future historian of this locality. This chapel was the only religious edifice for miles round, years ago; in fact, I may say the only chapel west of London (in 1634); but the minister attending more to his flock than to the quantity of ground over which he had to preside, encroachments have taken place and it is now "a name without a town."

St. Paul's, Knightsbridge, is part of the parish of St. George's, Hanover-square: all Saints', Knightsbridge, is part of St. Margaret's, Westminster; Queen's-buildings, Knightsbridge, is in the parish of Kensington; and the greater part of Lowndes-square is in the parish of Chelsea;—so that Knightsbridge proper is not known, and Knightsbridge common is part in Kensington, Chelsea, St. Margaret's Westminster, and St. George's Hanover-square. Surely an absurdity like this is not to be found existing in any other part of the metropolis: the name of Knightsbridge exists, and only the name. I think that this would bear looking to, as by taking a portion from each of the encroachments, and remodelling their parishes—a parish and a parish church would be found for

A KNIGHTSBRIDGE.

#### PRESERVATION OF STONE.

With reference to a recent inquiry in our pages as to the induration of fire-stone, a correspondent sends us an extract from the *Ipswich Journal* as to the employment in that town of Mr. F. Ransome's process on a house-front,—Messrs. Turner's, in Princes-street. The paper says:—"The front consists of Caen stone, and was, previous to the application, in a state of complete rottenness and exfoliation; the parts in a state of incipient decay have not only been preserved from further disintegration, but seem to be bound firmly together by an agent most perfect in its cohesive qualities; and the whole surface of the stone operated upon exhibits a degree of hardness it never before possessed: it is also rendered quite non-absorbent, and the appearance of the stone is improved considerably, whilst none of its characteristics are lost. The application is one of extreme simplicity, and the material used perfectly indestructible. The rationale of the process is thus explained:—A liquid will enter any porous body to saturation, whilst a solid cannot go further than the first interstices next the surface. Take, then, two liquids capable of producing, by mutual decomposition, a solid, and, by the introduction of these liquids into the cells of any porous body, a solid is produced by their mutual decomposition internally; ergo, if a solid could not go in as a solid, it cannot come out as a solid; and chemical decomposition having destroyed the solvents, they will never again be in a state of solution."

We have mentioned the process before, and more



over know how necessary time is to test such remedies. Nevertheless, we have quoted the statement, in order that the effect of the application may be watched. The condition into which many stone buildings erected within the last fifteen years have fallen is so fearful, that some certain means of preservation are anxiously looked for.

#### PIERCING OF MOUNT CENIS.

ALTHOUGH tunnels, both subaqueous and submarine, may have had their prototypes in antiquity, the piercing of the *Alps* is one of the real trophies of our times. M. Ranco, chief engineer of this stupendous work, has communicated the following data to one of the French periodicals:—"The tunnel will extend to the length of 12 to 15 kilometres, and as man has never before gone so far into the entrails of the earth, the march is towards the unknown. The next difficulty is the rather large lake situated at the top of Mount Cenis, and the level of the tunnel has been laid so deep for avoiding the danger of these waters percolating to a surface composed of loose sand. The great height of Mount Cenis and the lake prevent the piercing of air shafts for ventilation. Two parallel galleries, communicating with each other, are intended to obviate this inconvenience. Conjointly with the explosion of mines, a huge machine (shield) will operate the work of pierceage. It is calculated that six years' time, and forty millions of francs will be required for completing the perforation of the Alps. The company, "Victor Emmanuel," think that they will thereby obtain the largest share of the traffic of France with Italy and the East. Victor Emmanuel, considering that this is a work interesting to humanity, is disposed to give the half of the above sum from the revenues of the State, and the company has to pay the other half—but only when 4 kilometres of the tunnel have been completed."

#### INAUGURATION OF THE WOLVERHAMPTON WORKING MEN'S COLLEGE.

THIS event took place on the 16th instant, in St. Peter's Schools, Wolverhampton, under the presidency of the Rev. Dr. Newman. There was a numerous attendance. The Rev. T. H. Campbell delivered the inaugural address, which is reported at great length in the local *Chronicle*. The rev. gentleman, in course of his address, said,—I rejoice to think there has been growing up for some years through the length and breadth of the land a feeling of sympathy between man and his fellow-man, such as England has not for a long time, if ever, seen before. It has shown itself in innumerable ways—in a freedom from formality and constraint in the intercourse between men of the same station in society—in a recognition of the bond of kindness and regard, as the only effectual principle of government, in all such relations of life as those of master and servant, employer and employed, teacher and pupil,—above all in the yearning of all who have hearts to feel, that means may be found for bridging over that terrible gulf which separates class from class, for reconciling and uniting those antagonistic worlds of conflicting interests, that each may no longer fancy its existence to depend on the subjugation of the other, but may know that, though there are many members, and all members have not the same office, yet they are all one body, united in one head, penetrated and quickened by one spirit. And as this feeling has been growing and strengthening among those who have been blest with higher gifts of learning and education than their neighbours, it has encountered and conquered with another feeling, that these very gifts are not given them for themselves—that they are given not in ownership but rather in trust—that they are held for the benefit of all who may come within their influence. Men have begun to feel that power, to be worth anything, must be used; that influence, to be worth anything, must be exercised; that learning, to be worth anything, must be brought out; in short, that the rule holds good with mental wealth as well as with material, that the miser and the niggard can have no enjoyment of it. Men have begun to understand what Shakespeare meant when he said,—

"Heaven does with us as we with torches do,—  
Not light them for themselves; for if our light  
Did not go forth of us, 'twere all alike  
As if we had it not."

And what a Greater than Shakespeare meant when He said, "That a light is not hid under a bushel, but put upon a candlestick to give light to all that are in the house." And then has come the question, "How are the gifts of education to be imparted, and to whom?" and finding also the other question, "How is the gulf between class and class to be bridged over?"—the two together have worked out one common answer for themselves, "If you who have been blest with these gifts can call together those who have not been so circumstanced, and can persuade them—or rather

meet their wishes (for they will want no persuasion)—to join with you in a common society in which they shall learn, and you shall help them, then will both your objects be gained, both your desires satisfied; you will know what is the meaning of brotherhood, and what is the true end of privileges and endowments. Such or such-like were the principles from which arose the first Working Men's Colleges: such or such-like were the principles from which every one since has arisen.

#### THE FATAL ACCIDENT TO "BIG BEN."

OUR readers must have heard of the sad end to which the much-vaunted Big Ben has come. The crack which has developed itself is said to be precisely opposite to the spot on which the hammer was wont to strike it on those occasions when efforts (under difficulties) were made to cause Ben to speak out with that full developed voice which he might have sent ringing all over the metropolis had he been elevated to his final resting-place. As the hammer was far heavier than any one anticipated to be requisite to this end, and as the section of the bell is peculiar, so far as regards the thickness of the sound bow; and as, moreover, all the quarter bells are formed on the same principle, it becomes a very serious question of what may yet occur. It must be remembered, however, that Big Ben had a heavy fall on its way to London; and although the crack has only now developed itself, after the expiry (almost precisely) of the year which is said to have relieved the makers of all responsibility, it may be a question, in favour of the principle of its construction, how far the fall was blameable. That the hammer was made to strike precisely opposite the crack may, nevertheless, militate against this idea.

#### RAILWAY RATING.

THE Norfolk Quarter Sessions were occupied on the 21st and 22nd inst. with an important appeal on the part of the Eastern Counties Railway Company against a poor-rate made on a portion of the Eastern Union Railway, of which they are lessees, by the churchwardens and overseers of the parish of Moulton, Norfolk. The railway was sought to be assessed by the respondents at the rate of 600*l.* per mile per annum.

Mr. Bovill, in stating the case for the appellants, said they had accurately calculated the whole traffic passing over the line between Tivetshall and Farnsett, and they found that it amounted, in 1856, to 4,161*l.* The proportion of this sum on the  $\frac{1}{12}$  mile in the parish of Moulton was 2,294*l.*; but the following deductions must be made for the expenses, namely, 5,713 trains at 2*l.* 9*d.* per train mile, 1,496*l.*; renewal of permanent way and repairs, 187*l.*; annual value of stations and buildings, 59*l.*; interest on capital, at 5 per cent. 114*l.*; allowance for depreciation of rolling stock, at 10 per cent. 228*l.*; tenants' and trade profits, at 12 per cent. 260*l.*; showing that the  $\frac{1}{12}$  mile of line was worked at a loss of about 170*l.* in 1856.

Mr. O'Malley addressed the Court for the respondents, and contended that the portion of the line in Moulton ought to be taken in the proportion which it bore to the whole line, which let for 90,000*l.* a-year. After making every deduction, the respondents believed that 640*l.* per mile was the annual value of the portion of the line in Moulton.

The Court considered that the appellants had shown that the line in Moulton had earned, in 1856, 2,294*l.* With respect to the deductions allowable, the Court, contented that the first two items in the appellants' schedule ought to be allowed. The other items were questionable, but, as the first two deductions reduced the rateable value of the line below 600*l.* per mile, and the Court had no means of ascertaining the rate, it must be assessed without costs. The rate was quashed accordingly.

#### THE MASONS' MEMORIAL.

SIR,—I am instructed by the masons' full-holiday committee to forward to you a copy of memorial to the master builders of London, and respectfully ask you to publish it in your next.

ROBT. MACDONALD, Sec.

"This memorial of the masons of London was adopted, at a general meeting of the whole trade, held at Wilcocks's Assembly-rooms, Bridge-road, Lambeth, on the 12th of October, 1857.

To the Master Masons and Builders of London and vicinity.

Gentlemen,—We, the operative masons of London, have viewed with much satisfaction the efforts which have been and continue to be made, to extend the advantages of a half-holiday on Saturdays to the operatives of the industry generally; and those efforts have been attended with success at Edinburgh and Manchester, in our own trade, and also in many firms and professions in this metropolis.

Employed as we are at a laborious and incessant occupation, we have not hitherto had sufficient leisure to enable us to obtain either proper mental culture or healthful recreation; and are shut out on secular days from the public libraries, galleries of art, museums, and parks, which the legislature and the munificence of individuals have provided for the instruction and enjoyment of the people.

Most of us are compelled to reside in the closely crowded districts of this large metropolis; and consequently have long distances to walk, to and from our employment; consider, then, how unfitted the operative must be to take advantage of the evenings alone for self-improvement, when the physical powers are completely exhausted. Gentlemen, the object of this memorial is to respectfully ask you to concede to us the privilege of leaving work on twelve o'clock on Saturdays, on and after the first Saturday in June, 1858; subject to the following:—that payment for the week—viz. 8*s.* per day for five days, and 5*s.* for Saturdays; and should you comply with our request—from

the feeling abroad on this question, as evidenced at the large and influential meeting held at Peter-Hall, the Earl of Shaftesbury in the chair, we fully believe the public will bear you harmless as regards pecuniary loss.

We cannot, as operative masons, neglect to thank you for the readiness with which you granted us the privilege of leaving work at four o'clock on Saturdays, ten years ago; and should you meet our present wishes, you will have your reward in seeing around you a steady, intelligent, moral, and self-respecting body of workmen.

And, in conclusion, allow us to hope that the good understanding which has happily existed betwixt the body of employers and the operative masons in London, for many years, may continue to exist for years to come.

We are, Gentlemen, yours respectfully,  
THE OPERATIVE MASONS OF LONDON.

London, Oct. 20, 1857.  
'Wheatsheaf,' Vere-street."

#### THE BUILDERS' BENEVOLENT INSTITUTION.

ON Thursday, the 29th inst. the tenth anniversary festival of this excellent Institution, established in 1847, for giving relief and granting pensions to the decayed members of the various branches of the building trade and their widows—also for affording temporary relief to workmen in case of accidents, was held at the London Tavern. About 290 gentlemen connected with the leading building firms of the metropolis sat down to a repast served up by Messrs. Chater and Co. under the superintendence of Mr. Funge.

Amongst the principal persons present we noticed the following:—The Chairman and President, Mr. Alderman W. A. Rose; Mr. Alderman and Sheriff W. Lawrence; Mr. Alderman Wm. Gabriel; Messrs. Thos. Piper and R. W. Kennard; Mr. Warren Delarue, F.S.A.; Mr. Wm. Jackson; Mr. Joseph Peters; Mr. G. Spencer Smith; Mr. G. Smith, Jun.; Mr. W. Williams; Mr. H. Dodd; Mr. Alfred Smith; Mr. Henry Lee, Jun.; Mr. George Lee; Mr. Thos. Jackson, Jun.; Mr. George Bird, Treasurer; Messrs. Joseph Bird; Joshua Higgs; Ellis; J. Newson, Jun.; Hutchings; Thomas Cozens; G. Head; Richard Head; Samuel Head; D. Nicholson, Jun.; Thomas Stirling; William Stirling; Wm. Todd, Jun.; James Herd; Watson; John Thorn; Charles Fish; W. S. Simkin; J. Williams; George Clarke; &c.

The following were among the principal donations announced:—Francis, Brothers, and Pett, 5*l.* 5*s.*; John B. J. White and Brothers, 5*l.* 5*s.*; W. T. Purkiss, 5*l.* 5*s.*; Harrop and Son, 10*l.* 10*s.*; Alderman Rose, 20*l.*; R. W. Kennard, 10*l.*; Jos. Bird, 10*l.*; Stephen Bird (annual), 15*l.*; Geo. Bird (treasurer), 15*l.*; Henry Dodd, 10*l.* 10*s.*; Lee, Son, and Smith, 10*l.* 10*s.*; Hy. Lee, Jun. 10*l.* 10*s.*; Geo. Lee, 2*l.* 2*s.*; Piper and Son, 5*l.* 5*s.*; Alderman and Sheriff Lawrence, 5*l.* 5*s.*; Wm. Webb, 21*l.*; Joshua Higgs, 2*l.* 2*s.* (and guarantees 5 guineas for five years); Alderman Gabriel, 5*l.* 5*s.*; Mr. W. Delarue, 2*l.* 2*s.*; W. Jackson, 5*l.* 5*s.*; T. Jackson, 5*l.* 5*s.*; G. Spencer Smith, 5*l.* 5*s.*; George Smith, 5*l.* 5*s.*; Joseph Peters, 10*l.* 10*s.*; Wm. Piper, 5*l.* 5*s.*; Wm. Lee, 10*l.* 10*s.*; Joseph Rigby, 5*l.* 5*s.*; Coles Shadbolt, 5*l.* 5*s.*; Wm. Hutchings, 3*l.* 3*s.*; Geo. Head, 3*l.* 3*s.*

After the usual loyal toasts, which were drunk with great enthusiasm,

The Chairman proposed the health of the Lord Mayor and Corporation of the City of London, which was responded to by

Mr. Alderman Gabriel, who said that, spending as the corporation did, such enormous sums in the building embellishments and public improvements of the metropolis, he was sure they could not otherwise than feel a deep interest in the prosperity and welfare of the Builders' Benevolent Institution. The buildings, he might add, that had been erected at the expense of the corporation of the City of London, were second to none throughout the United Kingdom. (Cheers.)

The toast was drunk with loud applause.

Mr. Sheriff Lawrence, in responding to the toast of the Sheriffs of the City of London and Middlesex, observed that the builders had a very fair share in the representation of the corporation of London. He need only mention that they had two magistrates among them.—Mr. Alderman Cubitt, M.P. and Mr. Alderman Rose, whose names were a sufficient guarantee for the importance and good management of their excellent Institution. (Cheers.)

The Chairman in proposing the toast of the evening, which was received with loud acclamation, "Prosperity to the Builders' Benevolent Institution," said he regretted that the Institution, whose interest they were assembled together to promote, was not in such a flourishing position as its friends would wish it to be. When they considered the importance of this branch of the industry of this great country, he felt that ample provision should be made for those whom the vicissitudes of fortune had caused to become the recipients of their bounty. The Institution was founded for the relief of men who were in the position that they, one and all, now occupied, namely, that of master employers in the various branches of the building trade; and he believed that some of those



who were now pensioners on their bounty, had been gentlemen walking in the same path of prosperity with themselves, and in the upper branches of their business. Under these circumstances he was sure they would feel it incumbent on them, placed as they were in a position, prospering and to prosper, to extend the hand of relief to their less fortunate brethren. He had the assurance of the directors that in all instances the funds were impartially and properly distributed, and no case was relieved without some of the directors personally inquiring into the application. After calling attention to the importance of all present supporting such a valuable institution, he stated that, at a late festival he was at, it was proposed that each gentleman should get twenty new annual subscribers. He only hoped that those whose sympathies were enlisted on behalf of the Builders' Benevolent Institution would get as many as they could; but if they only succeeded in getting half that number, great good would be accomplished, seeing that annual subscribers were the mainstay of all societies.

Mr. R. W. Kennard proposed the health of the Chairman, and said, associated as he was with "iron," which was a material of such increasing use and interest amongst builders generally, he could only wonder and lament that he had not become connected with the society before, but he was happy now to give in his adhesion and aid for the future to the objects of so valuable an institution.

The toast was drunk with great applause. Mr. Thos. Piper, Jun. proposed the health of the treasurer, which was received with great enthusiasm.

Mr. A. G. Harris, the secretary, here read the list of subscriptions (the leading of them given above), and which amounted in the aggregate to 3007.

Mr. George Bird regretted the smallness of the sum announced, as last year it had amounted to considerably more. In consequence of the death of a number of their old subscribers, a falling off in the funds had taken place, and this, coupled with the small amount subscribed that evening, would prevent their having the usual election in November. This was to be the more lamented as there were a great number of pressing and really deserving cases for relief. He did hope that all present would use their best endeavours to forward the interests of the society.

The Chairman here announced, amid much applause, that Mr. Henry Dodd, of Hoxton, had made the magnificent gift of between four and five acres of valuable land, in the neighbourhood of Windsor, for the purpose of building almshouses for the Institution.

The toasts of "The Directors," responded to by Mr. Cozens (the founder of the Institution); "The Vice-presidents and Trustees;" "The Architects and Surveyors;" "The Press;" and "The Stewards," having been proposed and appropriately responded to, the company separated. Mr. T. Higgs was the "Toole" of the evening's entertainment; and the vocalists were, Miss Leffer, Mr. A. Lester, and Mr. Henry.

### Books Received.

*The Law of Landlord and Tenant: with a copious Collection of useful Forms.* By W. A. HOULDSWORTH, Barrister-at-Law. London: George Routledge and Co. 1857.

THE community at large is much indebted to Mr. Routledge and his firm, for bringing within the reach of all so much literature of the first-class as they have done. It needed extraordinary liberality and pluck, and a far-seeing mind, to make, for example, the costly arrangement with Sir Bulwer Lytton, everywhere spoken of at the time, which enabled them to supply his novels to the public at a shilling or eighteenpence each; and although it was, of course, undertaken on commercial grounds, and may have proved a successful speculation, such qualities deserve commendation.

The little book named above belongs to a series of a different description, called "The Useful Library," and only needs to be known to have a large sale. All are interested, more or less, in the laws which regulate the rights and duties of landlord and tenant, and ought to have a knowledge of them. If they have feared to study these laws because of the language in which they are couched, or the length to which they extend, they need no longer allow these reasons to prevent them from getting a knowledge of the subject, for they will find Mr. Houldsworth's treatise "at once sufficiently popular to be intelligible, and sufficiently accurate to be trustworthy." It treats of the various tenancies, of distress, and other means of recovering rent, of waste and repair, of ejectment, &c. &c.; and contains a valuable set of forms for agreements, notices, and warrants. We cordially recommend it.

### Miscellaneous.

**THE DESIGNS FOR THE WAR AND FOREIGN OFFICES.**—We understand that the council of the Architectural Institute of Scotland have made application to Sir Benjamin Hall to authorize an exhibition in Edinburgh of the prize competition designs for the War and Foreign Offices to be erected at Westminster. As the exhibition would prove of importance to the advancement of art in Scotland, it may be hoped that the commissioners will find it within their power to gratify the public of Scotland in this way.

**ARCHITECTURAL SOCIETY OF NORTHAMPTON.**—The annual meeting of this society was held on the 21st inst. Lord Henley, in the chair, when the report was read, reviewing the progress of architecture during the year, both within and beyond the more immediate sphere of the Society's operations, and of which a report is given in last week's local *Herald*. The Rev. G. A. Poole then read a paper on the subject of colour as applicable to architecture, of which we may have something more to say.

**THE COAL-SHOOT NUISANCE.**—It is bad enough to slip in upon the iron coal-shoot covers with which the metropolitan streets are beset; but, when these foot-traps are loose and insecure, summer brings no safety with it. An action was lately brought in the City Sheriff's Court, by a lady who had her leg entrapped and injured in Catherine-street, Tower-hill, by one of these imperfectly-covered shoots, and the sheriff at once gave a verdict against the householders, with costs, although it was urged on the part of the defendant that the shoot was properly fastened, but that the accident arose from the fragility of the stone in which it was set, for which the Paving Commissioners were responsible, as defendant never paved the court.

**THE AMMERDOWN COLUMN.**—This very elaborate structure, the completion of which has been delayed by legal obstructions, was on Monday in last week submitted to public examination.

**FREE LIBRARIES AND MUSEUMS.**—Mr. David Chadwick, of Salford, read a paper on this subject at the Social Science meeting at Birmingham, a few brief abstracts from which may be not uninteresting. The following towns have recently established, or taken steps to establish, free public libraries, viz.:—Warrington, Salford, Manchester, Norwich, Winchester, Cambridge, Bolton, Liverpool, Sheffield, Oxford, St. Helens, Hertford, Birkenhead, Kidderminster, Lichfield, Leamington, Westminster, King's Lynn, Newcastle, Preston, and Aberdeen. The following have rejected the proposition to establish free libraries, viz.:—Exeter, Birmingham, Cheltenham, London (city), Islington (London), Haslemere, Hull, and St. Marylebone (London).

#### NEW FREE LIBRARIES.

	Number of Volumes.	Total Issues last year.	No. of times the whole Library has been circulated last year.	Average daily issues.
Liverpool .....	41,400	474,546	nearly 12	1,581 vols.
Manchester .....	35,573	156,538	" 5	521 "
Salford .....	20,438	147,300	" 7	401 "
Bolton .....	15,097	78,670	" 5	282 "
Sheffield .....	7,034	120,875	" 17	462 "
Oxford .....	4,520	26,000	" 6	80 "
Cambridge .....	2,579	14,628	" 6	45 "

The number of issues from public libraries is generally in proportion to the opportunities afforded for their use to the working classes. If the libraries are closed in the evenings, the number of issues (and consequently the actual use of the libraries) is less per annum than the total number of books in the library. If, as in the case of free libraries generally, they are open all day, till about nine o'clock in the evening, the circulation will average about seven times the total number. As regards public museums, the effect of restricting the hours of attendance to not later than four p.m. has a like effect in preventing the mass of the people visiting them. Notwithstanding the incomparable superiority of the British Museum to all others, it appears that the total number of visitors last year was—to the British Museum, 361,000; Derby Free Museum, Liverpool, 123,000; Royal Free Museum, Salford, 550,000. The number of visitors to the Salford Royal Museum, in the present year, will exceed 800,000. Working people know that as inhabitants and householders they contribute according to their rental towards the cost of maintaining free libraries and museums, and therefore they participate in the enjoyment of the privileges on terms of perfect equality with all other persons. The writer concludes with a hope that the people of Birmingham, and other densely-populated towns, will again consider of the immediate establishment of free public libraries and museums.

**THE PUBLIC PARK AT BLACKBURN OPENED.**—The ceremonial of opening this new park took place on the 23rd instant. The park, says the *Preston Guardian*, extends from Preston new road to the heights of Revidge, on the one hand, and stretches from Duke's-brow to Shire-brow on the other. The area is rather more than 50 acres. It was sold by Mr. Joseph Feilden to the corporation, for 654, an acre. Mr. Henderson, of Birkenhead, laid out the grounds. The total cost to the day of opening was 14,700*l.*; net cost paid out of money borrowed for repayment in forty years, 10,000*l.*; the balance having been realized by a sale of ground. The grounds are ornamented by brook, lakes, and islands, bridge, and fountains, entrance-gates and lodges, Russian guns and battery, promenades, bowling-greens, drinking fountains, &c.

**ST. MARYLEBONE BURIAL BOARD.**—We have received the award of Mr. T. D. Archibald in the reference "the Burial Board of St. Marylebone v. Culverhouse and others," together with statements too serious to be hastily adopted.

**ST. LEONARD'S, SHOREDITCH, SURVEY.**—At a vestry meeting specially appointed and held on Tuesday last, Mr. Payne was appointed, by a majority of 47 to 4, to undertake the duties of this office. Pending the proceedings a certain degree of irregularity has occurred, owing to Mr. W. Tress having interpolated his tender, addressed to the vestry, after the committee had received the offers of numerous candidates, reported thereon, and declared the respective amounts thereof. Mr. Tress's tender, 120*l.*, about 40*l.* below that accepted, was (of course) rejected by the vestry, the majority being 26 to 5.—JAMES SAUNDERS.

**PROPOSED TUNNEL BETWEEN ENGLAND AND FRANCE.**—This project, it seems, is once more brought before the public, under the somewhat alarming title, "L'Angleterre Continentale." The *Sicle* gives us some information with respect to the project. Mr. A. Thomé de Gamond has submitted his project in the first place to the Emperor, who was greatly struck with it. Afterwards the Minister of Public Works, in accord with the Minister of Marine, named a special commission of the most eminent scientific notabilities. This commission has decided that M. Thomé de Gamond is no mere dreamer. The English Government have also named on their side a commission (?), and it is probable that in the coming spring French and English engineers will apply themselves to the work of vigorously examining the practicability of the project. So says the *Sicle*. The tunnel will commence on the French coast at Marquise, Pas-de-Calais, from which it will branch on one side to the Boulogne Railway, and on the other to the Calais line. The first of these branches will be 13,700 metres in length, and the second about 20 kilometres. The tunnel will extend from Marquise 8,800 metres towards Cape Grinez, at which point it will enter the Straits and strike the English coast at Eastwear, between Dover and Folkestone. A branch of 5,500 metres will connect the tunnel with Dover and all the net-work of the English railways. The bottom of the sea at one point of the Straits at an equal distance from each coast has an elevation, which at low water is covered only by twelve metres of water. This rock (named Varne) will be raised, and form the marine station of the tunnel. A harbour will be there constructed. Docks, lighthouses, &c. will make of the Varne station a meeting point for all the shipping of the globe. It is proposed to throw up at certain distances on the line of the tunnel thirteen temporary islands, each provided with a small reflector light and necessary workshops. It will be thus possible to sink thirteen wells, and to attack the work of boring the tunnel by twenty-eight openings at once, which will admit of this monumental labour being completed in six years. The total expense will be 174,000,000 francs (6,960,000*l.*), about the ninth part of the cost to France alone of the Crimean war.

**"EMISSARY."**—In these days of *graph* and *gram* discussions, one feels emboldened to remark on public writers. May I, then, ask by what rule you apply the word *emissary* (p. 590, col. 3, line 26) to a channel through which sewage is to be sent? Surely if English is to be recognized as a language, it is the duty of educated men to adhere to the established meaning of words long in use, however they may dispute about the coinage of new words.—CITIZEN.

\* \* \* The meaning given by us to the word "emissary" has been "long in use," though it is less used now than formerly. One of the meanings attached in the dictionaries to "emissary" is, "that which sends out or emits." Emission is the act of sending out; "emissary" the means by which anything is sent out. Even in the restricted meaning of the term, "a person sent on mission," its larger meaning is involved. The word, in the sense in which we have viewed it, is a very useful one, and ought not to be given up. The Latin, *emissarium*, we may remind our correspondent, is a sluice, or flood-gate.



**THE SHEFFIELD CRIMEAN MONUMENT.**—The Duke of Cambridge laid the first stone of this monument on the 21st inst. which was held as a great day in Sheffield. Flags and banners enlivened the streets, shops were closed, and an extensive procession accompanied his Royal Highness to the ground. The monument, as designed by Mr. Goldie (of the firm of Weightman, Hadfield, and Goldie, of Sheffield, architects), will rise from a basement of a circular flight of four steps, with advancing bastions for the Russian guns presented to the town by the Minister of War. The lower portion of the monument is a square, with advancing angle buttresses, on which will be inscribed the names of the commemorated; the intermediate faces of the square containing bas-reliefs of the four principal events of the war, intended to be produced in bronze. A cornice composed of the rose, shamrock, and thistle, crowns this portion of the composition. The upper and main portion of the design from this point assumes a character of greater richness, and embodies a record of the alliance. In the centre, carried upon a cluster of nine shafts, bossed and capped, is a platform supporting a niche, with four crocketed pinnacles, embracing pointed and capped arches. Above rises a steep stone roof, the under side of which is vaulted, likewise in stone, with sculptured bosses. Armorial bearings of the town will be produced in this portion of the work. A colossal statue, intended to set forth "Britain victorious," is thrust beneath the central canopy, one hand resting on a sword sheathed as for peace, and the other holding out to the victor the wreath of triumph. The head of this statue will be a portrait of her Majesty the Queen. Round about this central feature are grouped four pedestals sustaining niches, which shelter typical statues of England, France, Sardinia, and Turkey. The contract has been taken by Messrs. Lane and Lewis, of Birmingham, sculptors.

**THE "BRAKE" COMPETITION.**—In reply to an offer of a premium of 50*l.* by the London General Omnibus Company, for the "best model or design for a brake, to be worked by the driver, and applicable to the present style of omnibuses," 127 competitors sent in designs. The referees, Messrs. Joseph Wright, Gower, and Miller, have just now made their award, and have selected for the premium the model No. 1, by Mr. Thomas Barker.

**STEAM HAMMERS.**—These tools have gone on increasing in great gradations, until the climax of a 63 tons, dead hammering weight, with a fall of 7 feet 6 inches, has been reached. A hammer of this weight has been lately erected and is now in operation at the works of Mr. A. Fulton, of Glasgow.

**GAS.**—The Sheffield Gas Company's directors have announced that they are enabled to pay to their shareholders 10 and 8 per cent. out of the profits on the sale of their gas, being the full amount they can divide till the price of gas is reduced to 3*s.* 6*d.* per 1,000 cubic feet. A surplus of 594*l.* besides would thus be left on hand.—The Warrington town-council have resolved to apply for power to erect gas works of their own, unless the present gas company guarantee to make gas equal to the power of at least 17½ sperm candles.—The directors of the Workop Gas Company have given notice that they intend to reduce the price of gas from 5*s.* 10*d.* to 5*s.* per 1,000 cubic feet. The directors have adopted this step as an experiment to see if the increased consumption will justify them in continuing to charge the reduced price.—The Castle Donington Gas Company have declared a dividend of 5 per cent. with a bonus of 2 per share, and have resolved to allow a discount of 5 per cent. on all consumers' accounts of 10*s.* and upwards.—The Dublin people are engaged in a struggle for a reduction of the price of their gas from 5*s.* 10*d.* to 3*s.* 6*d.* by which they hope to realize a saving of 40,000*l.* a year. At present they pay annually for gas 100,000*l.* In a public statement they give the following list of the prices of gas at various places:—

London	4 <i>s.</i> 0 <i>d.</i> per thousand feet.
Liverpool	4 0
Whitehaven	2 6
Bolton	3 0
Rochdale	3 3 to 4 0
Sheffield	3 6 to 4 0
Birmingham	2 10½ to 3 10
Bristol	4 0
Belfast	3 9
Dublin	5 10

The quality of Dublin gas is said to be very inferior, so that the relative cost of light in the undermentioned places is as follows:—

Dublin	7 <i>s.</i> 0 <i>d.</i>
London	3 3
Liverpool	2 9
Glasgow	2 6

Many of the principal firms in Dublin have subscribed to a fund now being raised for the purpose of taking steps to obtain an abundant supply of good gas at a reasonable price.

**FALL OF THREE HOUSES IN SHEFFIELD.**—A row of new shops, nearly approaching completion, in Gibraltar-street, Sheffield, suddenly fell down on Tuesday in last week, owing to the foundation work on which the pillars rested giving way. Fortunately no person was near at the time. The damage is estimated at 500*l.* or 600*l.* The foundation walls in front, says the *Sheffield Independent*, were built of "rubble" stone up to the level of the street. Large beams, extending from the doors and windows, were supported by iron pillars, and the foundation giving way so as to let down one or more of the pillars, the beams were left to sustain the superstructure of brickwork without adequate support. The consequence was that they snapped, and let the whole down. Fortunately the brickwork fell perpendicularly, none of it being projected into the street. The rubbish has been cleared away, and more secure foundations are now being laid.

**ORDNANCE SURVEY.**—The minor triangulation of Perth and its environs has been commenced. In accordance with the recent decision of the commission, this and other towns whose population exceed 5,000 will be drawn on a scale of 10 feet to a mile, or nearly (it being 1:500th the lineal measurement). These plans are of great importance to the sanitary commissioners, as they facilitate the means of drainage. The country districts are to be drawn on a scale of 6 inches to a mile.—*Perth Courier.*

## [ADVERTISEMENT.]

TO THE EDITOR OF "THE BUILDER."

SIR,—Numerous inquiries having been made of us daily during the last four years, respecting the Revolving Shutters adapted to our premises by the Patents, Messrs. CLARK & Co. of 46, Gate-street, London's-in-fields, we feel but too happy in having the opportunity of doing them the justice their novel and useful invention deserves. In consequence of the magnitude of our frontage, which embraces about 30 feet of Oxford-street, one entire quarter of Regent-circus, and between 40 and 50 feet of Regent-street, the process of closing with the old wooden shutters was not only a tedious but also a very laborious task—five porters requiring forty minutes to effect that object. All this loss in time and trouble is now obviated by the above-mentioned invention—the entire establishment being closed every evening by one porter in the incredibly short space of three minutes. In order to lead others to a just estimate of the superiority of this patent, it may be requisite to state that the size of one of our shutters alone is 700 feet in superficial measurement, composed of 27,345 pieces united by 1,800 hinges, weighing somewhat over two tons, and yet obedient to the hand of one porter! Messrs. CLARK & Co. having also executed other work for us, such as Brass Sashes, &c. we feel much pleasure in recommending them as the lowest of the charges and right punctuality, entitling them to the support of all those with whom durability is economy, and time saved money made. Our shutters may be seen in active revolution, nightly, at half-past eight o'clock, at SOVEREY, TAYLOR, and COMPANY, Silk Mercers and Drapers, Regent-circus, Oxford-street, Jan. 1, 1857.

## [ADVERTISEMENT.]

**FALL OF DELHI.**—PLAN OF THE CITY OF DELHI.—On Sunday next each copy of the DISPATCH will be accompanied with a plan of the City of Delhi, uniform with the Atlas. To prevent the possibility of disappointment consequent upon the enormous sale of the DISPATCH, those persons desirous of possessing the DISPATCH COLOURS ATLAS are informed that should the newspaper be out of print, with which any particular Map has been presented, such Map may always be obtained with the paper for the current or any future week. Either of the DISPATCH ATLAS MAPS will be forwarded gratis with the paper. The price of the DISPATCH is—un-stamped, 5*d.*; stamped (to go free by post), 6*d.* The Friday evening edition may be received at the most distant parts of the Kingdom on Saturday morning. Orders received by all Newspapers, and at the Office, 139, Fleet-street. Newspapers throughout the Kingdom are requested to forward their names and addresses, when specimens of the splendid Double Map (Coloured) of Asia will be forwarded. Portfolios are now ready, price 3*s.* 6*d.* 4*s.* and upwards.

## TENDERS

For two villas at South Norwood-park. Messrs. Richard Tress and Chambers, architects:—

Fowler	£4,467 0 0
Watt and Co.	3,900 0 0
Lemon	3,842 0 0
Hollidge	3,785 0 0
Wint	3,350 0 0
Waine and Jackson	3,460 0 0
Harrison	3,445 0 0
Garnham	3,415 0 0
Davies	3,400 0 0
Hyde	3,296 0 0
Tarrant	3,280 0 0
McClelland and Bird	3,265 0 0
Seagrave and Elliott	3,250 0 0
Ashton	3,170 0 0
Thompson	3,168 0 0
Lane and Lewis	3,106 0 0
Garnham	2,976 0 0
W. H. Row	2,679 0 0

For Kent artillery stores, Dover. Mr. John Whichard, architect. Quantities supplied by Mr. James Williams:—

Colls and Co. London	£5,450 0 0
Fry, Dover	5,150 0 0
Cobb, Maidstone	5,080 0 0
Kirk and Parry, Chatham	4,960 0 0
Evans, Brothers, London	4,890 0 0
Morton, London	4,790 0 0
Ayres and Co. Dover	4,050 0 0
Stiff and Richardson, Dover (accepted)	4,010 0 0

For building ten houses, King's-place, Blackman-street, Southwark, for Mr. Bischoff. Mr. Turner, architect:—

Jos. Wilson	£3,715 0 0
Fish	3,684 0 0
Crawley	3,550 0 0
Blackman	3,290 0 0
Burtenshaw	3,160 0 0
Chapman and Parsons	3,100 0 0
Paul	3,060 0 0
John Wilson	2,968 0 0
Greig	2,877 0 0
Elliott	2,690 0 0
Carter	2,865 0 0
Dove	2,763 0 0
Ashton	2,660 0 0

For the enlargement of College House, Highgate. Mr. W. P. Griffith, architect:—

Dunkley	£2,730 0 0
Hedges	2,340 0 0
Cusling	2,290 0 0
Ennor	2,194 0 0
Child	2,168 0 0
Wilson	2,150 0 0
Brake	2,100 0 0
Batterbury	2,079 0 0
Ashton	2,065 0 0
Watson	2,000 0 0
Williams	1,987 0 0
Jarvis	1,964 0 0
Dove	1,969 0 0

For building a villa and offices at Woodford. Mr. V. Dobson, architect:—

Perry	£2,290 0 0
Ward and Son	2,193 0 0
Pritchard and Son	2,190 0 0
Hill	2,185 0 0
Henshaw	2,039 0 0
Ennor	1,948 0 0
Cass	1,790 0 0

For building warehouse, Aldermanbury-postern, for Mr. Stewart. Mr. Lambert, architect:—

Carter	£1,974 0 0
Piper	1,969 0 0
Smith	1,790 0 0
Perry	1,728 0 0
Downs	1,696 0 0

For building two cottage residences at Anerley, for Mr. Thomas Smith. Mr. Lambert, architect:—

Rise and Stanscar	£1,687 0 0
Barrett	1,667 0 0
Patrick	1,618 0 0
Perry	1,600 0 0
Downs	1,498 0 0
Seymour	1,267 0 0

For proposed alterations to 64 and 65, Chapsuade, for Mr. W. White. Messrs. R. Tress and Chambers, architects. Quantities supplied:—

Brass and Sons	£1,452 0 0
Willcox	1,448 0 0
Coleman	1,433 0 0
Brown and Robinson	1,395 0 0
Tolley	1,385 0 0

For workshops in Gee-street, St. Luke's, for Mr. Strickland:—

Peerson	£1,241 0 0
Sahey	959 0 0
Raby	956 0 0
Lawrence	865 0 0
Brace	853 0 0
Rome	819 0 0
Seagrave and Co.	802 0 0

## TO CORRESPONDENTS.

H. C.—E. J. (shall have attention).—J. R. W. I. (the same idea has doubtless entered many heads).—F. E. W. (typus the drain is probably defective, notwithstanding report of its state; perhaps porous. It should be examined, made perfect, and covered with earth. Concrete would create a difficulty in the event of stoppage hereafter).—B. T. (under some circumstances the tender might be stamped, and become a contract which could be enforced; it is had working, however, with an unwilling contractor. Before any advance be agreed to, the work should be offered, at the sum proposed, to the builder who made the next lowest tender).—C. S.—G. R. R.—C. E.—W. P.—H. P. Q. (Architectural Pottery Company, Poole).—S. L. S.—A. C. J. H. R.—Mr. T. J. D. C.—R. W. (should have sent his name).—True Blue.—Industria.—P. R. H.—S. and B.—Mr. C.—Epilion (in type).—W. J. P. (received).—S. D.—Johnny.—E. S.—R. A. W.—E. J. W. ("return walls," so far as the Building Act is concerned, must be either external, party, or cross walls") and the Act sufficiently explains what constitutes these).—W. L. R. (Office of Works Whitehall).

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editors, and not to the Publisher.

## ADVERTISEMENT.

**DRAFTSMAN AND WRITER, ENGINEERING, ARCHITECTURAL AND MECHANICAL.** The advertiser, who has been twenty years in the service of engineers in town and country, and the Government Offices, wishes for an ENGAGEMENT, either temporary or otherwise, or to take work at home. Terms moderate. Specimens and references.—Address, F. C. I. Palace-street, Finsbury.

## TO ARCHITECTS.

**GENTLEMEN** in want of Assistance, can have DRAWINGS (detail or perspective) executed with ability and despatch by the advertiser (EMER), at his residence, V. H. Street, Knightsbridge, S.W. First-class references required.

**A RESPECTABLE YOUTH** in his 17th year, anxious for EMPLOYMENT as a BUILDER'S OFFICE. Is competent to trace and copy drawings.—Address, C. F. Office of "The Builder."



# The Builder.

VOL. XV.—No. 770.

**B**RAINTREE, in Essex, has been a battle-field for principles before now; and it is at this moment the scene of a dispute which involves questions important to many of our readers. At the end of 1856, the Burial Board of Braintree, having arranged to execute certain cemetery works, advertised for tenders, and ultimately accepted the offer of Mr. James Brown. According to papers which have been furnished to us by a committee of gentlemen, who have associated to protect the interests of the contractor, including a report of the proceedings at a vestry meeting, held on the 22nd ult. ;—

"To consider a law-suit now in progress, commenced by Mr. Jas. Brown, builder, against the Burial Board of Braintree, for the recovery of a balance, claimed by him for work done in the new cemetery, which he says can be proved to have been done by direct orders from the Board, although without written instructions; and also to consider whether they will, if they lawfully may, order the same, or any part thereof, to be paid,"—

the estimates for these works were based upon bills of quantities prepared by the architect of the Board, Mr. Johnson, of Bury St. Edmund's; and sold to Mr. Brown by the Board. Further, as other builders who tendered for the work, had these quantities, which were lithographed, it may be presumed they based their estimates upon them. Mr. Brown's tender for the two chapels was in the words following:—"Dec. 1855: I hereby agree to erect two chapels, lodge, and entrance gates, for the Burial Board of the Parish of Braintree, according to the plans, and specifications, and bills of quantities furnished by the architect of the Board, in a thoroughly sound and workman-like manner, for the sum of 1,160*l*."

This tender having been accepted, an order for commencing the work was given early in Jan. 1856, and the architect and some members of the Board attended and staked out the site. A bond and contract were prepared by the clerk to the Board, and were signed by him on the 15th of February. In the contract two clauses are found, bearing upon the matters now in dispute, viz. Clause VI. which says, "That if any alterations or deviations from the said specifications and drawings, either in the way of addition to, or omission from, the works hereby contracted for, shall be required by the Board, the contractor shall make the same accordingly; and the value thereof shall be ascertained and settled by the architect, and added to or deducted from the amount of the contract, as the case may require. But no such alterations or deviations shall be allowed without written instructions signed by the chairman or clerk of the Board." And Clause XII. which provides, "That if any question shall arise concerning the construction of this contract, or the said specifications and drawings, or the execution of the works hereby contracted for, or any other matter or thing relating to the same, the decision of the architect shall be final, without appeal; and that the submission to his award may, at the instance of either party, be made a rule of her Majesty's Court of Queen's Bench."

The works having been completed, the architect certified that they had been executed to his entire satisfaction, and that there remained a balance due to the contractor of 158*l*. 14*s*. 4*d*. ;

of which the sum of 96*l*. 4*s*. 4*d*. it appears, was for extra works, and 62*l*. 10*s*. for 250 feet of stone in the chapels, over and above the quantities estimated by the architect upon which the contractor's estimate had been based, and for which in express terms his tender had been given in. The Board, it appears, was willing to pay for the extra works, but refused to pay for the extra stone, and refused also to settle for the extra works unless the contractor gave a receipt in full of all demand.

For a long time the matter remained in frequent discussion at the Board and with the contractor, until a desire arose in the minds of all parties to refer the question in dispute to a vestry meeting of ratepayers, who ultimately would be the paymasters of the account. But it was contended by the clerk of the Board, according to the chairman of the vestry meeting referred to, Mr. Courtland, that an action should first be brought by the contractor in the County Court, and that then would be the proper time for referring the matter in dispute to the vestry; whereupon the contractor in accordance with the suggestions of the chairman and the clerk entered his action; which it was also understood was to be conducted as what is called a friendly suit, in which all the facts should be admitted, no technical objections taken, and the issue limited to the question, whether the architect, the contractor, or the Board should pay for the extra stone. The case came on for hearing in the court on the 21st of May, when, to the surprise of the contractor, a technical objection was taken by the solicitor of the Board, and the cause thereupon was adjourned.

On the case coming on again for hearing on the 8th ult. it appears, by the report of the proceedings in the *Essex Herald* of the 13th, that the ground was taken on behalf of the Board, that the Board was not liable for the extra work, because the chairman and other members of the Board had neglected to conform to their own rule of giving "written instructions signed by the chairman or clerk of the Board," according to the letter of the contract the contractor had been required to sign; and that the Board was not liable for either the extra work or the extra stone, under the certificate of their own architect that payment was justly due for it, given in accordance with Clause XII. of the contract; because while the contractor had been required to sign the contract, the Board had not signed it, nor affixed the official seal to it, and consequently, that while the Board could hold the contractor to his agreement with them under Clause VI. he could not hold the Board to its agreement with him under Clause XII.!

In reference to the merits of the question of allowance for extra stone, it appears that some time after commencing the work, Mr. Brown suspected the bills of quantities for stone were wrong, upon which he wrote to the architect to inquire whether, in the event of deficiency in these quantities being ascertained, he, the contractor, would be responsible for the error? To this the architect replied that he was satisfied there was no error, but that if there should be error, he, the contractor, would be responsible for it. Upon which Mr. Brown wrote to a house of large business in London, by whom he (the contractor) would not be responsible. At the same time Mr. Brown employed surveyors to examine the bills of quantities with the specifications, to ascertain if there were errors, and to what amount; and meanwhile Mr. Brown desired to postpone his execution of the bond until he might ascertain exactly what position he would be placed in, in the event of material error being discovered.

At this time Mr. Brown had done about two hundred pounds' worth of the work, and being

pressed, signed the contract, and his surveyors soon after reported that there was an error in the architect's quantities, which was communicated to the chairman and other members of the Board, and also to the architect, who still considered his quantities correct, but instructed the clerk of the works to keep a close account of all the stone used in the building, that so it might ultimately be proved in that way whether there were error or not in his quantities. Ultimately, as already stated, the architect satisfied himself that 250 feet of stone had been required for and used in the building over and above the quantities he had given in, and he certified for payment of the same.

It appears that at the trial on the 13th counsel for the Board alleged that Mr. Brown "took upon himself knowingly the risk of those quantities, as he could show in his own handwriting, and, notwithstanding that, he, by some surreptitious means, got Mr. Johnson to give a certificate for this very responsibility he took upon himself." Whereas Mr. Brown avers that this statement is wholly erroneous, and has not the shadow of foundation in fact.

At the vestry meeting, after these statements had been made by the chairman, the clerk to the Burial Board, Mr. Cunningham, said, in explaining why the Board did not attend there, that it would be unfair to the other parties who tendered, having accepted Mr. Brown's as the lowest, then to add upwards of 5*l*. per cent. on the ground of a mistake, which prudence ought to have guarded him against committing. Mr. Brown, in the course of his statements embodied above, said,—as his reason for signing the contract after he had been informed by the architect that the risk as to the accuracy of the quantities must attach to the contractor,—that the clerk to the Board refused to allow him to postpone it, suggesting that the builder next on the list would be called on to do it if he, Brown, delayed. He went on to say there were really 450 additional feet of stone used, but that he had charged only 250 feet, and that the architect had allowed the charge. Further, that he had been told by the committee that they did not wish him to lose the money, but that the architect was responsible to him, and not they. He had then taken the advice of Mr. Duffield, of Chelmsford, who said he clearly had no claim upon Mr. Johnson, who was servant to the Board and not to him.

The architect's letter, dated Feb. 4, 1856, in reply to the contractor's inquiry as to how he would stand affected if the printed quantities should be found incorrect, is as follows:—"I herewith send you the plans of lodge and gates for the cemetery at Braintree, also the quantities of the additional work, and will thank you to put your price to them, and let Mr. Cunningham have the amount. I have no doubt as to the correctness of the quantities supplied, but the risk, if any, must be your own, as it was optional with the contractors who delivered the tenders to take them or not: the plans and specifications were open to all to take their own quantities if they had pleased."

It was asked during the meeting whether the Burial Board, or the architect, received the profit of the sale of the quantities to the builders, but the inquiry was not answered.

On the part of the contractor, one of the speakers pointed out that, as the architect admitted that the stone now charged for was not in the quantities on which the tender had been made, they would only be paying for what they had had by discharging the contractor's claim, and he further denounced very strongly the refusal of the Board to pay the sum they admitted to be due (96*l*.) without a receipt in full!

After considerable discussion it was resolved, by twenty-six to nineteen, "That the matter being under judicial investigation, and one side



only being heard, it is premature for this meeting to express an opinion upon the subject."

Since the meeting the chairman has written as follows touching the defence set up by the Board, namely, that they had not signed the contract:—

"If it were by design that the Board entrapped the contractor into the false and unjust position of being legally bound by the award of the arbitrator (the architect) in favour of the Board, while they (the Board) by this trick—I say trick if it were by design—would escape from that award if against themselves: if, I say, this were by design, it would be simply as base as any compound of treachery and mean dishonesty could well be.

But of course it was not,—of course it could not have been,—by design that this was done; and I must assume that, until the matter fell into the lawyers' hands, the one-sided execution of the contract was an inadvertent neglect only, probably arising from the two distinct instruments, the bond and the contract, being on the same sheet, and coming to be thought of as a bond only.

But what confounds me, and strikes me to the earth I stand on, is to find that men cannot see, that to designally avail themselves of this inadvertent neglect of theirs—at one moment to *disavow* the contract into which they truly had entered, because their own neglect to seal it had disabled the contractor from producing the deed as evidence of the fact on his own behalf; while also, too, at the next moment they *affirm* the contract, and make it evidence on their own behalf on some other point,—that men, I say, cannot see that all this is, in spirit and truth, as unworthy as the fraudulent design in the first instance would have been.

It was truly said at the meeting yesterday, that no individual member of the Board would be capable of taking such a course as this in the conduct of his own private affairs; and the fact is unhappily notorious, that men acting together in boards and corporations, will do things without shame which individually no one of them would be so shameless as to think of.

It is also unhappily, I think, very generally supposed, that a lawyer, acting for his client, may properly put aside all other considerations, and have regard alone to the client's cause, unscrupulous as to its character, and very little scrupulous as to the means by which he may gain it. Now when these two institutions (corporation and law) are put into action together for questionable purposes, we may commonly look for, and shall not unfrequently find, the worst examples of wrong-doing, smothered up in forms of procedure perverted from their uses,—of pharisaical morality,—of whitened sepulchres full of dead men's bones, and all uncleanliness.

Had I been a lawyer, I trust I should earn the reproaches of many boards and corporations, for certainly in the present case I should have said to the Braintrust Board:—"Gentlemen, if you come to me, please to wash your hands clean, for see, there's dirt upon them. Here's your contract, prepared by yourselves, which you have got signed by your builder, which you have accepted and proceeded upon, by which you hold him bound: after getting one party to sign this contract between two parties, why did not your clerk bring it to you, the other party, to sign or seal also? That you were bound to do then: that you are ten times more urgently bound to do now: just take your official seal, and put it to your contract, and having done this act of merest justice to your claimant, and put him in the position he has a right to stand in, then come into court if you please—your hands are now clean—and if we gain your cause, we shall gain it honestly in the sight of all men."

Here the matter at present remains. We have thought it right to place all the facts of the case (so far as we are acquainted with them) before our professional readers, satisfied that both contractors and architects will see that it involves questions of very considerable importance. Justice would say at first sight, if the builder has been compelled to use more stone than he was told would be required, he ought to be paid for it by those who have the advantage of it. Nevertheless, we are not prepared to assert, offhand, that the Board could be compelled, if the case were tried simply on its merits, to pay the contractor for the stone used to carry out the original intention set forth by the plans and specification. The contractor agreed to erect certain chapels, lodge, and gates, "according to the plans and specifications" (though there be added in his tender, "and bills of quantities") "furnished by the architect," for a certain sum, and the Board would probably be able to enforce the

\* The words of the actual contract are not before us.

undertaking, quite irrespective of the quantities. The builder was, moreover, informed before the contract was signed, that the responsibility as to the correctness or incorrectness of the bills of quantities rested with himself; and we must not shut our eyes to the fact that some of those who tendered might have discovered the error and increased their estimate accordingly; while others, according to the architect's letter, might actually have taken out their own quantities: so that any addition now to Mr. Brown's stipulated sum might be an injustice to them. To what extent the Board identified themselves with the furnishing of the quantities we do not know: generally speaking, this step in the proceedings, is taken quite irrespective of the employer.

The strong point in Mr. Brown's case is, that the architect has certified the correctness of his charge for the extra stone, notwithstanding the intimation given by him in the first instance.

We are not proposing to speak very definitely on the matter, because the information we have is not complete. There is one point in connection with it, however, on which we can speak very positively, and that is the inexpediency, to use no stronger word, of the practice, of quite recent date, of architects supplying to builders proposing to tender, the "quantities" in buildings about to be carried out under their superintendence. We have the names of some architects before us, who make more money by this part of the business than by the designing and superintending, and with much less trouble. And why should they not, many will doubtless ask? Why should they not increase their income by the exercise of a knowledge they are bound to possess? Where is the evil? In reply, we should say the evil is that the architect thus becomes to a certain extent the servant of the contractor as well as of his first employer, being bound to the former to see that he is not called upon for more work than was provided for in the bills of quantities. Usually the conditions set forth that the contract is made irrespective of the correctness or otherwise of any bills of quantities; but still the moral obligation exists, and the architect's right position is materially interfered with. We must repeat, therefore, the expression of our conviction that it is not a wholesome practice.

#### A DAY IN LIVERPOOL.

LIKE poor Robinson Crusoe, who had to eat his biscuit as he went about collecting household goods from the wreck, having no time to lose,—we must accept materials for our journal as they interject themselves, whilst pressed by a rising tide of duties; and must register the facts and thoughts of each week, as they are offered. The architecture of our northern towns has become too important to be left out of consideration, in any view we might have to take as to the art of our country; but, to furnish a description of it becomes a labour of considerable magnitude; and a carefully compiled volume, rather than the pages of any periodical work, would be required to do justice to the progress which has been made in and around those towns. We—people of London—have our particular topics of interest,—pressing even painfully, as peculiarly, on us,—but having their relation with the welfare of the country. So, our readers in the provinces—often justly proud of their achievements in architecture—must take something of "the will for the deed" and accept our ordinary fragments of description for the elaborate and exhaustive accounts which might seem to be their due, but which would be supplied at considerable intervals.

There are advantages to the architect especially, as we urged once on the occasion of a visit to a place of less importance than the towns to which we have referred, in cultivation of the habit of noting all that falls within the sphere of observation,—or, as we said, quoting from Sterne, "What a large volume of adventures may be grasped within this little span of life, by him who interests his heart in everything; and who, having eyes to see what time and chance are perpetually holding out to him as he journeyeth on his way, misses nothing that he can fairly lay his hands on!" May we not, then, try what we can take note of in Liverpool, though our visit be but a short one?

We did indeed supply a few particulars in the early part of this year; but since that period considerable progress has been made, several works of magnitude have been completed or commenced, and the quantity

of building of a superior kind that is now going forward is considerable. The impression from a walk through the principal quarters of the town, after visiting other towns, is that more must be doing in Liverpool than at any other place in the kingdom, London and Westminster perhaps not excepted. The population is larger than that of any other town: in 1851 it was 258,236 persons, Manchester being 228,433 persons, whilst Bristol with Clifton was somewhat more than 180,000, Birmingham nearly 175,000, and Leeds about 110,000. The town of course contains at all times a considerable number of strangers. The funds of the corporation are large, and the taste for architectural display prevails generally.

The principal works going forward, are in the streets adjacent to the Town-hall and Exchange. Of these latter buildings, which together form a group possessing considerable merit, the Town-hall itself preserves a high place in our estimation. Amongst the features which contribute to its effect, may be named the small dimensions of its windows of the upper story, and the statue on the summit of the dome. The statue, like some other sculpture on the building, seems to retain an unsullied whiteness, which, viewed against the dark clouds, is the source of considerable beauty of appearance. Wood, of Bath, was the architect. The Exchange-buildings proper, are inferior to the structure with which they group: the windows generally are without architraves; and the details have more poverty of character than those of the Town-hall. The arrangement of the masses, and the piazza round three sides of the quadrangle, are, however, important accessories to the general effect which we have alluded to. In the news-room, some *alto-reliefs* over the chimney-pieces are works of much interest. The discussion in reference to the designs for the Wellington Monument, lends interest to the examination of the Nelson Monument in the Exchange area—a work of monumental sculpture of the allegorical class, which has some pretension as compared with others of about the same date. Nelson is represented as a naked figure; and amongst the attendant allegorical figures, is a representation of Death as a skeleton, placing his hand on the breast of the hero. Here, if there be perspicuity, it may be doubted whether there is plastic beauty. But, as a whole, the work displays appreciation of certain right principles of monumental sculpture: the platform of support, the pedestal with its accessory figures of captives chained, and *basso-reliefs*, and the group at the summit, all combine together; and the only particular demerit, otherwise than the allegory of the kind we have referred to, consists in the omission of mouldings of sufficiently architectural character.

With reference to another subject on which we have lately said much,—namely, the importance of studying the accessories and the area around a building,—we may observe, for the better understanding of a reference which we made to the Liverpool Custom-house, that the flagging in front of that building seems to have been retrenched since we last saw it, by which the portico has lost the little effect that it had. The best evidence of the importance of our arguments on this head—needed only from the fact of the constant disregard of the matter, if not in design, at least in the actual execution of works—is afforded by the state of the ground about St. George's Hall. The dirty grass, or earth strewn with rubbish; the common wooden gates, and the posts and rails in front of the enclosing balustrade, are most injurious to the effect of the building itself, and should not be allowed to remain one week longer. The design and arrangement of the balustrade and its accessories, are certainly much to be regretted: in some places, standing near to the balustrade, the steps and base to the building beyond, are not to be seen without difficulty; or, at all events, they cannot be seen as they should be in their entirety, from the opposite side of the street, where the screen of the railway station is. This peculiarity of course results partly from the site of the building, which is, unfortunately, lower than the street on the side referred to; but the evil has been increased instead of counteracted by the arrangement of the area. The two isolated columns form unquestionably a mistake; and the *couchant lions*, as we have before now said, are so designed and sculptured, that they are ridiculous rather than accessory to beauty of effect. The steps, platform, and podium to the actual building, are, on the other hand, productive of much dignity. Along the edge of the platform, at the foot of the steps, the bases (formed of twined dolphins) for iron candelabra, are placed, the intervals being filled up with stone seats. The end portico, from the descent of the ground, stands upon a grand flight of steps, on a lofty basement with side flights. The columns now appear too closely attached. The sculpture in the pediment, designed by Professor Cockerell, is excellent. We should hardly think that anything superior has been produced since the date of the Greek sculpture; we could not have wished it different; but it does make the remainder of the



building deficient as to the sculptural element. The interior of the great hall, on the occasion of this visit, appeared to us less deserving than the arrangements we have been speaking about, of the objections recorded on the score of the completion of the work generally. It is not to be expected that any architect should divide the intentions of another; and it may fairly be said of the interior finishing of St. George's Hall, that it has been completed more in accordance with the intention of the original artist, than has the decoration or completion of any other building carried forward under more than one architect,—unless Mr. Pennethorne's work at Somerset House is to be considered an exception. The introduction of the organ and gallery may be regretted, on account of the loss of the vista; but the gallery, and, indeed, the whole of that portion of the building, is beautifully designed. We think it cannot but be lamented that the structural and decorative requisites in the architecture, were left so as to appear in some measure in opposition to one another. The hall is lighted—besides the semicircular light at the end—by windows at one side only. These windows, indeed, are so deeply recessed, that they do not appear at all in a view from the end; but we are not sure that the contrast which yet is observable between the two sides of the hall, in a work of this class, is quite satisfactory; and the arrangement, accompanied as it is, by a provision on that side externally, for the lighting—by the omission of a ceiling to the portico—the columns and entablature thus being left to form a screen—allows an opportunity which need not have been presented, to the opponents of the architecture called Classical. The windows are glazed in panes of hexagons and triangles, and are being filled with stained glass. The colours, if not the patterns at present inserted (inferior both to Medieval works, and to many works of recent execution), scarcely apply the beauties of stained glass; but there is still difficulty in combining the effects of colour as produced by such glass, with general decoration, as well as in making the application to Classical architecture. Traceries, forms, or somewhat intricate geometrical patterns, might be introduced with better effect than mere uniform geometrical figures. The concert-room is now completed, and the semicircular staircase-hall below may be considered so likewise. In the latter, the ascent begins somewhat too near the entrance. Columns of the Grecian Doric order, decorated in polychromy of a cool tone of colour, support the ceiling. The concert-room on the floor above, is oval in plan (nearly a circle), the stage, or orchestra, projecting from one end as a square recess, with Corinthian columns. A narrow gallery surrounds the room in bow-fronted divisions, and is supported on caryatides. The general character of the architecture is that of the Cinque-cento Italian style. Round the walls are pilasters, panelled and enriched with ornament on a gold ground. There is an elaborate frieze, with *chimeræ*, scrolls, and pteras, and a cove with diagonal bands and coffers, with elaborate scroll-work. The plafond of the ceiling is divided into radiating panels, with lattice-work, to allow of ventilation. The fronts of the boxes also are filled in with lattice-work, which is partly gilt and backed by crimson cloth. The principal wall-surface is divided into panels, which are painted in imitation of marble. In the chromatic decoration, the chief colours used are cream and gold; but light blue, or lilac, and positive colour to some extent, are introduced in small portions. The columns of the recess, which are rather heavy in appearance, are enriched with scroll-work for a portion of the height of the shaft, the rest being fluted, with ornament on the fillets and gilding in the hollows. The recess is spanned by an elliptic arch, with glazed panels and tympanum. The intercolumns are glazed with looking-glass. The stage advances into the auditory, and is panelled and enriched with scrolls on the front. The architecture may be different in style, both to the exterior, and to other portions of the interior of the building; but it is consistent with the purpose of the room, and has, we think, unusual beauty and merit.

The defective construction, or planning, of the Law Courts, was made manifest during the short visit which we paid to them. The sessions were then going on. All the steps and floors of passages have been carefully covered with kamptulose, so that there is nothing to distract the sound of what the jury should hear: yet it was painfully evident that the interests of prisoners must be endangered. The time we spent, offered, however, a saddening picture of the state of crime in Liverpool. There were four trials gone through, or in progress, during the time referred to—little more than half an hour—and in each one out of three of the cases a woman was the culprit; and in the other case, a woman was one of the offenders. The police say that such predominance of female criminality is usual in the town. As to crime generally, it may be enough to mention that in the Woolton New Model Prison, lately built for 850,

prisoners, there were in it at one time, just previous to our visit, no less than 1,150 prisoners of both sexes. A visit to a criminal court is a painful thing in another respect: the ignorance of those who have not graduated in crime, of the simple purport of the proceedings on which the verdict will be pronounced; the open levity of counsel; the facts which come out, showing dread of the police, sufficient to produce suspicion, if not the crime itself: all these and other things strike the attention of those who are not habituated to the atmosphere of law and "justice." Difficult as the questions of prevention, punishment, and reformation, are, there is much more than has been yet attempted that might be done,—through better education and the provision of homes. The measures of police which may be necessary, should present themselves in some other light than as the tyranny of the upper classes. The absence of suspicion on both sides; the recognition of a mutual serviceableness; and a kindly, whilst unpatronising, interest by the higher class in the domestic condition of those who are called "the poor," are what are needed to amend the melancholy condition of too many of our wealthy towns.

In the way of provision of comforts for the seafaring class, thereby amending what has helped to induce the commission of crime, the Sailors' Home must even now have exerted a very beneficial influence. Owing to the temporary absence of the chief officials, and the accident of the harmless writer of these notes being mistaken for a Latter-day Saint, we did not obtain access to the rooms themselves, but may observe that the arrangement of the plan,—with a central court glazed at the top, and six tiers of galleries on iron supports, running round and giving admission to the rooms,—affords a most convenient arrangement for like cases. The court in the "Home," at Liverpool, is provided with stoves, open on all sides, so that the men can sit round; the smoke-pipes being carried straight up to the roof; and it has seats and tables, and, when we saw it, was occupied by what appeared an orderly and intelligent class of men. The decorative character of the building belongs to the modern unmitigated Elizabethan, in which the forms of scrolls seem as though studiously selected for their ugliness. The doorway has this character. The fronts generally exhibit a considerable surface of mullioned window-opening; and the angles are surmounted by turrets.

The docks have been vastly extended during the last twenty years, and notwithstanding the probable completion, with Government aid, of the docks at Birkhead on the opposite side of the Mersey, complaints are still made of deficient accommodation. About the time of our visit, a memorial of the Shipowners' Association, agreed to at a meeting on the 17th of October, was presented to the dock committee,—wherein *very serious inconvenience*, and trade "constantly increasing to an extent beyond all contemplation," were spoken of. It was asserted that steamers had doubled their tonnage in five years; that ships had to lie for weeks in the river unable to get into dock; that vessels were diverted from the port of Liverpool; and the memorialists therefore asked for "a very great increase of dock space, and especially quay space, on the Liverpool side of the Mersey," "within the earliest practicable period." We have, indeed, heard the truth of this representation questioned: but in all the docks that we visited, the quay space was fully occupied. In the Bramley Moore and other new docks, the arrangements for loading and unloading offer many advantages over those of the older docks. Besides the moveable cranes of great strength, which seem provided in abundance, the railway is brought along the edge of the docks, carried on massive piers and strong boiler plate-girders, for a considerable distance. By cranes, the merchandise is lifted to or from the vessels, or the railway waggons. The ingenuity of contrivance, and elaborate massiveness of construction which the Liverpool Docks exhibit; the swing-bridges, the dock-gates, and the Cyclopean-looking masonry, good brickwork, and massive iron columns of the warehouses, would deserve much study from our professional readers. But we cannot say that in all cases, the beautiful persevering association with what is structurally sufficient; a better character of design in the dock buildings, walls, and gates is needed. Nothing, however, has been produced in Liverpool at any time that equals in deformity the design of the bridges to the new landing-stage. They dominate over the quay side with such ugliness as we have never seen since the reign of iron began. The length of the stage is so great as to require several bridges; at the stage at St. George's pierhead, there are only two. Each bridge consists simply of two blank, red-painted girders. We did not notice that any contrivance had been resorted to, to overcome the difficulty which has been found, except about the time of high water, in the ascent for vehicles.

Amongst the works which are connected with rail-

ways there are some of great magnitude and interest. We can merely refer to the roof of the Tithe-Barn-street station, and the "bow and string" bridges of plate-iron and lattice-work, near to the station. It is pleasing to see, about the town of Liverpool, basins and drinking fountains inserted in the walls of buildings adjoining the footway. About the docks these basins are of polished red granite. As to the water-supply, it would appear that there is still much difficulty; and certainly the colour and taste of the water of the ordinary supply are anything but satisfactory. The sewerage, we fear, judging from the stench from gully-holes in the neighbourhood of the docks, is like that of other places; in some parts of the town, the condition as to outfall is said to be not much better than what exists in London; and in spite of the immense volume of water which there is to dilute, and as some persons we suppose would say, to assist in the ejection of the sewage of Liverpool, of Birkhead, of Runcorn, Warrington, Manchester, Stockport, Bury, Ashton-under-Lyne, and numerous other populous places draining into the Mersey and its tributaries, we are assured that the sewage deposits on the shore at New Brighton, at the mouth of the river, so as to produce serious consequences from time to time to persons visiting that otherwise agreeable place of resort. Referring to the docks—improvements in the streets adjacent to them are greatly required. Along "the line of docks," the widening of the street will be effected at enormous cost; the buildings to be removed being lofty warehouses of massive and durable construction.

Whilst the prominent works of architecture in Manchester are warehouses, the Liverpool architecture is displayed chiefly in piles of buildings let out in offices. The warehouses generally have no decorative enrichment. Perhaps the most prominent of the works referred to—from the quantity and merit of the decoration—is the building in Water-street—a portion of the Tower buildings, erected from Mr. Pictou's designs for Sir Joseph Bailey, bart. and mentioned by us some time ago. It now presents one of its rich elevations to a narrow street: but when the warehouses are removed, this side will front the George's Dock. The windows of the two lower stories in each front are grouped together, under a segmental arch with a bold torus as a label moulding. The piers are rusticated in the lower part; but the base of the building has scarcely massiveness sufficient for the prominence which is given to the feature which has just been alluded to. The windows are wide, and of four lights in the wooden mullions and casements, which bear evidence of the study which Mr. Pictou gives to such matters of detail—as exemplified in the Middleton-buildings at the corner of Fenwick-street, higher up. The first-floor windows are Venetian, with an arched-headed centre light and granite shafts, and are flanked by Corinthian three-quarter columns on trusses. The cornice of the order is carried round the building as a string, and breaks forward under the windows of the top story. The latter have segmental pediments, trusses, and pilasters, which are panelled with red and grey granite alternating in compartments. Much embellishment of a superior character is introduced in the tympana of the pediments, and in other portions of these windows, the key-stones to the other windows are ornamented with heads; and below the modillion and dentil cornice of the building, in the interspaces between groups of trusses which occur over the piers between the windows, are portions of a frieze with heads, and richly-carved ornament. "Bossages," or facet-cut stones of red granite, fill up the intervals of the trusses. The principal doorway also displays rich carving in its trusses, and frieze of fruit and flowers; and it has a door-case of polished slate-coloured granite.—A new building, which is making a good beginning in Chapel-street, is, we are informed, also from Mr. Pictou's design.

In Dale-street, next the Town-hall, a building for the Liverpool and London Insurance Company is now far advanced. It was referred to in our pages in a very recent number, when we were noting some particulars of the great rents realized in Liverpool. We may now add that it is stated to us that the average price paid for the ground was 50*l.* the square yard, and that some portion sold fetched 70*l.* a yard. Mr. Cockerell is the architect. The general character and details of the building bear much resemblance to the Sun Fire Office in London, as in the use of columns in the upper story, and in the ornament of Greek-Italian character. Below the cornice is a frieze with windows in it, and festoons. One of the fronts is broken into a centre and two wings; and next the two recesses the staircases occur. The heads of the principal windows follow the raking line of the stairs, and the ends of the steps are represented curved on the exterior. The want of freshness, by the resemblance to the Sun Fire Office, is to be regretted. Mr. Cockerell's other prominent work in Liverpool—the Branch Bank in Castle-street—improves greatly on acquaintance.



There is a building of posite to the premises of the Insurance Company, which has been often referred to and illustrated; and which would afford the opportunity for some good lessons. It was early in the period of what we may call the recent revival of art in architecture. Considerable skill is shown in the design and treatment of the ornament, which is of Greek character; and though boldly cut, has endured well the action of the weather. The ornament, however, is badly placed, and the main features of the design are tame and common-place. Mr. Colling's work, exhibited in the drawings which he had in the Architectural Exhibition, and which was previously and then noticed by us, is now approaching completion externally. The building is expected to be completed in March, 1858, and is called "The Albany." The objections which we offered to the drawing are, as we expected, few of them apparent in the completed structure; and the work may be justly considered a superior example, both of the fitting use of coloured materials, and of the application of many of the resources which are derivable from Gothic architecture, to a general Italian groundwork of style. The ornament has the combined merit of beauty and distinctive character; and in that particular the architect has failed only in the coarseness of the cornice, which, besides the too great variety in them, are so minute in their parts as to be inoperative in comparison with the rosettes of the old Roman pattern, and in the location of the ornament below the windows, which is hidden by the projection of the cornice. The general ornament, we must say, possesses in a marked degree the attributes of novelty, character, variety, and general merit. The interstices being deeply cut, the ornament shows well, and much of the work being otherwise merely surface enrichment, the stone will probably not be put to too severe a test. The ornament is, as we have said, Gothic in origin, but greatly modified from that style. The archivolts of the alternate windows are varied: the ornament, in one case, is derived from leaves, but is flat on the face; in the other case, it includes a number of rosettes, or pateras.

At the back of the Exchange, at the corner of the street in which is the building last mentioned, is another structure, erecting for business purposes. It makes use, in the fronts, of materials of two kinds,—a yellow-coloured stone and a drab-coloured one, or grey granite. These are placed alternating in the courses of the rustic work, which constitutes part of the design in the basement, and in portions of the front, which form masses, with arch-headed recesses for windows, the latter having ornamented key-stones and carved enrichments. The frieze and cornice of the buildings have oblong windows and trusses. The dark-coloured material is used for window-dressings.

No one, in any way interested in art or history, should leave Liverpool without a visit to the remarkable collection of antiquities forming the museum of Mr. Meyer, the purchaser of the Fussett, the Heitz, and other collections, which would have found their appropriate location in the British Museum. A choice selection of the ivories, and many others of the works of art were exhibited in Manchester; but what was left included Egyptian, Assyrian, Greek, Etruscan, Roman, Early British, Saxon, and Medieval remains; fragments of architecture and sculpture, personal ornaments of all kinds; seals and cameos; arms and armour; diadems, Egyptian mummies, and, in short, antiquities in extraordinary variety and of the most valuable description. The collection of old china is hardly to be surpassed; it is rich in excellent specimens of the blue and white Wedgwood ware, with the designs by Flaxman. The arrangement of the whole museum is such as helps greatly the study of what it contains. It is understood to be Mr. Meyer's intention to present the whole collection to the Derby Museum and Free Library at some future period. Whenever that magnificent gift is made, we trust it will be duly appreciated by the people of Liverpool. At present it cannot be said that the collection is so appreciated: the attendance is about thirty persons a week, and few of that number take any interest in what is exhibited. The sixpenny fee for admission does not half pay the current expenses which Mr. Meyer's devotion to the pursuit, and his liberality to the public, have entailed upon him.

Of the building for the museum and library, above referred to, we are able to say nothing. Dimly clouded intelligence reached us of something somewhere going forward; but as we contrived to pass round St. George's Hall without seeing the new building, we opine that the progress in the work is not considerable. Of the mass of buildings forming the Liverpool workhouse, and several recent churches that we passed, we need not give any account; a day in Liverpool, especially about the docks, or the hilly part of the town, is a thoroughly tiring business; and what we have left unnoticed must stand deferred till the opportunity for another visit shall turn up.

## AN EFFORT FOR LAMBETH.

A CENTRAL "PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH ACROSS THE WATER.

HOWEVER important it may be to embellish a great city, and to provide for its traffic, yet there are questions connected with its moral and physical health of far higher moment. In your remarks, appended to my last letter but one, you well called the quarter of Lambeth, so often alluded to, viz. that which lies between Westminster and Waterloo-bridge roads, and the South-Western line, an "Alsatia." What Whitefriars, as described by the eloquent pen of Scott, was in the centre of past London, such is this spot in the centre of present London. It is a storehouse of moral and physical misery allowed to exist and fester in the heart of the metropolis. Your own observations, and my former letters, have shown how closely, if not exactly, it occupies the centre situation of this vast dwelling-place of human beings, holding just that position whence its moral and physical diverging circle can most readily and widely infect the largest population. Crouched by the margin of the Thames, it has a ready access to both banks. To show its character with the police, it need but be said that the perpetrators of the late mystery at Waterloo-bridge have been more sought for in this quarter than elsewhere, and yet this fertile source of crime is permitted to remain untouched.

We have, within the last few years, removed St. Giles's, and cleared the purlieus of Field-lane. I am sure you agree with me that it is time that the attention of Government and the inhabitants of London should be turned to this other quarter, occupying a much more central position than either of these, and one which embraces not only a larger scope for evil in the streets, lanes, and tenements of the City, but commands also the whole navigation of the Thames in the neighbourhood. It has, indeed, every possible facility for crime and concealment, both by land and water, that London can afford.

Thus, although other eyes seem to have been blind to the force of its site, and its ready access to the metropolis generally, those of vice and dissipation have been long awake to it. These evil denizens have established themselves undisturbed in a situation whence they have the readiest means to do the utmost possible mischief. With vice and dissipation come dirt and drunkenness, and with these disease and pestilence. As at present occupied, this spot is a storehouse and a rallying point for typhus and cholera, whence most quickly to attack the central parts of the City.

But the evil is double,—moral and physical. As soon as the shades of night begin, you may see issue forth from this nest of iniquity troops of the evil and misguiding, as well as misguided, across the narrow bridge of Hungerford, who then spread themselves about the Strand, Charing-cross, Fleet-street, and the neighbourhood, and only return to their first haunts deep in the night, or on the following morning. Various are the trades and divisions of evil occupations of such as these, for I do not solely allude to the unfortunates who crowd some of our principal thoroughfares at night. Surely it would be well if our police authorities would turn their especial attention to the evils of this locality, that possessors, from its situation and character, so much power of mischief. Let Sir Richard Mayne turn the bull's eye of his particular attention on the quarter in question. Surely it only requires that public attention should be fully awakened to the present occupation of this central spot to induce steps to be taken to promptly force on it a radical change.

In regard to the importance of this situation, we may thus even learn from the teachings of the evil. If this spot be so strong for evil, may it not be equally so for good? Not only thus would a upas-tree be extirpated, but on its site a tree for good fruit planted. That this is my thought, my former letters have shown, and also my ideas as to the mode. But the extreme to which I go may be visionary. The stability of our position in public matters is the result, they say, of so many preventive checks as not to allow, may be, of the freedom of such a step as would create so expanded an architectural centre to London as I have indicated; but at any rate the quarter in question might be cleared out, as St. Giles's and Field-lane have already been; and this, according to my belief, would be most effectively done by Government, in the first place, purchasing the property and establishing its regulations on the spot.

Even if an architectural scheme on such a scale as I have submitted to you be visionary, I fancy that the purchase and complete "délaigrage" of the district might become a good "speculation" for Government. The "quadrant space" I have alluded to as "Lambeth-terrace" would make an admirable commercial quarter of the first class; and even its architectural qualities might well move hand-in-hand with those of commerce, if it were to become the site of such

structures as the "Manchester warehouses" lately raised in St. Paul's-churchyard.

It is not in the least, however, that I have moderated my architectural visions with respect to this spot in connection with Trafalgar-square, and the wide bridge uniting them, that I allude to this mode of occupying it, but only to indicate one of the many ways in which it might be made available, which might address themselves more favourably than my own pet idea, to the business mind.

I will not at present say more than to call back the attention of your readers to the fact, that the point of most ready access of all London is at the present moment an especial storehouse of crime, filth, and pestilence. EPILOGUE.

## THE PAYMENT OF ART-CERTIFICATED MASTERS UNDER "THE DEPARTMENT."

THE circular recently issued by the Department of Art, making known the means by which localities may obtain the services of an art-certificated master, has brought us a number of letters from masters in existing schools and other correspondents. One writer, after stating the arrangements under which schools may be formed, says,—"There are also certain notes for the information of schools of art established before the date of these regulations, viz.—'1. In places where schools of art have been established previously to the date of these regulations, the number of the population under instruction in drawing, and not the number of the school's, must hereafter be the rule. There must be at least one per cent. of the population taught drawing by the art-master, or under his superintendence, or the art-master will not be entitled to the annual payment of 3s. on the prizes [on every child who takes a prize]. The children should, if possible, pay an annual registration fee of 6d. If the requisite number of one per cent. is not reached after August, 1858, the certificate, or other allowances to the master, cannot be granted.'

There are other regulations which do not affect existing institutions, so I shall not prolong this letter by transcribing them, but merely wish to call your attention to the injustice of these new rules. In the first place, all the old masters who accepted office before Mr. Cole was appointed to his present position, continue to receive their former income, while those appointed since have merely a guarantee of about half for a limited period.

Secondly, if the master do not give instruction to the required number of one per cent. of the population of the place, his certificate allowance (10% on each certificate) will not be granted. To make this an impartial rule, it should be carried out *universally*. But in London, under the director's own inspection, there are altogether only 3,198 pupils under instruction in drawing, including the students at all the district schools in and around the metropolis; a list of which I subjoin from their own printed documents:—

Spitalfields .....	110
* Westminster .....	40
St. Thomas's Charterhouse .....	80
Finsbury .....	73
Rotherhithe .....	24
St. Martin's, Long-acre .....	69
* Kensington, Gore House .....	62
Lambeth .....	35
Hampstead (no number given) .....	473

There are also forty-four public or national schools taught.

Under instruction	1 per cent. would be
At Birmingham .....	1,433 v. 2,328
Manchester .....	966 " 3,162
London .....	3,198 " 25,000
Sheffield .....	341 " 1,852
Wolverhampton .....	253 " 1,197
Glasgow .....	976 " 3,290
Liverpool .....	2,367 " 3,759
Belfast .....	484 " 1,200

I have ventured on these statistics to prove that few, if any, of the schools at present are in a condition to comply with these regulations, and I maintain that to expect competent teachers to undertake such work for such very limited remuneration, is both unreasonable and unjust. If the Department, or the local committees, wish to retain the services of efficient men, they must hold out better inducements. There appear to be no opportunities for advancement, and all our prospect of promotion seems to be entirely stopped. 500, at 6d., 12½ 10s. per annum; 10 per cent. on the above, at 8s. each, as prize pupils, 7½ 10s.; total for the annual instruction of 500 children, 26½.

AN ANSWER.

It would probably be pointed out by the heads of the Department at home that much of the duty is

\* Since discontinued.



confined merely to supervision of the instruction by the art-master; and, moreover, that his real remuneration is intended to rest on the results of the teaching, and not on the mere registration fee. Moreover, they would say, collateral advantages are secured to him, such as a class for schoolmasters and pupil teachers, with payments also on the results of successful teaching, namely, 30s. for every prize taken by a pupil teacher. A private school, willing to take instruction on higher terms, must also be named. Above all this, he is paid on the certificates he has obtained from the Department. With these various aids, it is thought, we can surely say how truly, that enough is done by the public to aid an energetic and willing teacher in carrying out the scheme of art instruction which it is intended to offer as widely as possible to the public.

On this point, Mr. Wallis, in his interesting pamphlet, "Schools of Art, their Constitution and Management," just now published,\* says,—"In some rural districts, and comparatively small towns, one per cent. may be, and in fact, is, under instruction, is true; but when this rule is applied to such places as Manchester, Liverpool, Birmingham, Sheffield, &c. a plan like this throws such an amount of responsibility upon the masters, for so comparatively small remuneration, that one can scarcely believe that it is seriously intended to be carried out. In Birmingham, and the surrounding district, where there has certainly been no lack of success in quietly extending the elementary system of instruction, and with a central school in which there are a much larger number of young men and youths than in any other school in the kingdom, the numbers have never reached more than one-half per cent. of the whole population."

Mr. Wallis has had long experience, and is entitled to be heard. The great object the Department have in view would seem to be by giving only just sufficient aid to enable an efficient master, with personal exertion, to maintain his position, to extend largely the facilities for learning drawing at the smallest possible cost to the public. We are very much disposed to consider the principle a right one, but they must take care not to carry it too far: until there is a sufficiently strong feeling abroad to ensure the masters a fair remuneration, Government must aid. We want men of ability as teachers, and these will not be obtained unless they are properly paid.

#### AN ARCHITECTURAL REVIEW.

THE LIVERPOOL ARCHITECTURAL SOCIETY.†

So much has been already said against copying, that one gets weary of the subject. But it is still necessary to say that copying and designing are two different things. French palaces are very useful to inspire—to provoke emulation. But we can gain nothing by copying them. Beauty lies sleeping in the fallen ruins of the past, in existing literature and art, in the bosom of surrounding nature, and in our daily life; but it will not be invoked by the slothful, unthinking imitator. It awaits alone the awakening breath of thought and feeling in the earnest, truth-bound soul. Copy a window or portico or picturesque gable into a design, and you have performed no operation of art. These are results of art-facilities in other men; but you have omitted what constitutes the essential vitality of a work, and without which, in an artistic point of view, it is utterly valueless. In exact proportion to the depth of mind from which any work proceeds—the purity of thought of which it is woven—so high will it rise in public estimation, so long will it endure. The attempt to originate absolutely new elements is vain and unnecessary; but we must breathe the breath of a new life through whatever we draw from the urns of the past, and make them plastic in our hands. I believe the Classic architecture, which has been so trammelled and stereotyped, is susceptible of endless variety in its details and features, and of the same systematic lawfulness of proportion as the Gothic.

One evil result, I fear, of this wholesale copying of exterior models, must have been the production of very impracticable and worthless plans—a result which, indeed, contemporary criticism has too much of a tendency to bring about. Though in designing new Government offices it was of some political consequence to the country that the plans should be such as would afford the greatest facility possible for the due administration of affairs, but little was uttered by the press touching the merit or demerit of that part of the designs. The instructions issued to architects very properly required certain indispensable accommodations for secretaries of state, under and private secretaries, clerks, messengers, and so forth; but

\* A paper read before the Education Section of the National Association for the Promotion of Social Science, assembled at Birmingham. London: Simpkin and Marshall.

† See p. 622, ante. From the address of Mr. Huggins: Liverpool Architectural Society.

critics and the public received and treated the competition as if the sole object had been the architectural and sculptural embellishment of the metropolis, and the satisfying of the æsthetic appetite of the people. Had the subject of competition been a new metropolitan cathedral, or other great national monument, there would have been more sense in this; but in offices for the daily transaction of important and indispensable national business it shows a forgetfulness of the useful and practical which is not characteristic of the English mind.

A case of much short-coming in architectural design is our not having to any reasonable extent drawn upon the resources afforded by the mechanical and scientific skill and enterprise of our own day, nor rightly accepted many of the materials that Providence has held out to us, and which properly used might lead to new forms and proportions, and give rise to new laws of design. Those architects of Medieval Europe whose forms we are so scrupulously copying would not have made their windows nor the ribs of their groined ceilings so invariably of stone if they could have made iron ones with the facility and cheapness that we may be casting. What I grieve at in Gothic designs—designs in which many of the characteristic beauties of Gothic tracery could be carried to a greater extent than in stone—we might execute in cast-iron, which, well painted, would be as durable as adamant. An advantage in the use of iron groined ribs, over and above their cheapness, is that we should be more unrestricted as to form than in stone, and be at liberty to make greater departure from the curve of equal horizontal thrust, and this with less need of buttresses. This has lately, it appears, been tried in France. I have often wondered that cast-iron has not become the most frequently employed material for spires and lanterns of churches, for which feature it would have many advantages over stone; it would exert less weight on the supporting tower, it would be less expensive, and sooner raised, being cast in pieces, which could be taken up separately and riveted together in their final position. Beautiful and aerial forms composed of open and pierced work might be produced in cast-iron, such as have never been exhibited in stone, of which latter material there need be no imitation; for general beauty and variety would be better secured by painting them a colour that would contrast with the stone below. The few instances in which cast-iron has been employed for these purposes in modern times, while they prove the advantages to be derived from its application, show, also, the great scope that remains for improvement in its mode of treatment and development of its capabilities; and if, with the mechanical means and knowledge of the present day, it were again brought into use, common sense would, I think, soon lead to its extensive adoption.

But it is to the neglect of wood, and injustice done to it as a building material, that I would more particularly direct your attention. Timber has more and higher structural powers and capabilities than stone. It is not only more easily wrought into any given form of beauty and grace than stone, but it will go beyond stone, and embody forms of which masonry is incapable. And I do not consider its liability to combustion and decay, which is so much harped upon, as a sufficient excuse for the almost total neglect to unfold its properties. I must see why in small churches, where stone vaulting is out of the question as too expensive, groined ceilings of wood have not been tried. A groined vault, formed with bent ribs, as real supporting arches, filled in with lath and plaster or cement, or with an ornamental boarding, which might be decorated with colour, and perforated at pleasure for ventilation, would be as beautiful and genuine a ceiling as could be constructed of any material.

For my own part, I consider carpentry has here a new and untried field—a much larger one than masonry ever had or can have, for not only are the pointed, the cylindrical, the conoidal, the groined, the domed, the pendentive forms—all that masonry ever essayed—at the service of the carpenter, at one-fifth of the expense of stone, but, as before intimated, he may realize effects all but unsustained in the rigid, ponderous substance of the masonry, such as by trellis ribs and pierced work; and there is scarcely a vision of beauty that could enter into the architectural mind but what could be executed in the material I am advocating—a fact which is certainly a set-off against the disadvantage of the difficulty in durability, or rather risk of combustion, for, duly painted, I believe timber would be quite as durable as most species of stone.

So far from being under any temptation to imitate a stone one with it, a moment's reflection would tell us that the nature and properties of wood rendered it a more fitting material than stone for the expression sought in Gothic groined ceilings, particularly that of elasticity, which the stone in Gothic is often forced to assume to a very absurd extent.

The analogies of wood are with more beautiful natural constructions than are those of stone—with the plant or arborescent products of the vegetable kingdom—and therefore it is more legitimately employed in overspreading forms, such as a ceiling, than stone could be, which has quite different analogies.

The ceilings of Henry the Seventh's Chapel and other of the later Gothic edifices, where huge pendant masses of stone, made uniform with the supporting parts of the vault, evince a desire to emulate in stone the powers and capabilities of timber, would have been more rational if executed in timber, and quite as beautiful and artistic. Groined timber ceilings would not only give greater completeness and perfection to the church than the fussy, unquiet, open roofs on which the eye looks in vain for repose, and which are fully as liable to be burnt as any other; but they would be better acoustically, and would also have the effect of equalising the temperature—an advantage which cannot be had, whatever the thickness of the walls, with nothing overhead but slates and boards.

In great works, and where funds are adequate to its effective use and treatment, let stone be used in such parts; but it is quite evident that a timber ceiling of the kind I have described cannot with any justice be called a sham merely because it is combustible. If a building is durably constructed, so much the better—it is durable architecture; but it is architecture, however ephemeral, if it be truthfully constructed and artistically and consistently decorated. Such structures as the Cathedral of Amiens or the choir of that at Beauvais, the strain of whose clerestory vaults is received and transferred to the earth by buttresses 160 feet high in the air, are a wonderful triumph of constructive science; but they are not more truly architecture than if their ceilings were constructed of wood, with little or no strain, and requiring no flying buttresses. The chief characteristic of such structures is their constructive daring, the manifest motive of too many of the late Gothic edifices; but if they are architecture, it is not the overcoming of mechanical difficulties which they exhibit that constitute them such. A building may be worthy, by its mechanical skill and daring, to be numbered among the wonders of the world. It may have domes and vaults a furlong in breadth, and flying buttresses spanning the firmament like a rainbow; but its true place as a work of art will depend on the degree of beauty of form and proportion it possesses. If beauty was not aimed at, it is not architecture. We are pleased by the contemplation of fitness of means to end, and by the evidence of mechanical and constructive ingenuity displayed in the anatomy of a building; but architecture is a psychical principle, and appeals to higher faculties than are called into play by the contemplation of skilful construction; and such an amount of supporting material and superabundance of abutment should generally be given to an edifice as to leave the architect unshackled in the exercise of his artistic powers. Architecture is not the off-spring of dynamics, or the embodiment of the law of forces; beauty is so much a want of our nature that we may let our desire for it overrun present constructive means, and suggest modes of realisation that ideas of utility would never have led to; and, indeed, the higher the class of any given work, the more the idea of construction will be in abeyance, and subordinated to the law of beauty.

But there is another feature in Gothic architecture to which wood is no less applicable—I mean the window, which would be quite as rational and artistic if formed of Baltic pine timber or oak as it is when formed of stone. Nay, it is more consistent with the nature of wood than of stone to assume such forms; wood is better fitted for designs wherein the material is necessarily supposed flexible, and the expression of flexibility is sought, as is particularly the case in the flowing leaf and flamboyant tracery, because it really is flexible to some extent, which the stone is not, and may be even bent to the flowing lines of the tracery.

We have heard a great deal of Freemasons: I should like to see a band of Free carpenters. Its pedigree would be as ancient as its rival's, for Noah, the patriarch of masonry, was, I should think, more of a carpenter than a mason.

Architecture being to serve the physical as well as the intellectual and æsthetic wants of man, must be formed upon various ideas arising out of his nature, and constitution, and social condition; and its finest essence—the spirit of the beautiful in building—is capable of being so formed and adapted to every changing circumstance. It can be as much at home in the humblest cottage as in the royal palace. However small the structure, it will contain here, however large, she can pervade and fill it. She has no objection to wood, or iron, or even to cement as the material of her tabernacle, any more than to granite or marble; nor has she any partiality with regard to style; all she demands is truth—truth to purpose, to climate, to everything. However stern and unyielding the requirements of utility, she can obey



them without sacrifice of essence or compromise of dignity. She can pierce the clouds in a spire or the rock in a cave temple as readily as she spreads her meshes over the earth; she can float over the sea in a ship, or span the river in a bridge. Utility will never demand any form, science will never offer any construction, nature or discovery will never present any material, but what architecture may appropriate and beautify; and so far from these requirements or gifts being dangerous to the spirit of the beautiful in building, they will be so many means of its further development—so many new lights into fresh regions—suggestions for new incarnations and revelations of its spirit. She must grow with the growth of society in civilisation and refinement, and press into her service all of nature, science, sculpture, painting, literature, history that she can use, which will come to her aid when she bids them with dance and with song.

The career of architecture cannot be considered as finished until it has assumed aspects suited to every climate and every condition—social, religious, moral, intellectual, and physical—of which man is capable; and until it has recognised every mode of construction, and used every material consistent with its nature and properties—until it has availed itself of every advantage which the advancing mind of succeeding ages may create for it, and possesses as many species and orders of beauty as are found in its great prototype.

When I take such a view of architecture as this, it grows in my estimation into a larger thing than it is popularly considered. Engineering, for example, melts into it, and is entirely embraced by the theory. Indeed, I cannot state any distinction between architecture and engineering, that will endure in any broad view of the former. Bridges, for example, are as susceptible of beauty as houses. Bridges, and mills, and aqueducts, and warehouses, and factories—everything erected by man upon the face of the earth—may, like the works of nature, have its own species and order of beauty.

[The speaker then commented on various works in Liverpool, and urged, in concluding his very able address, that the great element of strength in intellectual pursuit is sincerity.]

Sincerely (he continued) in the exercise of what powers of common sense, imagination, feeling, or fancy we may possess, will operate like a creative spirit that will open to us new worlds of thought and emotion—that will call

The future from its cradle, and the past  
Out of its grave, and make the present last  
In thoughts and joys which sleep, but cannot die,  
Folded within their own eternity.

Devotion to the promotion and discovery of truth, in whatever department of intellectual and useful pursuit, is devotion to good, which must be its end and result; for truth, in leading to nobler ideas of God and his works, is one with good. But it also directly operates beneficially upon ourselves, by at once pre-occupying the mind with pure and lofty images, that must inspire a distaste for vice. A full mind, some one has well observed, is the true Pantheism: it is only in some corner of the brain, that which we leave empty, that vice can obtain a lodging. The man who joins in some noble pursuit is in less danger of being drawn along in an ignoble one.

I address these words more especially to students, and whose guidance I know is a serious consideration with their seniors. To them a few earnest words touching the conduct of life will not be deemed impertinent or uncalled for.

I see before me young men about to go out into the world to practise on their own account. A great point with such will be how they are to get into practice. I am sorry to say that, at the present day, success in this is not generally in proportion to the artistic and moral excellence of the man—rather otherwise; and though I would not by any means have them to judge of an architect's character by his good or ill success in his profession, and estimate his integrity in the inverse ratio of his acquired wealth, yet, if professional advancement were the paramount consideration in life, my advice to them would be not to be over scrupulous with regard to the means they employed. Be not, I would say to them, too careful to let your speech at all times correspond with your real sentiments, and to follow your own intuitive convictions of what is right. If some well-to-do person calls upon you, desirous of building a large house for a sum considerably under prime cost, don't tell him what you think of him, or even hint that it is wrong. Set to work and see what you can do by an ambiguous specification to entrap some unwary builder. Whatever your conscience may say about it, don't "put your foot in it," as it would be termed, by offending those who have wealth. Retain them in some way, and you may get rich—say, and respected, too, by the great bulk of your fellows. But turn the other side of the medal of life, for it has two sides. By a law of compensation which is in force and operates throughout

the universe, you must give value for this: for everything you gain you lose something: the thief, it is well said, steals from himself. As he who does a good action is proportionally enabled, so he who is guilty of a mean one is by that deed contaminated and degraded. You gain money, but you must forfeit what all the gold of California could not replace—the consolation and the hope that spring out of the cultivation of your moral nature. You have violated its laws, and you must pay the penalty: you have sown the wind, you shall reap the whirlwind.

A quiet conscience in the breast  
Hath only peace, hath only rest.

#### THE REVIVALISTS AND THE VERNACULAR ARCHITECTURE.

It is impossible not to admire the energy and determination with which Mr. Scott is endeavouring to aid, if not to take the lead, in the onslaught against Classic architecture as applied in the public and private buildings of the country. No one can for a single moment hesitate in acknowledging the desirability of improving what he terms "the vernacular architecture of the present day;" and all real lovers of pure art must rejoice, that by the pen and pencil, in theory as well as in actual practice, the public mind is becoming more deeply interested in the inquiry as to the capabilities of Gothic for universal application; meaning, of course, the use of Pointed instead of semi-circular arches, as elements of construction or ornamental detail.

I have been led to make the foregoing remarks from having read Mr. Scott's last essay at the Doncaster meeting of the Yorkshire Architectural Society, in which an interesting *résumé* is given of the rise and development of Pointed architecture, its present position, and future prospects. On that occasion, speaking within sight of the noble parish church which is rising under his direction,—surrounded, probably, by friends and admirers only, Mr. Scott may be pardoned for having permitted his zeal for his adopted style to lead him to utter hard things of others, who from education, partially, or other circumstances, may have hitherto failed to perceive and acknowledge the universal applicability of Gothic, or to disparage and disallow the beauties of the Classic.

It is very rarely that I venture into print, and it becomes especially hazardous when I purport breaking a lance or two with so well-prepared and redoubtable an antagonist. However, it is only a friendly joust, and not a mortal encounter, that I propose to myself; and Mr. Scott, for old acquaintance sake, will grant my humour a little exercise.

I do not know whether Mr. Scott reckons me as one of his devoted band, who have helped, or are still helping, to carry out the "great artistic revolution;" but as I have knowingly committed myself to the adoption of Classic as well as Gothic, according to the taste of my friends, and shall still do the same, I must of course acknowledge that I have no claim to such a high and orthodox position, but must be one of those who are conspiring against our vernacular architecture, and indirectly aiding and abetting in reducing it to its present low state of degradation. It is very hard to be in such a dilemma, but it is evident that all who cannot at once turn up *proteroperfect* Goths, and sign the pledge, must be accessories before or after the fact, to the debasing of the current architecture of her Majesty's realm.

It has never occurred to me, and probably many of my professional brethren are equally ignorant of the fact that this pure Gothic movement is a "mighty and arduous undertaking." It is usually admitted that all who desire to excel in art or science must labour hard for distinction. The struggle cannot be exclusive for one branch or section of art or science irrespective of another. Circumstances and position sometimes abate the difficulties, but never entirely supersede the necessity for exertion. The higher the aim, so much the more are energy and perseverance required. Is it not an admitted fact that Mr. Scott, at all events, has met with the due reward of his exertions, not only in the esteem and confidence of the public, but (if such transcendentalism ever thinks about it) rewards of a more substantial character, and not wanting, also, in full abundance.

Perhaps one may not fairly appreciate the efforts of the *exelsior* party; but when men write books deliver lectures or make speeches, it is that they may be heard of men, and obtain that honourable distinction which every true artist or architect aims to obtain, not for the sake of fame only, but for its collateral consequence (*videlicet* a subsistence). May we not, therefore, a-sign equal merits to those who have the same object in view, but pursue a different course for its attainment? If Mr. Scott and his comrades had lived half a century earlier, they would, in all likelihood, have been as enthusiastic in Greek as they now are in Gothic; and the same genius which produces now a fine fourteenth-century church would

have reproduced or faithfully and skilfully adapted the Grecian or Roman style.

Mr. Scott says that "the wretched incubus our vernacular architecture is alien to our race and our religion." Without reverting to the difficulty of proof that England ever had a purely indigenous architecture, I will ask whether such an assertion can, with propriety, be made, except by supposing ourselves living in the sixteenth instead of the nineteenth century? The religion of this country is, or ought to be, Protestant. I have yet to learn that the architectural forms and details of our buildings have anything to do with the Reformed or any other Christian church, the Roman Catholic not excepted, which employs Classic in Italy, and Gothic in Britain. In fact, if Mr. Scott's remark is carried to its legitimate conclusion, the nation must change its vernacular religion as well as its architecture, so that one may be consistent with the other; for there is no denying that the "glorious architecture of our forefathers" was certainly in perfect harmony with the religion they professed. This point might be worked out much more elaborately, but I will now only remark, in passing, that Mr. Scott has unwittingly given one of the strongest reasons against the universal adoption of Mediæval architecture.

Perhaps Mr. Scott will be able to explain more satisfactorily on a future occasion how this faithful and earnest-minded band, who are destined to work a revolution in architecture, were instinctively led forward, unbiassed and unguided, to the same object and result; and how it came to pass that when they intuitively discovered the "right and the beautiful" in the one style, they, at the same time, were made sensible of the "intrinsic baseness" of the other. I am careful to use his own words, because it might be considered that it was hardly possible for an accomplished architect to use such terms, and so utterly to depreciate and ignore the works of his predecessors and contemporaries. It is true that Mr. Scott immediately makes a kind of apology, and is afraid that he may be considered too illiberal; but even when he speaks of the glorious works of Sir Christopher Wren and others, he calls them high-pressure productions; and that their fitness for a national style is not to be judged by such examples. This wholesale way of disposing of all the architecture of this country, from the days of Holbein and Inigo Jones to the present time, shows anything but an unbiassed mind; but the term will equally apply to any of the most beautiful monuments of this or any other country: they are all the results of severe study and great experiences, whether they are of the purest Greek, Roman, or Gothic,—whether of the earliest ages or the nineteenth century. Of course, Mr. Scott's eloquent description of what our towns and villages ought to be architecturally depends very much upon the limits to which the vernacular may be allowed to go. Are we to go back to the Middle Pointed or Perpendicular for a starting-point? The element of picturesqueness is much more dependent upon form and outline than details; and it is easy to fancy a perfectly beautiful village or town, in which not a single pointed arch nor mullioned window can be seen, nor even a high-pitched roof. It appears to me that a true artist cannot design an intrinsically ugly building. The powers of mind will show themselves, and it will be found that the uninteresting character of an ordinary building for domestic purposes is to be attributed to the active presence of the mere builder, and the absence of the true architect. As the profession extends its influence, so we may hope for a better state of things. For one professed architect who originates, there are a score of builders who imitate; and when Mr. Scott and his friends have decided upon the vernacular, they will soon find their best points caricatured, and every principle of propriety defied and set at naught.

I perfectly coincide with the *résumé* of Mr. Scott, and his correct description of the origin and progress of the movement towards the revival of Pointed architecture in our churches. I am also fully prepared to admit its surpassing beauty and general fitness, and am thankful to all who have laboured hard to make its true principles more thoroughly understood.

The village and town churches are now properly cared for, and all persons possessed of any taste or feeling must acknowledge that the simple form of the village church, with its modern tower or spire, leaves nothing to be desired. There is, however, a problem, which the revivalists will have to solve, and that is, how far the Pointed style can be successfully applied to the erection of large churches, in which the preacher can be seen and heard by the whole congregation, and in which the chancel is reduced to the simple requirements of the Protestant ritual. If it fail in this, but which is only a fair test of its elasticity and adaptability, it is not too much to anticipate that these buildings will be erected in a different style.

In reading Mr. Scott's remarks upon architectural competition as one of the drawbacks to the cause which he so zealously defends, it cannot be denied



that throughout the whole there is an undue exaltation of self and company, and a most unwarrantable depreciation of those individuals who, though not bitten with the Mediæval mania, are called upon, in the legitimate exercise of their profession, to erect Gothic churches. It may be correct that there is an actual majority of works in which the true feeling does not prevail, and which have been erected by architects without Mr. Scott's arbitrary pale of civilisation; but is it not the legitimate result that all cannot be first-raters, and that, instead of complaining, he, Mr. Scott, ought to rejoice that the principles which have been laid down are considered worthy of adoption by the majority of the profession, when called upon to erect churches or other ecclesiastical buildings? Surely, they cannot mean to ride rough-shod over the length and breadth of the land, and stamp out all those attempts which do not emanate from the learned and accomplished few. There are abundance of high-pressure buildings which fall to the lion's share; and there must, and always will be, a certain proportion, if not an actual majority, of mediocre productions.

In leaving this part of the subject, I cannot but think that the writer would have done well to have omitted the whole of this paragraph. It must be very tender ground indeed to revert to the subject of competition, for no one practised it more universally or successfully in the commencement of his career, and even now he is found in the list of competitors when the stake is worthy of the effort.

I fully agree with Mr. Scott that Gothic architecture, if the Perpendicular period be included, can be adapted with fair success to numberless buildings besides the church, school, and other buildings exclusively ecclesiastical. I also admit that there is something fascinating in the study, and that it is not unlikely to take its place, besides other regular styles, in domestic architecture, and to have its ardent admirers and advocates; but that it will ever become the native or vernacular style, to the exclusion of all others, I cannot believe, and for the following reasons.

In the first place, the circumstances of the present day are totally different to those of the fourteenth century, which Mr. Scott proposes as the starting-point, from which those who are engaged in the attempt to achieve a vernacular style are to aim at developments.

Almost all architecture worthy of the name was at that period exclusively in the hands of the educated classes, and knowledge and literature were then nearly confined to the ecclesiastical body. It is well known that the ablest architects were churchmen, that they possessed the means as well as the ability to design and control the erection of abbeys, monasteries, and churches. The dignitaries of the Roman Church employed much of their superfluous wealth in the erection of buildings calculated to impress the uneducated peasantry and the poor with feelings of reverence and implicit reliance. Whilst, therefore, the few could so completely control the many, it is no wonder that masterly performances emanated from their hands, in the same way that any autocrat can despotically direct the labours of his subjects to the achievement of any desired object. There was also a perfect unity of purpose, and, as usual, one or two master-minds in the kingdom ruled over and gave the key-note to all the rest. I am confident in the persuasion that, under no other circumstances, would the same results have been attained. And what is the case now? Is there the slightest parallelism? How many ecclesiastics and ministers of religion are exactly agreed in their opinions? Can ten or even a less number of architects be found who think alike on the subject of style? Even Mr. Scott claims "perfect freedom" of thought and action to all who agree to start with him from the same point. For how long a period would any harmony of movement continue? And how very soon would they be found diverging, more or less, from the original centre and starting-point. Again, if every architect were content with his knowledge of his art up to the fourteenth century, and did not seek fresh aspirations, there might be some slight hope of agreement for a short period; but presently we should find that one, after the harassing fatigues of his arduous and painful duties, hurries off to the sunny climes of Italy, and feeds his fancy and writes his book; and another goes in the opposite direction, and finds food for contemplation and study there. Some may visit the East. Now of this we are certain, that the journey is undertaken for two reasons, of which a search after something novel is not the least important.

It is curious to watch the result of this. If an architect writes a book, and makes pretty illustrations of this or that arch, and this or that window, he cannot help finding that he has fallen violently in love with something which he has seen under particular circumstances, and considers perfection. Perhaps it may be little more than the peculiar form of an ogive head, but that fixes the bent of his studies; and if he were to go another year into the

East, it is not improbable that he might find himself inclining towards the cognate forms of Saracenic. Our graver friend who travels northward, is not likely to be cheated out of his first love; but would be found, nevertheless, diverging at an opposite angle altogether from our Eastern friend; and it is clear enough what the result would be.

Another great difficulty in the way of a universal style is the tendency to travel amongst those parties who chiefly employ architects, whether clergy or laity. They, too, imbibe their favourite notions; and on returning, not unfrequently wish the realization in their country of something which they have seen in their travels. We cannot fancy such an individual giving up his croquet because his architect tells him it is not in the indigenous or vernacular style.

Again, the free institutions of the country are alike opposed to any arbitrary rules of precisising architecture. The very fact of the Legislature applying for plans for palaces of administration, without defining any style, is of itself a convincing proof how unsettled men's minds are on such a subject. The real fact is, that though men almost universally admire a good building when it is done, they do not take that paramount interest in its design and development; and though Mr. Scott appears to think that there is a very growing feeling in favour of Gothic architecture, I am inclined to think that it is confined to a comparatively narrow circle.

That freedom of which we all boast is most certainly the greatest enemy to a national style—for did John Humphries build his house in the Classic, Thomas Williams would, undoubtedly, have his in the Gothic.

This is, I think, taking a fairly philosophical view of the whole subject, and when it is also borne in mind that for a great number of utilitarian purposes a modification of Classic is best adapted, and that for engineering works Gothic is nearly, if not quite inadmissible, surely it is vain, on the part of the revivalists, to indulge the hope that we are on the eve of accomplishing what the smallest approximation to universality of style.

I am quite willing to make the attempt in the same direction when occasion requires it, but must be as free as the air to please myself and others.

J. HENRY STEVENS.

#### BRANCH FEEDERS FOR RAILWAYS.

It is rather a tantalizing circumstance, that branch railways, which ought to have been most profitable and extensive traffic feeders to main lines of railway, have but too often proved ruinous; and that the sad experience of this untoward result has checked, or rather entirely put a stop to, the spread of that universal network of railways with which it was at one time expected that the whole country would be interlaced.

Amongst the principal causes of this state of matters doubtless was the fact that such branches as have been made were of far too costly and ponderous a description; but one chief cause of this very costlyness has been the state of the law as regards railway gauge in general. By 9 and 10 Vict. c. 57, a uniform gauge for all iron roads, of 4 feet 8½ inches, was fixed; so that branches were necessarily laid out upon the same grand scale in most respects as the main lines already constructed. Another cause of expense was, and is, the necessity of obtaining special Acts of Parliament for every separate branch or feeder. But were these minor and tributary lines to be exempted from the main gauge law, and a general Act of Parliament passed, promotive of such branch lines, and under which all could be constructed at less low costs than now, a lighter and more profitable order of tributary lines might soon be plentifully spread over the face of the land, to the vast benefit of general commerce and intercourse, as well as of the main trunk and main branch lines already formed, and of others which would soon be added to the general system. As it is, we have, as it were, but the leafless, twigless trunk and large branches of a complete railway system, and from want of the minor ramifications the great lines languish in a state of comparative atrophy, and the greater portion of the country districts are still restricted to the old expensive jog-trot system of traffic which prevailed 100 years ago.

Considerations such as these, apparently, have induced a well-known architect, Mr. Edmund Sharpe, to indite and publish "A Letter on Branch Railways, addressed to the Right Hon. Lord Stanley, of Alderley, president of the Board of Trade, containing suggestions for the creation of a system of secondary railways for the agricultural districts." In this tract the author points out, as we have here done, but more fully and explicitly, the hinderances to the expansion of our railway system, and suggests the necessary

• Simpkin, Marshall, and Co. of Paternoster-row, publishers.

remedies. He then proposes the formation of two classes of secondary lines,—the first-class tramway, worked either partially or wholly by locomotive power, and the second-class tramway, worked by horse power, and both differing essentially from the ordinary Parliamentary first-class railway, at present in use, as in gauge, for example, which he proposes to be only 3 feet instead of 4 feet 8½ inches. As regards the diminution of general cost resulting from such a decrease of gauge, Mr. Sharpe observes, that the narrow mineral railways of 2-foot gauge and upwards, existing in different parts of the kingdom, and costing from 8007. to 1,2007. per mile, illustrate the extent to which this reduction of cost, dependent principally on width of gauge, may be carried. Three feet he considers to be a width which, intermediate, as it is, between that of the mineral tramway, and that of the ordinary first-class railway, would meet the requirements of the secondary railways, and he is actuated by a certain amount of practical experience in the matter, in recommending such a gauge for the purpose in view.

There is no reason, he remarks, why extensions of this 3-foot tramway should not be carried into every quarry, mine, factory, or farmyard, of the valley or district along which the line runs; nor why each large farmer and occupier should not have his two or three trucks, carrying off his produce and bringing back his coal and lime; and as is incidentally remarked in regard to the latter of these articles, there is no doubt that immense tracts of land now lying comparatively waste throughout the kingdom, might, by its introduction at a cheap rate of carriage, be brought into profitable cultivation.

Of the disadvantages under which those districts labour that are remote from a railway, the author gives the following instance, adduced by an agriculturist residing near Portmadoc, in North Wales:—

"He informed me that the dealers who frequent that district, with the object of supplying the great markets of the manufacturing counties, have a regularly descending scale, in the prices which they offer, as the distance increases from the point where they leave the rail. In the case of cattle, which are bought by the head, it is difficult to register this abatement of price; but in the case of pigs, which are bought by weight, it can be closely fixed. A pork-butcher, for example, starting from the rail at Caernarvon, by the time he arrives at Barnmouth, will not give so much by 4d. per lb. for the live animal, as he will at Caernarvon; the loss, which the farmer sustains, being in this case no less than 15 per cent. on the value of the article, an amount sufficient to send the animal 400 miles by railway."

Our readers know Mr. Sharpe chiefly as the author of "Architectural Parallels, and other similar works, but he has had long connection with the practical working of a railway, and is well qualified, by special experience as well as general ability, to speak on the subject in hand.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE first meeting of the session was held at the rooms in Grosvenor-street, on Monday evening last, the 2nd instant, Mr. Scoles, V.P., in the chair. A long list of candidates for membership was read; and, at the close of the proceedings, Mr. John Clayton was elected a fellow. Mr. C. C. Nelson, honorary secretary, announced various donations, and Mr. Digby Wyatt laid before the meeting an outline of a work on Heraldry, about to be published by Mr. John Papworth, calculated to supply a deficiency.

Mr. Wyatt Papworth then read a paper entitled "An Attempt to determine the Periods in England, when Fir, Deal, and House Painting were first introduced, with Remarks on the Processes of the Latter."

A discussion ensued on the use of varnish without paint, and the value of zinc paint, in which Mr. C. H. Smith, Mr. Crace, Mr. Godwin, Mr. I'Anson, Mr. Ashpitel, Mr. James Thomson, and others took part, and was of practical value. We shall recur to it when we have more space at command.

A rubbing of the brass, which has been prepared as a memorial to the late Mr. John Britton, to be erected in Salisbury Cathedral, was exhibited. "Two Angels under a canopy hold a scroll, inscribed:—

"In memory of John Britton, historian of this edifice, and author of the noble series of works on the Cathedral and Mediæval Antiquities of England, this memorial is erected [with the concurrence of the Dean and Chapter] by members of the Royal Institute of British Architects, to record their sense of the eminent services by which he revived the admiration of Englishmen for the venerable monuments of the taste and piety of their forefathers, and gained for these majestic structures the respect of foreign nations."

Born July 7, 1770, at Kingston St. Michael, Wilts. Died January 1, 1857, in London. Buried at Norwood Cemetery, Surrey.

Around the whole is an ornamental border, containing in it a verse from the 48th Psalm,—"We have thought of Thy loving kindness, O Lord God, in the midst of Thy temple."

The brass has been executed by Hardman and Co. and will be inserted in a slab of marble.

Mr. T. H. Wyatt, in presenting the rubbing, said



the committee had deputed to him its erection in Salisbury Cathedral: there was some little difference of opinion as to the site between the Dean and the committee, and this also had been left to him to settle.

#### ARCHITECTURAL ASSOCIATION.

On Friday, the 30th ult., a meeting of the members was held at the hall in Lyon's-inn, Mr. J. Norton, V.P. in the chair.

Mr. E. Mallandaine read a paper on "Architecture, and in connexion with Competition." A part of this we give in the author's words below.

A discussion ensued, in which Mr. Wigley observed that, although it might be utopian to anticipate that they could altogether cure the evils inseparable from the present system of competition, still it was competent for them as an association to propose remedies and resolutions for that purpose, and to suggest honesty as well as competency on the part of judges in matters of competition, for without competency there could be no honesty in judges. It might be replied, to any complaints that were made against the present system of competition, that there was no code of rules proposed by the profession; and although general rules existed in connexion with these matters, still unless they were formulated into a code they could not be expected to have the effect they otherwise would. The self-sufficiency of a set of men, brought together on a competition committee, was frequently astonishing. They no longer had the modesty of individuals, but acted with the despotism of numbers; and if an individual architect complained, the answer was, two or more heads are better than one. It was, therefore, the duty of the association and other professional bodies to show them something like architectural sense on the subject. It would be remembered that the Architectural Association ably moved in this matter in 1849, but nothing definite was done. The circumstances were different now, and it was their duty to draw up and establish a code of competition, which should be sent for approval to other societies at home and abroad, and with this view he would propose,—

"1. That Messrs. Billings, Capes, Colling, Gray, Hayward, Rickman, Truettin and Young, with power to add to their number, be requested to join the members of the committee to revise and publish a new competition code, first printed by the Association in 1839.

2. That it be made binding on all members of the Association, present and future, to sign the competition code when approved by a special general meeting, after the code has been read at a previous meeting; and that any breach of such code shall render the members liable to exclusion from the Association.

3. That the competition code be published by means of a loose sheet inserted in the professional papers once every year.

4. That a copy of the competition code be forwarded by the secretary of the Association to every competition committee, with a request that it be adopted, so as to allow of the members of the Association taking part in the competition.

5. That a special competition fund be raised by the Association from among its members and their friends, to carry on the expense of publishing.

6. That every member of the Association, who is also a member of the Institute, be invited to concur in a memorial to the council of the Institute, representing what has been done and resolved on by the Association, and calling upon the Institute to do the same.

7. That the same invitation be sent by the officers of the Association to all the other architectural associations at home and abroad; and that either the president or the secretary of the Association, or both, be requested to communicate with the local and professional papers, in the name of the Association, whenever any defects on competition judgments are pointed out to them, or come under their notice."

Mr. Bennett seconded the resolutions, and after remarks by Mr. Capes, Mr. Rickman, Mr. Lloyd, and Mr. Bunker, the resolutions were carried.

#### THE PRACTICE OF ARCHITECTURE.\*

We suppose our student by this time to be well acquainted with all our modern appliances in construction. And here, I may remark in passing, that wonderful as are some of the ancient structures in our own land, and more wonderful, perhaps, some of far distant countries,—of some of which the method of construction seems to have been lost to us for ever,—we must, if we even lay ourselves open to the charge of self-glorification,—we must congratulate ourselves on being in possession of some of the most wonderful contrivances for increasing the weak power of human hands, and carrying out the boldest of human ideas. The travelling-crane, the steam-engine, the pile-driving machine, the even mechanical use of rails, for lessening the labour of traction in the conveyance of materials, are a few of our modern boasts, which enable us, when we earnestly put forth our powers, to erect structures of wonderful size and importance, and with a speed hitherto unrivalled in the annals of building. We do not require our tens of

thousands to scoop out our canals with unremitting and faithful toil, as inhumanly ere now has been done by Eastern despots: the miserable labourers perishing in heaps as the work proceeded. We do not want our hundreds of thousands of human cattle to build pyramids, and to be decimated in return. But, be it spoken with shame, how often do we neglect the great facilities and knowledge we possess for erecting imperishable structures. How often do we prefer building with unstable brickwork, so unsightly that we hasten to cover with a hideous mask of cement,—cement, forsooth!—in our weak attempts at something beautiful, so nothing architectural? How often do we use, even with our eyes open, the most perishable description of stone, hardly worthy of the name, and then, with an infatuation apparently the punishment of the mis-demeanour, pitifully search for some insulating compound, to perpetuate the transitory architecture!

All this is very degrading: we possess an inexhaustible supply of some of the finest building stone in the world; and we content ourselves with cement, or the use of some foreign or bastard description of material: we even hear of walls of concrete! We have the largest quantity of iron perhaps of any nation, and certainly the greatest means of most readily making it available, and might make it greatly conducive to rendering our buildings, I will not say fireproof, but less susceptible of taking fire. We have iron, and we use only timber,—timber for our floors, roofs, partitions, and, when we want cheap buildings (and it is a great mistake to think so), for our enclosures. Instead of semicircular arches to our windows, we must have straight, or 'no arches at all,' which, of course, fail, and produce settlements. Instead of proportionable supports to carry a superincumbent front, we throw across a timber breastsummer, supported by feeble story-posts, and even that breastsummer put in without any thought as to shrinkage or settlement. If our partitions must be of timber, why are they not more frequently trussed? The expense is but trifling. If we cannot be fireproof, let us at least not become ruinous without fire. Again, is it proper construction to carry up two stories of brick walls perhaps 14 inches in thickness, on nothing but timber or even iron girders, with a few spare columns under them? What ensues? Disapidation! We cannot even remember the wholesome rule of "Pier over pier; and void over void."

But all this is, perhaps, tedious. The knowledge of the most approved methods of construction of course supposes our student to be well acquainted with all the known systems of roofing, trussing, framing, vaulting, &c.

We now initiate him into the arts of design. But, as Sir Joshua Reynolds said, "Nothing ever out of nothing came." What is design? It is not copying some good example. It is not using column, entablature, and triglyph, with a proper proportion of pilasters in continuation, and round the edifice: this is simply attempting to conceal our want of design. It is not the insertion of an evenly balanced number of windows (though most probably an odd number) with the prettiest and strictly proportional allowance of architrave, pediment, and console to ornament them; the use of a few rustications, or even that all-important triumph, the introduction of a few lesser or greater breaks in the fronts, producing that delightful play of light and shade so refreshing to the artistic mind.

These are all nothing: they form but the keyboard, the notes, the strings—the means, the appliances. These latter are not music; the former not design.

We must make our young architects acquainted first with the mechanical parts of his fine art; make him draw as rapidly as he can write, until, in fact, to draw will be the easier expression of the two of his ideas. We must give him the grammar of his art, the known rules of taste, of proportion. We must feast his mind with the contemplation of the best examples of ancient or modern architecture, strenuously warning him against copying; point out their beauties and their defects in regard of taste; keep him from a superlateness of ornament, which is merely gaudy and very expensive trifling. We must even teach him the much-reviled five, or more properly three orders. We must teach him to tint, by way of distinguishing the various materials shown in his drawings; and here carefully prevent him from running into any excess of skybrush and colour; so that he shall not produce "a sky before or after able to construct a roof under it."

After these elements, he will do well to connect a little his ideas by visiting existing structures—say, churches, hospitals, theatres, baths, club-houses, &c. &c.—not, of course, neglecting the requirements of the more homely but much more frequently required domestic dwelling-house or mansion, with all its varied appendances of closets, libraries, music-rooms, and, perhaps, studios, &c.—never contemplating the possibility even, if he have a mansion or a ducal

castle to embellish *interiorly*, to do it in unarchitectural discord with the *exterior*.

In all these buildings he will carefully remark the varied requirements or, not less important, the various omissions; studiously noting all in that important auxiliary his travelling note-book.

And thus at length, with a *practical*, which should only be a synonymous term with *scientific*, knowledge of his profession; with a cultivated taste not *fettered* but *trained* by rules; and an intimate acquaintance with the requirements of the buildings he is going to handle, our architect will design.

He will design in the only sound manner. He will first fix upon the style he intends to adopt—be it Pointed, I believe, Romanesque, Elizabethan. He will produce his plan, putting every thing in its legitimate place, studying economy of space with facility of access. No waste of room in passages will show itself: staircases will be made of convenient and, in public buildings, of ample size, and absolutely incombustible; and last, though not least, all will be well lighted,—a rather important point now sometimes unattended to by our architects, who most unaccountably forget that to see, it is most necessary to have light.

With a well-studied plan the architect will be often surprised to find the number of opportunities which present themselves for displaying those artistic qualities which he has been cherishing. I do not mean that lavish ornamentation which I might almost stigmatise as sculptural disfigurement, and which is of no higher order in architectural attainments than the profuse staining in the steel of the Damascus blade; but I do mean those graces of position, outline, height, and those ineffable breaks so dear to the mere *chiaro-scuro* architect, equally dear to those he even-loving and nicely-balanced cloud-capped towers, so indispensable for effect.

Every beauty conspicuous and requisite in an elevation can be produced as well after as before a carefully-studied plan, with the additional satisfaction of having a building *suited* *interiorly* for its purpose, without which, it is superfluous to add, it cannot be *suited* at all.

There have been some very good remarks made as to what I may term *speaking* buildings. I mean those that shall declare, on mere external inspection, the purpose to which they are devoted. This is entering into a rather useless and too refined theory or attempt.

It is very easy, no doubt, to erect what may be termed selfish-looking buildings—buildings that seem to say to the spectator—"Do not look at me; I have not laid myself out to be looked at, and have no pretensions to beauty;" the designer of them, of course, solacing himself with the reflection of their intrinsic internal value. Poor idea! As though it is not as cheap to be beautiful (I mean architecturally) as ugly!

What necessity is there for making our workhouses and warehouses appear mere *labour prisons*? We can, of course, with great propriety, make our prisons gloomy-looking, sombre, and massive, well expressing their use; and easily, in connection with the strength and solidity required in them. Our theatres may overflow exteriorly with sculptured representations, or even paintings, treating of the party and levity within. Our palaces may denote regal magnificence and that grandeur inseparable from large buildings, which is very appropriate. But what is to distinguish these latter from the palatial club-house, the ducal mansion, or the busy gigantic hotel? I forget. The red-coated sentinel and the awe-inspiring solitary lion, and solitary unicorn, holding undivided, but oh! how dignified away, over their respective 24-inch by 24-inch pillars! But is this architecture?

After having so far superintended our student as to make him master of all the arts of design, we have yet an important duty to perform by him, and cause him to acquire yet other information, though by some considered not necessary, even to the accomplished architect. It is, nevertheless, a very important branch of his all-embracing profession, and, in some cases, knit up with his very existence. I allude more particularly to *surveying*, which includes the measuring up, pricing, and estimating of buildings. It is very rarely, perhaps too rarely, found that both the architectural portion (I mean that which relates to design) of the profession, and the estimating and valuing portion, are successfully practised by the same individual; but its principles, at least, should be well known to the architect. It is first of all impossible to successfully carry it on without an intimate acquaintance with all the practical details of building: it requires the knowledge of all trade customs as regards pricing and valuing. The competent practice of it involves almost an apprenticeship to the building trade. I need hardly remark that a man may be a very good surveyor, but a very sorry architect, in an art point of view.

I have not alluded to the practice of land-survey-

\* From a paper by Mr. Edward Mallandaine, on "Architecture, and in connexion with Competition," read at meeting of Architectural Association, as already mentioned.



ing, a knowledge of which, at least to a limited extent, will prove useful to the architect; but is generally followed by itself, and is incorporated, perhaps too generally, with the practice of the so-called engineer.

I think that I may here supply an amplification of my title and definition of *architecture*, and again name it as divided into *civil architecture*, embracing all domestic buildings, theatres, baths, hospitals, palaces, club-houses, &c.; *ecclesiastical architecture*, specially devoted to cathedrals, churches, and chapels, parsonage-houses, &c.; *marine architecture*, including all docks, harbours of refuge, light-houses, bridges, quays, &c.; *military architecture*, or fortification, including all fortresses, towers, ramparts, and the effects of artillery on them, &c.; and, finally, *naval architecture*, or the art of ship-building, including the best methods of propelling, &c.

Is not a railway or a sewer a work of the easiest accomplishment to an educated surveyor? Is there anything so insuperable in the construction of tunnels, arches, and the forming of embankments? Is there ever any skill shown in the present construction of these necessary appendages to railway progression, that architects should, from incompetence, be shut out from them, or from the superintendence of our bridges?

Is there any science in our numerous suspension bridges, including even Niagara and the Menai, designed and superintended by men deep in Algebra, but apparently absolutely ignorant of gravitation?

To reproduce the sensible ideas of the late Mr. Elmes (father to the architect of St. George's Hall), is not an architect as well adapted by his searching, studious, and intelligent character to grapple with even quite new opportunities, as a man in most cases raised from the ranks (to use a military phrase), from the recent handling of the spade and the wheelbarrow?

The erecting of fortifications (I do not quite mean impromptu defences in an enemy's country, though this might be embraced,—why should not armies have their architect as well as their chaplain or their surgeon?)—the erecting of fortifications by the so-termed Royal Engineer is at best but a usurpation by him of the province of the architect, as the ordnance surveys by our worthy sappers and miners are a trenching on the employment of our civil land-surveyors.

Were I to enter more in detail into the requirements of the architect, I should class his studies for theoretical attainments under the heads of *geometry*, a portion of *algebra*, *conic-sections*, plane and descriptive, *line-drawing*, *dynamics*, *stone-cutting*, *carpentry*. Proceeding, we should then have the study of *perspective* and *colouring*, with the laws of *shadows*, or *sciography*, all these of course, from works on the special subjects.

The importance of a well-stocked library cannot be too much insisted on. In fact, it is the life and source of all architectural knowledge; and for a list of books, I cannot do better than refer you to one furnished by the late Alfred Bartholomew, in his sterling work on "Architecture and Specifications." Without reading, we can know comparatively nothing; all previous experience and knowledge are to us absolutely lost. What time and labour are required for him to behold with his own eyes but even a small portion of architectural building practice! And yet, as though either blind to its advantages, or too jealously susceptible as to the use to which it may be turned, with what sedulous care are the *greatest* facilities in this respect kept out of the reach of the modestly aspiring English student! With what slow solemnity are the jealous doors opened to the intrusion—of whom?—The younger members of their own profession!—by an unamiable assemblage.

We must give their due prominence to the lectures, to be obtained at the London colleges, and—oh, how sparing the number!—at the Royal Academy.

Now, if I have not already wearied you, I will make what will, no doubt, appear, to orthodox ears, a very reasonable assertion. I think if a complete revolution were the consequence of it, the effects would be most beneficial. I wish to assert, that all that I have pointed out may be successfully studied and acquired by a learner in the profession with far more advantage to himself in his own home, than in the office of the most eminent practitioner, great as might be what he could there pick up. With a great pecuniary saving to himself, and the ultimate advantage also of self-reliance, and without those impediments (they are nothing else) of tracing and copying drawings, writing letters, copying bills of quantities, and those numberless ins and outs of dreary occupied idleness, so familiar to the present generation of young architects.

The weary five or seven years are listlessly dragged through with no object by the pupil, and with a display of the most utter indifference, perhaps, by the master. He has promised "to teach and instruct, or cause to be taught and instructed," in what? In all, of course, in which the pupil is ignorant. He is

not asked to go, brick in hand, but neither is he scrupulously to refrain from putting in the way of his pupil the least advantages or facilities; to dismiss him at the expiration of his articles, in an architectural point of view, a mere overgrown boy. The apparent utter want of honesty in all this is unaccountable, except on the supposition that professors are unwilling to train up skilled youths who some day might rival them in their practice.

With the result before our eyes, it seems to the interest of architecture, and certainly to that of the young student, that he do not enter an office until, by study, untrammelled by the monotony and stupid routine of an office, he have well qualified himself. The money saved in premium will go far towards paying skilled professors in the various branches for imparting their valuable information, and when able to present himself without blushing as an aspirant to architectural honours, a half-year respectively in the offices of two or three architects in tolerable practice, in order to acquire the business-like portion of his practice, will then enable him to become what he never will be, or but after subsequent years of wearying labour, under the present system of being taught by a practitioner.

And if such be his fate, he will find himself with a lucrative practice at a time when, as things are at present managed, he would be only an out-of-date architect's assistant.

In London, certainly, with its manifold advantages so clearly made up by our friend Mr. Capes, he could not fail to render himself accomplished. I need hardly say, that from all these advantages he is for the present kept, by the chain of pupillage. I therefore hail with peculiar satisfaction the resolution, as some slight mitigation of the evil, recently passed by this Association respecting the Saturday half-holiday. If he be able also to secure the advantages of foreign travel in art-hallowed regions, his education may be pronounced near its completion.

In all these matters much might be done by the Association and the Institute: at present, I fear, our efforts have too much the appearance of supplying the evil effects of the negligence or incompetence of our professors.

#### REPORT OF THE CITY OFFICER OF HEALTH.

The sixth annual report of the sanitary condition of the City of London, by Dr. Letheby, deserves the careful consideration of all who desire the welfare of the community. The facts stated in this report ought to have a great effect in rousing the energies of those who have charge of other communities. It appears that out of the City population of nearly 130,000 souls, there died in the course of the year 2,904 persons. This is at the rate of 22.3 per 1,000 of the inhabitants; or it is one death amongst every forty-five of the living. This is called 9 per cent. below the general average, and represents a saving in the year of 286 lives. We learn that it is only nine years since a proper health establishment was formed in the City, and that since that time the deaths have constantly decreased, and have been reduced from the annual number of 3,763 to 2,904, the number above stated. The difference is 859, or closely upon 1,000 lives; and it is well worthy of remark, that this great saving has been mainly effected in one district, viz. the central.

We glean the following remarks:—"There are some places where the mortality is still high: in fact, a cloud of death is always hanging where the vitality of the people is slowly sapped, and where disease makes easy conquest. It is not enough that these places are continually the haunts of such endemic maladies as phthisis, fever, and the other putrid class, but often they become the seats of stronger pestilence." Dr. Letheby remarks that it does not come within his province to discuss the means of education which will enable the poorer classes to properly appreciate and attend to sanitary arrangements, and continues:—"But I cannot help saying that there seems to me to be an easy way of doing it. Raise up but a few houses that are well adapted for the necessities of the poor, and you will soon find that they are strong incentives to the forming of better habits, and to the seeking for better homes. The spirit of improvement which has led to the destruction of the poor man's haunts has had but little regard for the poor man's wants; and, after all, the majesty of a great city may be but the glittering diadem upon the front of Death."

The average mortality of the city is 22.3 in the 1,000; there are, however, some parts where the death-rate amounts to 27 in the 1,000. The following numbers show the great loss which takes place in young lives.—Of the 2,904 deaths for the year, 1,163 occurred amongst infants of less than 5 years

\* The average mortality of all England is at the rate of 22.3 in the 1,000.

of age; 193 between the ages of 5 and 20; 391 between 20 and 40; 522 between 40 and 60; 549 between 60 and 80; and only 86 after the fifth epoch of life. Of a thousand persons, therefore, who died last year in the City, 400 did not reach their fifth year, 466 died before reaching their twentieth year, 601 before the third epoch, 781 before the fourth, 970 before the fifth, and only thirty were left to struggle to the sixth epoch. The doctor remarks:—

"As in the vision of Mirza, therefore, we may see the bridge of human life, with its 100 arches that span the city. We can see multitudes of people striving to pass over it; and as we look more attentively, we may see the passengers dropping through the traps and pitfalls of the bridge into the great tide that flows beneath. But faster than in the dream of Mirza is the falling through of the crowd that struggles to pass over, for thicker and closer are the hidden traps and pitfalls that beset the way. Of the thousands who emerge from the dark cloud that hangs about the bridge's entrance, only one or two will reach the hundredth arch; more than a third will have dropped through before they have traversed the twentieth part of the way; more than half before they have got to the crown of the thirtieth arch; and by the time the remnant of the crowd have reached the middle of the bridge, there will be but three-tenths of all the number tottering on."

The difference in the proportion of infant death in various unions is worth notice.

The number and time of the deaths of those engaged in different pursuits is an important consideration. Of all the males at twenty years of age and upwards, the deaths per 1,000 were 22.5; but "the different classes of society have contributed very unequally to the aggregate,—for butchers, poulterers, and fishmongers, shopkeepers, and merchants, have died at the rate of only 15 or 16 in the 1,000; while tailors, weavers, shoemakers, printers, and compositors, have succumbed at the rate of from 20 to 23 in the 1,000. The death rate of blacksmiths and gessiters, painters and glaziers, dyers, bargemen and watermen, is 28 to 30 in the 1,000; cabmen, draymen, ostlers, and stablekeepers, at the rate of 31 in the 1,000, clerks and needlewomen, at from 34 to 35 in the 1,000; and the London working classes of carpenters, masons, and labourers, at from 43 to 45 in the 1,000. We notice that while the merchant, shopkeeper, and domestic servant, will live, taking the average, till nearly 57 years of age, the printer and compositor lives but to 45. It is true that the late hours and confinement partly cause this large destruction of the lives of a valuable class of workers; but as we have before hinted, the bad ventilation and other ill causes which are allowed to exist in many printing-offices, are chief means of producing this mortality which is so much above the average.

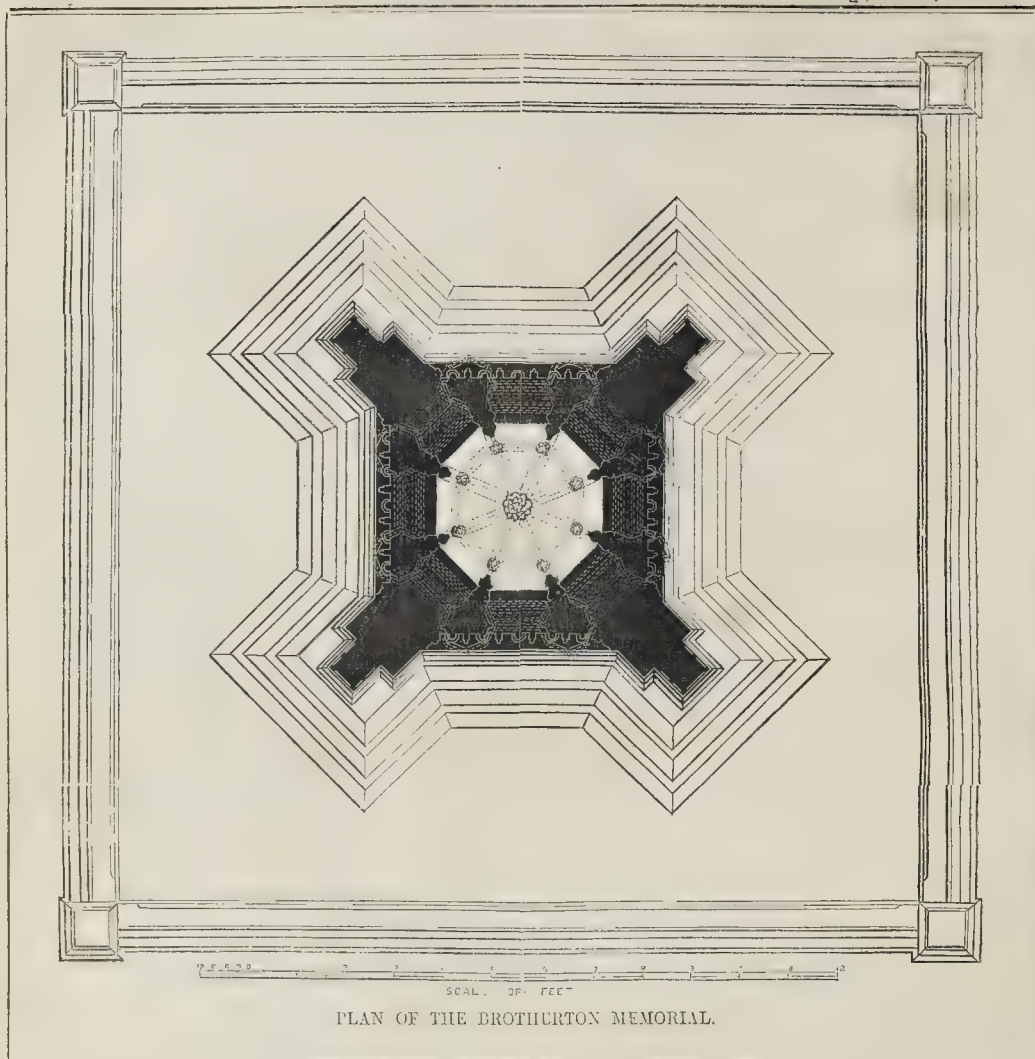
The average life of women is 55, but the poor needlewoman drops into her grave at the average age of 40.

After some remarks on the various diseases which have been, more or less, fatal, the reporter proceeds to enumerate the sanitary improvements which have been effected in the year: 5,294 houses have been examined, and 2,131 orders have been issued for various sanitary improvements. The inspectors have furnished detailed accounts of the state of 4,718 rooms, each of which has been carefully measured, and circumstantially described in respect to its cleanliness, state of repair, rental, and the number and condition of its inhabitants. These rooms were tenanted by 3,785, and these figures show what a large proportion of these poor people can only afford the rent of a single room: in these rooms there were 13,277 persons.

In 125 of these rooms there were found 624 persons. Several cases of overcrowding are given, but Dr. Letheby remarks that, in connection with these, he hopes soon to have them all registered as common lodging-houses; and that when this is accomplished, and the inspector of lodging-houses appointed, it will be the means, through the statutory powers of the Act of 1851, of putting a check on the unwholesome practice of such places.

SEWERAGE OF IPSWICH.—The town council of Ipswich have agreed to a plan of sewerage for the town submitted by Mr. Peter Bruff to the sewerage committee, and recommended by them for adoption by the council. Mr. Bruff proposes the formation of a main intercepting sewer equal to 2½ miles in length, and other works. The estimated net cost of executing the whole, including outfall works for storage of storm-waters, lateral sewers and street drains, but exclusive of compensation to owners and occupiers of private property, is 25,791/10s. of which sum 21,470/0s. odds is for Ipswich town, and 4,313/0s. for 8 other suburbs. Compensation, &c. inclusive, the probable expenditure in all is estimated at 30,000/0s.





#### THE PROPOSED BROTHERTON MEMORIAL, SALFORD.

OUR readers have been informed of the various steps which preceded the selection of the design for a memorial to the late Mr. Brotherton.

Mr. Brotherton represented Salford in parliament twenty-four years, and during the whole of that time all his election expenses were defrayed by his friends and constituents. Two full-length portraits of Mr. Brotherton were obtained in his life-time—one by Bradley, of Manchester, and the other by Westcott, of Liverpool, and presented to the corporation of Salford, and deposited respectively in the Town-hall and the Salford Royal Free Museum and Library in Peel-park.

The subscriptions received since his death, in January last, for a memorial to his memory, already exceed 2,500*l.* Of this sum 1,000 guineas have been appropriated to a statue in bronze, by Mr. Noble, of London, to be erected in Peel-park, and 500 guineas have been set apart for a monument over his grave in the Salford new cemetery. The remaining 1,000*l.* or upwards, is intended to be invested, and the interest annually appropriated, for the purchase of books, to be presented to the Salford Free Library, and other kindred institutions, in order, say the committee, that his memory may be perpetuated, and his excellent example constantly brought to our remembrance, and that of our children and descendants, by testimony as decided and enduring as the love, esteem, and regard of a grateful constituency, and of devoted and attached friends, can devise.

Annexed we give a view of the proposed memorial and a plan. Over the arch covering the present tomb,

which is cut out of the rock, and covered by an equilateral brick arch, it is intended to throw another, in four half-brick ribs, abutting on skew backs, cut out of the solid rock, with the spandrels filled up to the ground line with brickwork, the whole of which, with the arch itself, will be set and fully flushed in with cement, to form a level platform, for the monument above. The vault being much longer than the base of the monument, it is proposed to leave an entrance at one end, easily communicated with by the removal of the stone slab with which it is intended to cover it. The whole of the monument was to have been erected in Halifax stone, but it has been suggested to adopt the magnesian limestone, from the Mansfield Woodhouse quarry, near Mansfield, of a similar kind to that used for the Martyrs' memorial at Oxford. The matter is now under consideration.

The design consists of an octagonal base, with angle buttresses, on a stepped and weathered foundation. Between each buttress is an arcade, consisting of five niches and figures. On the first stage of the monument is introduced a draped urn, under an open groined canopy, supported by pillars, and ecclesiastical figures. The base or foundation for the pedestals on which they stand is to be formed out of one stone, as also is the arched and groined roof over the figures, by the adoption of which arrangement the requirement of metal cramps is to be avoided, and the tie or binding of the whole made complete.

The spire above is hollow, with a solid top stone, which will reach about one-third of the distance between the finial of the vane and the top of the binding stone over the figures last named. The vane

is of gilded and incised metal, and the spindle or rod is brought down through the spire to the under side of the groining of the roof, and there secured by a nut and screw, which will be so arranged as to be hidden by the foliage of the centre boss, at the intersections of the moulded ribs of the roof. The whole of the stones in the monument are to be dovetail keyed, and dowelled together with slate.

The setting of the whole work (except where before mentioned) is proposed to be in ground blue lias lime and sand, composed of pounded stone, as used for the monument.

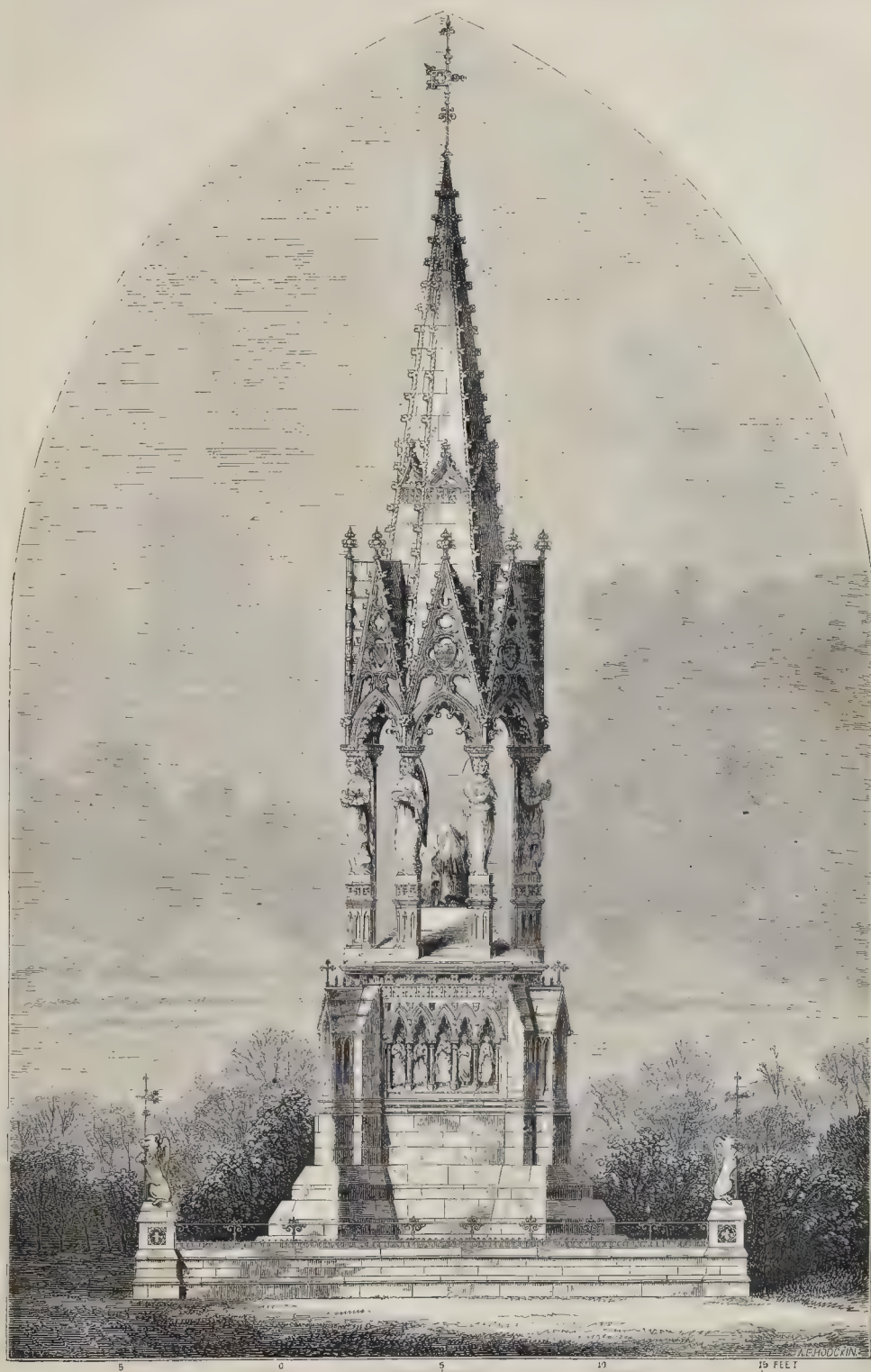
The mason's work is to be tooled: not the usual striped work bearing that name, but what is designated down in that part of the country as boasted work. The illuminated shields around the base of the spire are intended to contain the arms of Manchester, Salford, and the adjacent important towns, immediately connected with them.

The lower shields on the base over the niches are to be illuminated, as to be determined by the committee, and the space under the niches, and between them, and the top of the weathered base, to contain the inscriptions, the divisions for which on the four sides will be as under:—

- 1st. His character, as a master and merchant.
- 2nd. His character as a relative and friend.
- 3rd. His character as a veteran, for the principles he advocated in parliament during his long representation of the borough of Salford.
- 4th. The tribute offered to his memory by those whose munificence has caused the erection of the monument.

The whole of the stones in the base of the monu-





THE BROTHERTON MEMORIAL, SALFORD.—MESSRS. HOLMES AND WALKER, ARCHITECTS.







ment are intended to be the entire thickness of the walls. The work has been undertaken by Mr. Thomas Richard Williams, of Lombard-street, Manchester, at the outlay named in the printed instructions, viz. five hundred guineas.

It is expected that the monument will be completed by the month of August, next year.

The architects are Messrs. Holmes and Walker, of Manchester, who obtained the first prize, and have been commissioned to carry out the works.

#### CHURCH-BUILDING NEWS.

**Oxford.**—Amongst the long variation improvements enumerated by a correspondent of the local *Herald*, are the following:—The Chapel of Exeter College, which will be the largest building in Oxford, has reached the springings of the windows. The opening of Balliol Chapel we have already noticed. At Magdalen Chapel Messrs. Hardman, of Birmingham, have put up the first window of the series with which it is proposed to replace the grim dark old saints which have kept the light out so long. The colours are rich, and the drawings would be good if the figures were not all so stumpy. The paintings in the chancel of Holywell Church are steadily proceeding, and are likely to become a great object of attraction. The ruined pinnacles of St. Mary's, to say nothing of green and shattered casements, and ruined walls and pavements, still continue to disgrace the University and to spoil the High-street. The parish, it is added, has consented to contribute one-half of the estimated cost of its restoration.

**Cuddington.**—The village church of Cuddington having fallen into a state of decay, has been restored by Mr. Street, from voluntary contributions, assisted by the representatives of the late Mr. Baker Morrell. The church, which is dedicated to St. Nicholas, is in the Decorated style, with some late additions, and has a chancel, nave, two aisles, and a fine old tower. The roofs are entirely new. The church is re-fitted throughout with open seats, the western gallery taken down, and the tower thrown into the church. A vestry has been added on the north side of the chancel. The pulpit is of stone. The whole of the church is laid with Minton's black, red, and buff tiles. The chancel is fitted up with oak seats for the choir, and two prayer-desks at the ends for the clergy, and its pavement is laid with Minton's encaustic tiles, enclosing slabs of white marble. A stained east window, designed by Mr. Street, was not ready at the re-opening by the Bishop of Oxford.

**Cambridge.**—The restoration of the church of St. Mary-the-Less has been decided upon, and a subscription was commenced some time ago. A beginning of the works in contemplation (the new roof) will be made in the spring or summer of next year, and care is being taken, according to the *Chronicle*, that the work shall be executed in a manner worthy of the original beauty of the building. In order to effect this, the master and fellows of St. Peter's College, and some other subscribers have doubled their subscriptions, and a little more assistance from the public will secure the accomplishment of the work. The sum of 1,300*l.* is required in order to execute the roof in oak.

**Deddington.**—A vestry was lately held at the Town-hall, Deddington, for the purpose of reconsidering the report of the diocesan architect as to the present dangerous state of the parish church, and of devising means for restoring the same, and also to decide upon the necessity of removing the gallery, now so injuriously abutting against the south aisle, and the best means of providing necessary accommodation for the parishioners. It was unanimously resolved:—"That heavy and very general repairs appearing to be absolutely necessary to our parish church, as well as the removal of the gallery in the south aisle thereof, the most efficient plan to be adopted would be to endeavour to effect a general restoration of the church, by which means, upon a uniform and simple mode of arrangement, many additional sittings would be gained by the removal of the gallery, and that the same be endeavoured to be carried out by voluntary contributions, without resorting to a compulsory rate." A committee to carry out the resolution was appointed.

**Silstone.**—The repairs and restorations of the old church of Silstone are progressing, and the workmen, fifty-five in number, have just had a dinner given them by Mrs. Clark, in honour of the rearing of the chancel, which is new. The old part of the church is now covered in, the whole of the roof being a new except the principals. The windows are also to be new, those in the chancel, four in number, to be of stained glass. The doors, pulpit, reading-desks, communion-table and rail, &c. are to be new. It has been found necessary to enter into an additional contract, the cost of which will be fully more than the original.

**Weston.**—The restoration of the church here is

completed. The alterations comprehend, amongst others of importance, the opening of the chancel and tower arches, so that an unobstructed view is now obtained from the east to the west end. The gallery has been cleared away, and the plan has involved the destruction of the old high pews: in their stead, the church has been filled up with seats of one height, and of the same design as the old seats left at the west end. This has given a considerable increase in the number of the sittings. Amongst the other alterations may be noticed a new pulpit and reading-desk, a new ringing-floor, over the tower-arch, with access by a new circular staircase in the north-east angle of the tower. A new vestry has also been made on the north side of the chancel, and the chancel has been restored. Flues have been constructed under the paving by means of which the whole of the building can now be heated. The plans had been previously submitted to, and approved by the Beds. Archaeological Society, who made a grant towards the expense of restoration.

**Reading.**—A necessity having arisen for increased accommodation in the Baptist Chapel, King's-road, application was made to a limited number of architects to furnish designs for enlarging and improving the chapel, vestries, and school-rooms; and they have unanimously selected one by Messrs. Poulton and Woodman, of this town. The plan selected proposes to extend the chapel in front, building a facade to the King's-road, with lobby entrances to the body of the chapel and galleries, which are so arranged as to provide separate means of egress from the various parts of the building. It is proposed to alter the ceiling of the present edifice, and to construct a dome in the centre, the upper half being of glass. The lighting will be at night by a gaselier, suspended from the centre of the dome. The ventilation will be through the dome. The pews are to be re-arranged on a plan which will, with the enlargement, add about two-thirds to the present accommodation. The chapel will be heated by warm-air flues under the aisles.

**Basingstoke.**—The foundation stones of the two mortuary chapels in the cemetery have been laid. The chapels are to be in the Gothic style of the Decorated period. Each chapel will have a spire. Bath stone facings with flint panels are the materials of which the walls will be composed. Vestries will be attached to each building. The entrance is in the old half-timber style, standing on a platform excavated out of the embankment. A timber bridge will unite the levels of the cemetery across the approach-road. The entrance-gates are to be immediately under this bridge, and will be of ornamental cast ironwork. The walks and roads are to be laid out in various serpentine lines, and one of the walks will form the only separating mark between the consecrated and unconsecrated portions. The preservation of the well-known ruins of the "Holy Ghost" Chapel is contemplated. The architects are Messrs. Poulton and Woodman.

**Winchester.**—The parish church of St. Bartholomew Hyde, under the superintendence of Mr. Colson, architect, has been repewed on a new floor. Mr. John Brown, builder, was the contractor.

**Cheadle.**—A chapel, in the Gothic style of architecture, from plans by Mr. J. Wilson, of Bath, capable of seating about 100 persons, has been opened at Alton.

**Sedgley.**—The new Congregational Chapel, at Sedgley, has been opened for divine service. The site fronts the road from Sedgley to Deepfields, and the building will accommodate 400 adults and 150 children, with provision, when side galleries are added, for increasing the number of adults by 156. The builder's contract was 1,346*l.* and the cost, including other expenses, is 1,362*l.* 1*s.* 11*d.* The form of the chapel is rectangular, 66 feet 6 inches long by 37 feet broad. The entrances are on each side leading to side aisles, from which the seating (which is open framed), is approached at the further end: elevated two steps above the aisle floor is the table pew so arranged that it can be used as a platform at public meetings. Over the entrance lobby is an end gallery for children. The roof is open timbered, ceiled across the collar beam, and divided by moulded ribs into panels. The woodwork is stained and varnished throughout. The style of architecture adopted is that of the fourteenth century. The chapel is built with Gornal stone rubble work and Box ground stone dressings. The frontage, towards the street, consists of a tower 80 feet high, a decorated gable, and a side wing. In the centre gable is a Decorated window, and underneath, divided by a string course, are three grouped single-light windows for lighting the lobby. The interior is lighted by five double-light and traceried headed windows, filled in with sheet glass, and borders of Chancel's tinted cathedral glass. A minister's vestry is provided at the rear. The whole edifice will be warmed by hot water, and lighted by gas. The architects were Messrs. Bidlake and Lovatt, and

the builder was Mr. Burditt, all of Wolverhampton. Messrs. Stock and Son, of Birmingham, provided the gaseliers and ornamental ironwork.

**Bolton.**—The parish church steeple having been reported by Mr. Holt, architect, to be in an unsafe state, a meeting was convened by the vicar, to consider the subject. It appears that, many years ago, the steeple was cased by a stone wall inside, and that wall, not having been properly bound to the old building, has given way, so that it has been found necessary to discontinue the ringing of the bells. The feeling manifested at the meeting, says the *Preston Guardian*, was decidedly in favour of renovating the structure in preference to building a new one; and it was unanimously decided to call in Mr. Bellhouse, of Manchester, to give his opinion of the state of the building, and the best means of restoring it. Mr. Bellhouse has since examined the steeple, in company with Mr. Holt, and expressed his belief that the tower was safe, although the wall inside, which was intended to strengthen it, had given way.

**Outwood (Wakefeld).**—The foundation stone of a new church has been laid at Outwood, near Wakefeld, by the Bishop of Ripon. The edifice is about to be built by subscription from the inhabitants: it is to be called the Church of St. Mary Magdalene, and will be built, after plans furnished by Mr. W. H. Dykes, of York, with nave, north aisle, chancel, organ chapel, and vestry, and will seat 400 persons. A south aisle, with tower and spire, will be added, when more room is required and sufficient funds are raised. The church is to serve for a new district, to be taken from the present parish of Stanley.

**Ile of Man.**—The foundation stone of a new Roman Catholic chapel has been laid in Douglas, Isle of Man. The site of the new edifice, which is to be called "St. Mary's of the Isle," is on Prospect-bill, in the most improving part of the town.

**Nairn.**—St. Columba's church, Nairn, was consecrated on the 22nd ult. by the Bishop of Murray and Ross. The building, which is in the Early English style, consists of a chancel, 24 feet long and 18 feet broad, and a nave of three bays, 36 feet long and 24 feet broad. The west-end wall is only a temporary erection, as it is intended hereafter to add another bay and a tower. The chancel is lighted at the east end by a triple lancet of the same character as the rest of the building. The roof is of timber, open to the top, and is of red Memel pine, which is to be varnished. The part over the chancel is laid out in panels, of superior work to the rest. The font, which is the gift of school children, is a hexagon, of Nairn stone, and is panelled for future carving.

#### PROVINCIAL NEWS.

**Aston.**—The district of Little Bromwich, in the parish of Aston, is about to be provided with school-rooms, which will be erected in connection with St. Margaret's, Ward-end, the church of the district. The foundation-stone of the schools was to be laid on Wednesday last, by Mr. C. B. Alderley, M.P. The site has been given by Mr. C. Reeves, of Ward-end, and it is proposed to erect, at a cost of 450*l.*, a school which will accommodate seventy children. Plans for the building have been prepared by Mr. C. Edge. There is still a deficiency of 150*l.*

**Birkenhead.**—The foundation-stone of new schools in connection with the Wesleyan Chapel, Price's-street, Birkenhead, has been laid at the new site in Beckwith-street. The schools have already made some progress, and, when completed, will accommodate 300 children. Mr. Joseph Brattan is the architect, and Mr. J. Hogarth the contractor.

**North Petherton.**—Schools, from plans prepared by Mr. C. Knowles, architect, have been erected at North Moor Green, at a cost, including site, &c. of 430*l.* raised by subscription.

**Preston.**—The following list of tenders sent in for the construction of the Spade Mill Reservoir is from the *Guardian* of last week:—

T. Chadwick (to be accepted)	£7,695	0	0
T. Saville and T. White	7,715	18	6
J. Isherwood	7,910	9	0
H. Banks	7,955	1	0
H. Caunce	8,155	12	7
E. Knight	8,164	19	7
W. Lawton	8,344	4	0
Cooper and Tullis	8,425	0	0
J. Armstead	8,674	14	4
W. Pickering	10,652	13	2

#### Ironwork.

J. Clayton (to be accepted)	480	12	1
Watson and Allsup	515	19	10

**Stockton.**—Since the Local Board of Health came into operation in this borough, thirty-six new streets have been laid out, sanctioned by the Board. The town has been drained at a cost of 6,000*l.* Drain-traps have been placed over the gullies instead of gratings. Water has been distributed over the town into almost every house, or rendered easy of access to



every one. New gasworks have been erected. New warehouses and quays have been planned on the river side. Blast furnaces have been built, and two new stations, mills, and workshops have sprung up. Two yards have been established for building iron ships, and are employing several hundred hands. The Tees Conservancy are improving the river approach to the town, and have spent many thousand pounds in the work.

*Isle of Man.*—The Isle of Man fishermen have resolved to petition Government for the formation of a low-water harbour at Port Erin, near the Calf of Man, for the protection of the herring fleet and the vessels which now frequent it as a bay of shelter.

#### NEWS FROM SCOTLAND.

*Edinburgh.*—The Grand Lodge of Freemasons intend, with the help of the other Scottish lodges, to expend 10,000*l.* in the purchase, adaptation, and adornment of a large teneument in George-street, for their use. Plans of an ornamented front, facing the street, and of a hall, to be erected on the area behind, are to be prepared, and the whole works completed previously to St. Andrew's-day, 1858.

*Glasgow.*—The streets, lanes, and sewerage of this city, says the local *Gazette*, have been, and continue to be, in a most disgraceful state, and getting worse and worse every year. The state of Mitchell-street, running into the principal thoroughfares, is instanced as being bad, but the crooked streets and lanes still worse. It is full time the Glasgow people were awakening to the fact that cholera is again threatening.

*Galafridi.*—The committee appointed to look for a site for a town-hall have instructed Mr. Hall to draw out a general plan of a public hall, with court-room and waiting-rooms, and police-cells below, such as will be suitable to the requirements of the town. The committee are negotiating as to a site in Bank-street.

*Forres.*—The last remnant of the Mautle-wall, as it was called, which once surrounded the College of the Cathedral Kirk of Murray, says the *Forres Gazette*, has lately been repaired at the expense of the Commissioners of Woods and Forests. At the east there was a gateway in the wall, called the Pans' Port, the approach by which the bishop, when his residence was at Spynie, used to enter, after fording the Lossie within a few yards of the spot. The Port is a pointed arch, and had been furnished with a portcullis, which was drawn up in a groove still visible in the wall, when ingress and egress was required. The Port has been repaired. A strong buttress has been built at the south side, and the whole of the joints and openings between the stones of the fabric have been filled up with Roman cement. A cope of dressed freestone has been placed on the top of the wall, for its preservation.

*Binnam (Dunkeld).*—The projected new town of Binnam seems to have made a beginning. Some time ago the foundation-stone of an Episcopal Chapel was laid by Bishop Wordsworth, and the erection is being proceeded with. A parsonage and school in connection with it are in contemplation, and likely to be soon commenced. Large additions to an already extensive establishment of a Mr. Anderson have been fixed on. Four feuing lots have been taken. Sites for villas on the Torr Wood are being taken.

#### STAINED-GLASS WINDOWS.

In the new R. Catholic Church of the Immaculate Conception at Prescott, Lancashire, recently opened there, are several stained-glass windows, viz. a large four-light altar window, two in the transept, and three in the chancel.

The altar window is given in memory of the late Hon. Gilbert Stapleton. It has four lights, containing full-length figures, under rich canopies, of St. Mary and the Divine Infant, St. Joseph, St. Ignatius Loyola, and St. Francis Xavier;—in the tracery the arms of the Stapletons, and in the upper opening the coronation of the Virgin.

The three side chancel windows are of two lights each, with subject medallions, viz. the Annunciation, the Nativity of our Saviour, Christ bearing the Cross, the Crucifixion, the Ascension of Our Saviour, and the Assumption of the Virgin.

The south transept window, given in memory of Mr. B. Bretherton, of Rainhill, is composed of four full-length figures under canopies, viz. St. Bartholomew, St. Jane of Valois, St. Patrick, and St. Bridget. The north transept window contains four figures also, viz. St. George, St. Gregory the Great, St. Augustine of Canterbury, and St. Thomas of Canterbury. The nave windows, fifteen in number, are filled with quarries and coloured borders.

These windows were executed at the St. Helen's Crown Glass Company's Works, who have recently put up also a large five-light window at St. Stephen's Church, Brownlow-hill, Liverpool, the centre light of

which is filled with a full-length figure of the protomartyr under a rich canopy;—the four side-lights have ornamental glass in geometrical patterns. The three large tracery openings are filled in the following manner, viz. the centre one with the martyrdom of the saint, the two others with groups of angels bearing palm-branches.

*Chichester.*—A new painted window has just been erected in the north aisle of the nave of the cathedral. The mullions and tracery of the window (which is of three lights), with cusped circles above, of Early English character, have been restored in Caen stone by Mr. T. Kitson, of Chichester. The glass was executed by Mr. J. R. Clayton, London. The subjects represented have all reference to the healing of the sick, as the Pool of Bethesda, the Healing of the Leper, Peter and John at the Beautiful Gate of the Temple, and others of similar character. Half length figures of the apostles, Peter, John, Paul, and Barnabas, occupy the upper and lower portions of the side lights.

*Walsall.*—A memorial window has been placed in Rushall Church, to the memory of the late Mr. George Strongtharm. The window has been painted by Messrs. Ward and Co. of London, and has been put up in the chancel.

#### FOREIGN INTELLIGENCE.

*Paris.*—The emperor has commissioned Mons. Hittorff, architect, to erect, opposite the church of St. Germain l'Auxerrois, an analogous building in the Gothic style, to serve as a pendant to that interesting structure. It is destined for the Mairie of the Fourth Arrondissement, and will be surmounted by a clock tower, which will be used for the services of the church of St. Germain. The improvements projected for the Eleventh and Twelfth Arrondissements, proceed at a great rate. The *alignement* of the Rue des Mathurins St. Jacques, modified three times, is now definitively fixed, and a part is already covered by buildings. Its prolongation will be on the scale of 12 metres in its breadth, and end in the Rue des Carmes, in a direction parallel to the axis of the Marche. The new building of the Musée Cluny, which lies on the border of that street, is now completed, and will be a useful complement to the old museum, whose archaeological riches have not been hitherto well displayed. The Rue des Ecoles, which is to be 20 metres broad, hitherto a heap of rubbish, has been lined with fine buildings.

*Milan: Leonardo da Vinci.*—The monument to be erected in that city to the memory of this great painter, will occupy one of the choicest spots of the Lombard capital, viz. the Piazza San Fidele, on the spot where once stood the mansion of the Finance Minister of Italy, M. Prina. The Academy of Arts of Milan have voted 60,000 francs towards the expenses of the monument.

#### CATTLE-YARD COMPETITION OF THE ROYAL DUBLIN SOCIETY.

Sir,—In alluding to this affair, which will stand pre-eminent on the list of extraordinary competitions, and illustrate to perfection the liability of architectural practitioners to be made the bugbears of committees, you say "there is no remedy unless a special contract on the part of the committee can be proved." Pardon me for troubling you further after your verdict, but I feel that the facts have not been fully or clearly put before you, or you would not have arrived at such a conclusion. In ordinary business transactions between man and man, to prove a contract satisfactorily in the eyes of the law, the previous precaution of a stamp affixed is indispensable; but in a matter where a public body, by advertisement, invites the members of a profession to embark their talents, time, and labour, in the hope of the best production gaining a promised reward, and that then, by further advertisement, such body acknowledges that a competitor did reach the maximum point, but nevertheless declines to pay the premium, the case appears to me to assume a very different shape.

Every man's time is his money, and there is such a thing as obtaining money under false pretences; ergo, if a committee tamper willingly, and without the intention of remunerating with the former, they ought at least, in justice, to incur as serious a responsibility as if it were *bond fide* with the latter commodity. There can be no necessity for "a special contract" to be proved further than that of their own making, viz. the official advertisement offering the premium (as in this case was done in two separate instances), the receipt of the plans in competition, the acknowledgment that there was a "best" plan, and the declining to award the premium nevertheless. Day and date, documentary and verbal evidence, can be given for all this; and, may I ask, are the competing architects so pusillanimous as to submit, tacitly, to have their laborious drawings shelved as waste paper, while

the society coolly re-pockets the 25*l.* and says, "Take them out of this, we won't have them now?"

Apart from either local or personal considerations, this competition involves a principle (or rather a want of it) which, for the sake of the profession at large, should and must be shown up. The plans declared "best" in the first competition, and distinguished by the motto "*Never venture, never win*," were my sole design and draughtsmanship; but in the second competition I also sent in an elaborate set, which still remains in the society house, as I will not withdraw them until I bring this matter to a crisis. It is a significant fact, that the assistant secretary told me personally that the drawings sent by a certain gentleman (named at the time) in the second competition had been approved of, and the official announcement was only delayed until a builder's tender to execute them within the stipulated amount should have been received; but when I sought subsequently for information as to the ultimate decision, this gentleman's name merged into the title of "*Pro bono Publico*," and the worthy official declines to say who he is, or whether or not the premium was awarded, as, in his letter of September 21st, may be seen. Such doings can only be exposed by the aid of the press; and, for the profession generally, irrespective of personal compliment—which, of course, I shall feel likewise,—I respectfully solicit the insertion of this letter.

JOHN J. LYONS.

#### THE CAMBRIDGE MUSIC-HALL COMPETITION.

The authors of the design marked "Industria" complain that the notice in our pages (p. 591) gives the impression that there is but one entrance to the Music-hall in their design, whereas there are two, besides the approach mentioned; namely, one in Jesus-lane, and a second in Park-street. The writer of the notice is not able to refer as to Jesus-lane, but remembers that the entrance in Park-street is a small one simply for performers, and repeats the expression of his opinion that the approaches are inadequate. The authors of the design say they do not understand the remark that the audience coming out would have to "pass through the frustrum of a wedge." When we say that the doorway of the Music-hall is 8 ft. wide, the staircase 7 ft. wide, and the passage 5 ft. wide, others will understand the illustration if they do not. A letter from "a Friend of a Member of the Committee," now before us, complains in strong terms of personal canvassing on the part of "Industria." The statement made by the author of "London" (p. 619) may be correct as far as his intention goes; but an arch coloured like, with the walls, is unquestionably shown. He was quite right as to the preservation of the anonymous. A correspondent, competent to form an opinion, writes:—"I consider that most of the drawings are unfairly made. If a committee of architects were to inspect them critically and report upon them, I am sure they would show that none of the designs could be carried out. The site is of a peculiar shape, the approaches are not good, and the building would interfere with the ancient windows of adjacent property; and the adjoining property shuts upon several walls where fine windows are shown in the plans."

#### THE BRIGHTON PAVILION COMPETITION.

The committee have awarded the first premium of 100*l.* (a second 100*l.* to be given on a tender for the work being accepted, or it being abandoned) to "Unity is strength," and 50*l.* to "Cavendo Tutus," both on condition of a declaration that the work can be done for 10,000*l.* The authors of the design marked "Unity is strength," chosen as first in the competition are Mr. W. J. Green and Mr. I. Deville. We have received complaints from several competitors of the curt, not to say discourteous, note from the Town Clerk, Mr. Sharood, informing them, without one word of thanks, that their drawings may be had on application. "It is a good sample," says one, "of the courtesy shown to competitors by committees; and in this case, too, we had to pay two guineas each for copies of the plans of the existing buildings."

#### ISLINGTON VESTRY-HALL COMPETITION.

The report of the Special and Offices Committee on the twelve selected designs has been printed, and is now before us. It will be laid before the Vestry this (Friday) evening. Some, when they see prefixed to the designs such notices as these,—to No. 8, "The thickness of the walls, as shown in this plan, are insufficient;" to No. 52, "The general construction of this design is not good, and the walls are not of sufficient thickness;" and so on,—will, perhaps, wonder why the committee selected them. We would wager a new hat that we could name three out of the four designs which the committee will probably name to the vestry as the best, if required, and should



not wonder if they prove to be the work of parties intimately connected with the vestrymen.

The committee, in making their first selection, have avowedly taken the question of cost for granted. They must bear in mind that one of the express conditions under which honest architects worked was, that the building should not cost, including commission, &c. more than 5,500*l.*; and that if they select the design of a competitor who has disregarded this, they will commit a glaring act of injustice, not to be got rid of or palliated, as some other injustice may be by the adage, false though it be, that "there is no accounting for taste."

#### THE ARCHITECTURAL EXHIBITION.

The following passage from the report of the committee, quoted by us last week, may be usefully brought to the notice of our readers:—

"The committee have turned an earnest consideration towards the two great competitions of this summer, namely those for the Government Offices and the Memorial Church at Constantinople, and they have made some inquiry with a view to obtain from her Majesty's Government the use of some place of exhibition (such as unused rooms in the Houses of Parliament), in order to bring together again if possible the best of the drawings for the Government Offices; but the reply received is not such as to induce them to believe that this will be effected. The successful designs will besides remain in the hands of the Chief Commissioner of Public Works. As the space at disposal in Suffolk-street is really no more than sufficient for ordinary purposes, the committee request those who can do so, either to send perspective views only, or to prepare reduced drawings of their designs, or to send photographs of them; and they propose to relax as regards these two competitions that regulation which excludes all drawings exhibited before in London, if it should be found desirable."

#### THE METROPOLITAN SEWAGE QUESTION A HYDRAULIC PROBLEM.

A NEW scheme for the purification of the Thames and the disposal of the metropolitan sewage has been proposed by Mr. F. Lipscombe, a hydraulicist, who has patented the plan on which he proposes to proceed. He has printed a prospectus, from which we shall endeavour to explain, chiefly in his own words, the main principle and arrangements of the scheme.

After stating his objections to the "open ditches" of the referees, amongst which he enumerates the risk of stagnation and accumulation during frost, and even by the force of head winds, the patentee proceeds to show "the unsuitability of inclined channels for conveyance of sewage many miles" as being the cause of all the difficulty. The inclined plane principle, he remarks, is "unsuitable, on account of its being unable to elicit other than a feeble hydrostatic pressure, although starting from a splendid fall; whereas, a pipe, when made to start with an abrupt downward (or vertical) direction, with the view of obtaining the utmost amount of hydrostatic pressure, and then carried in a horizontal line to its outfall [either by one or a series of such pressure falls and levels] gives the highest possible velocity to water travelling through it;" and the "horizontal portion of the pipe merely serves as a guide to the torrent; and, however long, neither adds *or takes away*, to any appreciable extent, the propelling power created by the weight of water in the falls, which [falls] are cumulative in their hydrostatic pressure." The patentee, therefore, has been led experimentally to propose "to convey the sewage from London by means of several pipes laid down upon this principle. A tube, 15 inches in diameter," he continues, "40 miles long, with a 20-feet pressure (which would be about the average), laid down as recommended by the patentee, will give a velocity to the sewage of about 25 miles per hour, discharging 1,012,429 gallons per hour; about one-seventh of the whole quantity of London sewage, taking it at 7,000,000 gallons per hour. The cost of such an iron tube would be 55,960*l.*: the expense of digging out the ground and laying down the tube would be extra: altogether, probably, it would reach 100,000*l.*"

He proposes several exit pipes on the coast, so as to spread the sewage, and dilute it at once in the ocean, at or beneath low water level.

In the following abstract the whole scheme is indicated:—

"1st. It is proposed that the sewage should be discharged into sea-water, at several points, on any part of the Essex or Kentish shore.

"2nd. It is proposed to divide London into several districts, as may be found convenient, with the object of economically intercepting the sewage at the highest convenient elevations. No. 1 may be composed of the highest contiguous portions. No. 2 the next highest. No. 3 the next, and so on. Each district will drain to a convenient point within its own area. By this arrangement we obtain the highly important advantage of draining the greater

part of the sewage to several highly elevated points, preparatory to its being sent away; thereby getting good falls, enabling small pipes laid from these districts, to discharge, each of them, upwards of a million gallons per hour, at distant outfalls.

"3rd. It is proposed to lay an iron pipe from each of the before-mentioned London districts, to distant outfalls, down to about low water mark, and give each pipe a peculiar form, as already described, as will elicit the utmost amount of hydrostatic pressure due to the several falls, and by means of that pressure to discharge the sewage coming from the higher districts, at a very high velocity, and at a high average velocity even from low ones.

"Thus may the London sewage be conveyed to sea-water without the possibility of the pipes becoming choked, or giving off any offensive smells during its transit, at a cost several millions less than any other likely plan that has been proposed."

Without committing ourselves to any special opinion on Mr. Lipscombe's scheme, it may at least be freely admitted that hydrostatic pressure, as a hydraulic power, when properly applied, has already done wonderful things, and that, nevertheless, the principle may be said to be still in its infancy. We have often urged a consideration of this subject on the public attention, as in describing some of Armstrong's hydraulic cranes, for example, and in suggesting the employment of the ordinary water supply, especially under continuous pressure, in the multiplication of such hydraulic engines for use in warehouses. As regards Mr. Lipscombe's scheme, it is at all events well worthy of further consideration and discussion, on such points particularly as the strength of the pipes, the depth of their deposit in the ground, the influence of gravity and friction in retarding the sewage, &c.

#### SANITARY ARRANGEMENTS FOR BARRACKS AND HOSPITALS.

THE statements made by Mr. R. Rawlinson in a paper on this subject, read at the recent meeting for the promotion of social science in Birmingham, confirm strongly our views as to the want of a sanitary commission for the army in India. For the first time in the history of this country, sanitary works had due attention given to them during the late war by Government. We have over and over again pointed out the sad state of our home poor in their houses and in their persons: the condition of the soldier has also been alluded to. We have recently directed attention to the necessity for sanitary works and arrangements for barracks and armies in India, and we are glad now to be able to say that Government has taken up the question in earnest. An army medical report will be published about Christmas time; but, in the meantime, a committee of practical men has commenced its labours. Every barracks is to be inspected, and a remedy is at once to be applied.\* The following abstract of Mr. Rawlinson's paper will show it was needed:—

Before Sebastopol the British, out of 93,959 men, lost, from wounds and mechanical injuries, 1,761; killed in action, 2,658; deaths from disease and other causes, 16,298—the total of deaths being 20,717. Besides this there were 12,903 invalided, making a total loss to our effective force of 33,620 men. The French losses were in larger ratio; the Russians probably much greater. Sir John Pringle wrote about a century ago as follows:—"Among the chief causes of sickness and mortality in an army, the reader will little expect that I should rank (what are intended for its health and preservation) the hospitals themselves, and that on account of bad air and other inconveniences attending them." That might have been written in the present day. The public will little expect to be informed that soldiers in barracks, even in Great Britain, perish faster than criminals in gaols, and more than twice as fast as men in towns' police; and that in some colonial barracks there had been as much as 50 per cent. in a few months of deaths amongst men of the finest regiments. Mr. Rawlinson illustrated this by reference to the Army Committee Report of 1855. He further stated that Dr. Lyon Playfair had informed him that the air of the sleeping-rooms of the Wellington Barracks, London, contained about ten times the normal quantity of carbonic acid in healthy air. Fresh air, free and in abundance, should be provided for in barracks, in tents, and above all in hospitals. Medicine, meat, and clothing were of secondary importance. Malignant fevers, generated by foul air, destroyed far more than all the shot, shells, bullets, or steel used in action. There were few barracks in which means of ventilation were fully provided for and duly attended to. For the most part the sleeping-rooms were overcrowded, fetid, and ruinous to health. There was an enormous amount of fever amongst the men composing the armies in the Crimea, Russian as well as the Allies. During the first winter almost every case

taken into the British hospitals became one of fever, and so this state of things continued until the arrival of the Sanitary Commission in the spring of 1855. From this time fever abated in the British army until regiments and hospitals were much freer from fever than in England or on any home station. How was this, and what had been done? The great panacea was fresh air. The impervious felt covering to the huts caused much mischief: ridge ventilation removed the evil. Before the arrival of the Sanitary Commission, and at the time of its arrival, the British hospitals were as foul and deadly as the French. With the alteration in the sewers, the flushing and cleansing, the ventilation, and the lime washing, there began to be a change for the better. The British hospitals continued to improve; the French hospitals became worse to the end. From his observation, reading, and experience, Mr. Rawlinson made the following conclusions:—Every barracks in existence in which a British soldier was quartered should be inspected as soon as practicable by persons fully competent to the duty, with a view to sanitary improvements, and such improvements should be carried out as speedily as possible. Barracks had been placed on sites where remedy was not practicable. There were also buildings so inconvenient in form and arrangements, having sub-soil floors, walls, and ceilings, so saturated with filth that destruction by fire or immediate abandonment ought to be resorted to. Common sewers ought never to be allowed beneath or within any buildings which were inhabited. Barrack drains should only come up to the outer walls. The sub-soil beneath all barracks and hospitals should be dry, fresh, and sweet. There should be arrangements in all cases to allow of a free perflation between subsoil and basement floor. The construction should be such as to admit of cleansing, and to prevent any harbour of vermin. Barrack rooms should be lofty and spacious, having not less than 1,000 cubic feet of air space per man. There should be at least one open fire-place in each room. The windows should open from above, and at or near the ceiling. There should not be less than five square feet of window space per man. In all barrack rooms there should be permanent means for ventilation (independently of the doors and windows), which could neither be seen by the men nor be tampered with. There should be an area of exit and inlet for the fresh air of not less than 15 square inches to each man. The means of ventilation should be simple, and if each room had these means distinct and independent of all other rooms it would be better. There should be soil pans, &c. and lavatories for each room, or not less than one to every six men. These should be out of the barrack room, but close to it and under cover.

#### NEW DOCKS.

The Northumberland Dock at Hayholme-on-the-Tyne, has been formally opened.

The area of the tidal basin is two acres. It is 475 feet long and 175 feet wide, with a 70-foot entrance. The dock is 250 feet long and 52 feet wide. The area of the dock is fifty-five acres, and at present it is capable of accommodating 400 vessels. The average depth of water at high-water neap tides on the sills of the entrances is 18 feet; at spring tides, 24 feet. The channels through the entrances of the basin and dock were opened on the 22nd of June, 1857, and about that time the closing of the ends of the embankment was commenced with. At the time the docks were commenced, in 1853, upwards of 1,200,000 tons of coals per annum were shipped, and on its completion, the shipments amounted to 1,400,000 tons, showing an increase during the progress of the works of 200,000 tons of coals. Mr. John Plews, of London, is the engineer in chief of the dock; Mr. J. Plews, jun., the resident engineer. The contractor for the whole work is Mr. David Thornbury, of Walsingham. The contractors for the iron gate were Messrs. Hawks, Crawshaw, and Co. Gateshead. The cost of the dock is estimated at about 200,000*l.* The money for constructing the dock has been raised by the River Tyne Commissioners by bonds, and so soon as the capital and interest are repaid it will become a free dock.

This is the first dock on the Tyne; but on the opposite side of the river another dock, the Jarroo, is in progress, and will involve an outlay of about a quarter of a million sterling. This dock is a project of the North-Eastern Railway Company. The contractors are Messrs. Jackson, Gow, and Bean. The dock will have an acreage of forty acres—making, with that of the Northumberland Dock, a total amount of dock accommodation on the Tyne, of ninety-five acres.

An Act of Parliament has been obtained for a third dock at Coble Dene, extending from the basin of the Northumberland Dock to Smith's Quay, and about the size of Jarroo Dock, namely, forty acres. The Coble Dene Dock will have a depth of water of 26 feet. The basin will be one acre and three-quarters

\* A thick blue-book, of 300 pages, containing the report of the proceedings of the Sanitary Commission despatched by Lord Penzance to the seat of war in the East (1855-56), was issued last week. We gave our readers an abstract of its contents several weeks ago.



and will have a depth of water of 28 feet. There will be a 70-foot entrance. When the Coble Dene Dock is formed, there will be, on the north side of the river, dock accommodation to the extent of nearly two miles, extending from Howdon to Smith's Quay, and giving a total dock area of ninety-five acres. The three docks named, will place the Tyne third in this respect of all the rivers or ports in the kingdom.

At Maryport a wet dock has also just been opened. This is the only one of its kind as yet between the Mersey and the Clyde. The new dock has been formed at the west end of the old harbour of Maryport. Its length is 600 feet, and width 240 feet; area a little over three acres. The entrance is 50 feet in width, and the depth of water over the sill 21 feet at spring-tides, and about 10 feet at neaps. The stone used in the construction of the walls and entrance of the dock is red sandstone—chiefly obtained from quarries in the neighbourhood: the sill is formed of Lazonby stone, and the hollow quoins of granite from the Nith. The gates are built of greenheart timber—one of the three kinds of timber which are said alone to resist the ravages of the worm, so destructive to works of this kind. The lineal quays at the dock is 1,630 feet, and the additional quay space is 12,000 superficial yards—of which 2,100 superficial yards are available for the landage and storage of timber. The plans for the docks were furnished by Mr. Dees, and they have been carried out under the superintendence of Mr. Stanley, the resident engineer. The contractor for the dock-works is Mr. Nelson, of Carlisle. The gates were constructed on the spot by the trustees, under the direction of the engineers, and the machinery has been furnished by various firms. Among the firms who have contracted for different portions of the work, the *Carlisle Journal* mentions Messrs. Tulk and Ley, of the Lower Iron Works; Mr. T. Tickle, of Junction Foundry Maryport; Messrs. Cowan and Sheldon, of Woodbank Iron Works; Mr. Thomas Pearson, of Maryport; and Mr. Brown, of Maryport, the latter of whom constructed the coal hurries. The cost has exceeded 40,000*l*.

#### BOILER GRATES FOR HEATING GREEN-HOUSES WITH HOT WATER FROM AN OPEN FIRE IN A SITTING-ROOM.

I AM surprised that among the number of grates which compete for public patronage, none has been advertised for the above purpose.

When we consider how general the taste for gardening has become, and how frequently houses are now supplied with green-houses adjoining sitting-rooms, it is not a little surprising that no general attempt has been made to make parlour or kitchen fires available for warming conservatories. The boiler may be placed at the back, or under the fire, or both, it having been proved by the manner in which combustion is sustained in Aruot's Smoke-consuming Grate (as well as the *Builder's* smokeless fire), that open bars at the bottom of the grate are not necessary, and that a fire will readily burn although resting on a solid and unventilated base. Where grates are expressly manufactured to heat boilers for this purpose, there would be no difficulty in adjusting the situation of the boiler so as to obtain the requisite amount of heat from a moderate fire. This arrangement would be most convenient for the amateur gardener, because the simple act of lighting the fire in his sitting-room throughout the winter will preserve his plants in safety without further trouble. I venture to predict that a large demand would arise for boiler grates adapted to this purpose, if they could be supplied at a moderate cost. P.

#### THE USE OF CEMENT.

WITH reference to the decay of soft stones at the Army and Navy Club House, and other buildings, I venture to give you some remarks on cement of the present day, that is, if from respectable firms, and properly used. I should like strongly to impress upon architects and builders who wish to turn out jobs in the summer months, that the heat of the sun is so powerful that it draws all the water from the cement before it has time to set, it is then entirely perished; therefore, when the face is broken, it may be crumbled with the finger and thumb, and yet the best cement may have been used. What I would suggest should be, to have a tarpaulin that would keep off the heat as well as the rain.

There is one job of cement-work which I should wish to draw your attention to, that is, Sir W. B. Ffolkes's, of Hillington Hall, in Norfolk, some of which was done more than thirty years since, and stands like flint: that was done at that time by Mr. Robert Armstrong, master plasterer, with Messrs. Francis and Son's Roman cement, and there is none in the market at the present time better;

and Armstrong at that time, being a thoroughly practical man, sought the best mechanics in London. I need not point out to you, sir, how there are some very queer plasterers drawn into our trade by what we call hawk-boys, as it has already been done in your pages. Many architects do not like outside jobs begun at this time of the year, but it is the soundest time to do cement-work in; it is upon the account of the jobs in the fields failing by the acre, but there it is done with queer men, with queer materials, and what is worse, on thoroughly soddened brickwork, which is sure to fail with the slightest frost.

Sir, as I have only mentioned Roman cement in my letter, you may think I prefer that to Portland cement, but I do not when it is good; but there is some rubbish in the market. I would rather use lime and sand, properly beaten up, than that. J. W.

#### GLASGOW ARCHEOLOGICAL SOCIETY.

THE first meeting of the second session of this society was held on Monday, the 2nd instant, in the Bath-street Rooms. The chair was occupied by Mr. Michael Connal. Mr. Robt. Hart read a paper, entitled "Reminiscences of James Watt," which contained a great variety of interesting information regarding the early experiments of Watt, and the scenes of his early labours, besides other valuable unpublished memorabilia of the illustrious inventor, obtained from himself when the author enjoyed his friendship, more than forty years ago. A paper was read, "On the ancient Tolbooth of Glasgow," by Mr. Neil, in which that gentleman not only traced the history of the building, the steeple of which still stands, but also of the more ancient Tolbooth, which occupied the same site. He said that the architect of the building erected in 1626 was unknown, and he expressed his opinion that the corporation had obtained the design from the Continent. This, however, was controverted by architects present. The style of architecture was that which prevailed in Scotland in the seventeenth century, which exhibited, no doubt, many foreign characteristics, but was more nearly allied to the English Elizabethan style than to any other.

#### PREMIUMS GIVEN AND OFFERED BY THE INSTITUTION OF CIVIL ENGINEERS.

THE Council of the Institution of Civil Engineers have recently awarded the following premiums for papers read during the past session:—A Telford Medal to D. K. Clark, for his paper "On the Improvement of Railway Locomotive Stock;" to R. Hunt, for his paper "On the Application of Electro-Magnetism as a Motive Power;" to G. Rennie, for his paper "On the Employment of Rubble-Béton, or Concrete, in Works of Engineering and Architecture;" and to W. B. Adams, for his paper "On the Varieties of Permanent Way practically used on Railways;"—a Council Premium of Books, suitably bound and inscribed, to F. R. Window, for his paper "On Submarine Electric Telegraphs;" to G. B. Bruce, for his "Description of the Method of Building Bridges upon Brick Cylinders in India;" to A. S. Lukin and C. E. Conder, for their paper "On the Disturbances of Suspension-bridges, and the mode of counteracting them;" to W. Bell, for his paper "On the Laws of the Strength of Wrought and Cast Iron;" to F. R. Conder, for his paper "On the Laying of the Permanent Way of the Bordeaux and Bayonne Railway;" and to T. Dunn, for his paper "On Chain-cable and Timber-testing Machines."

Premiums are offered for papers, amongst others, on the following subjects:—

The history and practical results of timber and iron piling, for foundations, or other purposes, and for wharf and dock walls; with notices of mechanical modes of driving, and of other modes of inserting the piles.

Accounts of the failure of large structures, consisting of one or more arches, with the presumed or ascertained causes.

The construction and use of wrought-iron girders and joists, with arches, iron plates, concrete, or other incombustible substances, for buildings.

The construction of suspension-bridges with rigid platforms; their adaptation to railways, and the modes of anchoring the stay-chains.

On the construction of catch-water reservoirs in mountain districts, for the supply of towns, or for manufacturing purposes.

Accounts of existing waterworks; showing the methods of supply, the distribution throughout the streets of towns, and the general practical results.

The drainage and sewerage of large towns; exemplified by accounts of the systems at present pursued, with regard to the level and position of the outfall, the form, dimensions, and material of the sewers, the prevention of emanations from them, the arrangements

for connecting the house-drains with the public sewers, the disposal of the sewage, whether in a liquid form, as irrigation, or in a solid form after deodorization.

Mechanical methods of boring and of sinking large shafts, of introducing the tubing and impervious lining, and of traversing running sand, and other difficult strata.

Descriptions of the oven, and of the best processes used in Great Britain, and on the continent, in the manufacture of Coke for railway and other purposes; with the comparative values of the products.

Description of cast or wrought iron cranes, scaffolding, and machinery, employed in large works, in stone quarries, hoists or lifts on quays, in warehouses, &c. especially where either steam or water is used as a motive power.

Improved processes and machinery for sawing, working, and carving timber or stone.

On the improvements which may be effected in the buildings, machinery, and apparatus for producing sugar from the cane, in the plantations and sugar-works of the British colonies, and the comparison with beet-root, with regard to quantity, quality, and economy of manufacture.

Memoirs and accounts of the works and inventions of any of the following engineers:—Sir Hugh Middleton, Arthur Woolf, Jonathan Hornblower, Richard Trevithick, William Murdoch (of Soho), Alexander Nimmo, and John Rennie.

#### STRIKES, &c.

THE strike of cabinet-makers at Liverpool, which had continued for twenty-three weeks, is now at an end, the men having at length agreed to return to work on the masters' terms.—It seems likely that the dispute as to the Manchester joiners' strike will be referred to arbitration, the correspondence in the local newspapers having pointed strongly in this direction,—a far more sensible way of arranging matters than persisting in a strike which will make a gloomy winter only gloomier,—injure all, and benefit none. The shipwrights of the port of Bristol, we are sorry to hear, have been impelled to turn out on strike, in consequence of the masters having notified their intention to reduce wages from 5*s*. to 4*s*. 6*d*. a day. There is very little doing, and the choice of the men, it is feared, lies between the reduced rate and nothing at all.—

A meeting of the journeymen joiners in Greenock, in reference to the reduction of their wages, was held on Saturday week, when it was agreed to ask for a conference with the masters. At a meeting of the journeymen carpenters on the same day, it was resolved not to submit to the reduction, and this has been intimated to the employers. A number of carpenters have for some time been going about idle, and more, in consequence of this resolution, were to be paid off in a few days.

#### NOTES UPON IRON.

THE iron trade, in South Staffordshire in particular, displays an amount of health which is surprising to many persons. With one exception—and there operations have been resumed—no suspension has taken place, notwithstanding the strong sympathy which subsists between the iron trade and America. It augurs well for the soundness of some houses here who can present an unyielding front to a state of things which reduces a weekly receipt represented at about this time by thousands, to a comparative trifle. On Change at Wolverhampton, on Wednesday, it was stated with considerable confidence that one of the leading iron-trading houses in Liverpool had suspended payment on account of the postponement of remittances from America. If this should be so, the effects will be seriously felt by a number of small iron-masters. Happily the home orders keep up,—so much so as to furnish nearly full-time employment to most of the firms. Some are kept on by orders on account of the East-India Directorate. But others there are who are very poorly off for orders, and are unable to keep the whole of their machinery in gear. In all cases where the stipulation is made by customers, prices are taken which display very little adherence to Quarterly resolutions on such matters.

#### THE ACCIDENT TO "BIG BEN."

SIR,—The public are informed of the unfortunate death, by fracture, of "Big Ben" of Westminster, which event, it is said, took place on or about the time of the third striking of "Ben" by the square-headed hammer at the weekly ringing of Saturday, 24th ult. when it was discovered that his voice was no longer E natural, but altogether uncertain and defective. My object is to inform you that, although the parties engaged in ringing "Big Ben" might not have discovered the calamity until as stated, I am confident it occurred on the Saturday previously. I happened to be in St. James's-park on my way to



Westminster-bridge on the latter day, when the customary ringing at one o'clock on Saturdays commenced. The deep sonorous tone at once convinced me it was "Big Ben" my ears were, for the first time, being delighted with. On reaching the foot of the bridge, where there was little to intercept the sound, and the direction of the wind favourable, I heard it to much advantage. At this time it was perfect. As I descended the pier-stairs, to take a down passage in the river boat, a change in the ringing was made from slow to quicker time. I had no sooner got into the boat than it was apparent to me another change had taken place, which I attributed to a muffling of the bell, as I could not comprehend anything so sudden and unfortunate as that the bell had really become cracked, much as the sound betokened it. The ringing then ceased for the day.

WILLIAM DYER.

#### THE IMPROVEMENT OF TRAFALGAR SQUARE.

I VENTURE to send the following suggestions, as supplemental to the clever remarks of your correspondent "Epsilon," as to the centralisation of Trafalgar-square. Were his views carried out, the necessity at present existing of finishing off the monument and other parts, in so shamefully incomplete a state, would then be still more apparent. I propose, then, as follows:—After finishing the Nelson Column by adding lions, or some other ornament to the four granite pinnacles at the corners, and placing some equally respectable monarch with King George IV. on the vacant pedestal at the west end of the square, the following additions as improvements. Upon the terrace balustrade, at equal distances, short lamps should be affixed, at present, except at the extreme end, all is darkness. Lamps should also be continued along the sloping walls bounding the east and west sides: the line of posts at the south end should also have gas lights, say at every third post. To say nothing of ornament, the light afforded would be a public benefit: now a Cimmerian darkness is spread over the whole area. The stone inclosures of the fountains require a light ornamental framework or rails, where a lamp at each of the four sides would have a good effect, especially on a summer or early autumn evening, when the fountains playing behind them would improve the appearance of things. The fountains themselves might even be made more satisfactory, if, instead of flowing out of ginger-bear-bottle jets, nozzles were put on that would send the water out in the form of an umbrella. Fish of various kinds—gold, silver, &c.—that would agree together, would add to the attractions. An evening or two back, when the weather was gloomy and cold, they were playing with all their might: now this is absurd. When Autumn, with its cool atmosphere, has arrived, fountains are no longer delightful: in fact, they make the air much colder, and it is time they were discontinued for the remainder of the season. If the Government take no steps after this troublesome Indian war and year are over, it would be well to get up a powerfully supported petition for finishing and improving this desolate region; and if that fails, I suggest the propriety of the people themselves shaming their lethargic Government by getting up a public subscription, for the purpose of carrying the necessary improvements into effect. It is really monstrous to see the monument of so great a benefactor to his country as Nelson was, in the unfinished state it is now in, and a gross insult to his memory.

TRUE BLUE.

#### PEPPY ON THE THAMES AND ON ORGANS.

I FIND the following entry in Peppy's Diary:—  
"1666. Jan. 5.—Reading a discourse about the River Thames, the reason of its being choked with mud in several places, with shelves, which is plain, is by the encroachments made upon the river, and running out of causeways into the river at every wood-warfe, which was not heretofore when Westminster Hall and White Hall were built, and Redriff Church."

The necessity for embanking the river is now still greater than it was at the time when the above was written, for other reasons besides those mentioned therein. And besides the embanking, it would be highly desirable to straighten the course of the river, especially at the Isle of Dogs. This might be done by converting the West India Docks into a canal, and dividing the "Reach" into docks, which could be made accessible from Middlesex by a high-level junction from the Blackwall Railway, that being a high-level road. The way of the river would thus be a mile shorter than now. The dock space would be more than doubled, the river would be more free from mud, and the impure water would escape more rapidly. But the mud comes from above London, and must be deposited somewhere, and if the above improvements were made, much more of it would [as]

some does at present) accumulate upon the sandbanks at the mouth of the river and off the Essex coast. These might then be converted into available land, instead of being, as at present, places for ships to run aground upon."

In the work above quoted are the following notices of organs in London churches, which, perhaps, will be interesting to some of your recent correspondents.

"1667. Jan. 23.—To St. James's, to see the organ Mrs. Turner told me of the other night, of my late Lord Aubigny's, and I took my Lord Brouncker with me, he being acquainted with my present Lord Almoner, Mr. Howard, brother to the Duke of Norfolk; so he and I did see the organ, but I do not like it, it being but a bawble, with a virginal joining to it."

April 4.—To Hackney, where good neat's tongue, and things to eat and drink, and very merry, the weather being mighty pleasant; and here I was told that at their church they have a fair pair of organs, which play while people sing, which I am mighty glad of, wishing the like at our church at London, and would give 50*l.* towards it."

21st (Lord's Day). To Hackney Church, where very full, and found much difficulty to get pews, I offering the sexton money and he could not help me. So my wife and Mercer ventured into a pew, and I into another. A knight and his lady very civil to me when they came, being Sir G. Viner and his lady, rich in jewels, but most in beauty—almost the finest woman I ever saw. That which I went chiefly to see was the young ladies of the schools, whereof there is a great store, very pretty; and also the organ, which is hand-ome, and tunes the psalm and plays with the people, which is mighty pretty, and makes me mighty earnest to have a pair at our church (St. Olaf, Hart-street), I having almost a mind to give them a pair, if they would settle a maintenance on them for it."

W. SCARELL.

#### Miscellaneous.

A GENERAL INDEX FOR THE "BUILDER."—May I suggest how valuable a general index to the *Builder* for the whole time of its existence would be? The *Beauzefung* (Vienna) has just given one for its twenty years' course—1836-1855—in one vol. for two toms, or about 4*s.* The *Builder* is now a stock book of reference; but we want it to be made readily accessible. The "Archæologia" of the Antiquarian Society gives such an index from time to time. It is no joke to hunt through fourteen or fifteen indexes for any subject; but, if brought under one head, and well classified, the thing is soon done. All I would ask would be to have the present indexes put well together under the various heads, in one volume. As a case in point, there has recently been some sparring about the scaffolding made of whole timber, who first introduced it, &c. &c. Now the *Builder* for 1845, pp. 33, 34, 41, 91, tells all about it, and gives, moreover, the diagram (p. 91) of a clever derrick used at Liverpool. Page 41, moreover, gives the circular scaffold used at Westminster. Now had I had a general index to the *Builder* at hand, I and others would at once have dipped into that storehouse of information, and have known the rights of the matter in dispute. Pray consider this suggestion.—AMICUS.

ELECTION OF MANCHESTER CITY SURVEYOR.—The Manchester City Council, at their special meeting last week, elected Mr. James Gascoigne Lynde, of Westminster, to the office of city surveyor, at the salary of 750*l.* per annum. Mr. C. E. Cawley, of Manchester, and Mr. G. W. Stevenson, of Halifax, were also proposed.

SUBWAYS.—SIR, I have read with much attention, and concur with your correspondent (A), in his general remarks on the distribution of prizes for the competitive drawings for subways. A more satisfactory result would have been given, had a ticket for each competitor been thrown into a hat, and six drawn out blindfold or haphazard from the mass. But when it is known, and publicly stated, and the fact is certainly proved, that the head prize of one hundred guineas has been awarded to a youth of 19 for a garbled and mutilated copy of an engraving, in Jaspur Rogers's pamphlet—"Facts and Fallacies of the Sewage System"—I consider it a discredit to all concerned.—FAIR PLAY.

THE DESIGNS FOR SUBWAYS.—SIR: In your review of the "Sub-way" designs, after describing the scheme of Design No. 11, which received the first premium, it is stated—"The cost of this arrangement is computed at from 38*l.* to 39*l.* per lineal yard." The figures should be "from 30*l.* to 32*l.*" In scheming our design, my brother and myself considered the "economical" question—one not at all to be overlooked; and we took great pains in estimating the cost: 64 or 74 per lineal yard makes a considerable difference in a long street.

FREDERIC WARREN.

RAILWAY MATTERS.—An address by way of testimony has been presented on illuminated vellum to Mr. Edward Pease, the Quaker, who originated the Stockton and Darlington railway, and is regarded by some, though others deny it, as "the father of railways." Mr. Pease may be said to have been the man who discovered George Stephenson, and presented him to the world.—The "Dublin Freeman" says,—"We had an opportunity of examining a model of a newly invented railway brake, arranged by Mr. Mathews, of this city, which, so far as we are able to judge, seems to possess many advantages over the present brake. The principle on which it is formed is the *Skid* principle, and the manner in which the force requisite to bring it into action is applied seems peculiarly effective. The restraining power which this brake is capable of exerting is enormous, and if, in the application of it in practice, it should be found that no unforeseen difficulties arise, we anticipate much advantage from the ingenious arrangement."—Two of the bridges on the Eastern Counties line have been carried away by a flood. The traffic beyond Broxbourne was entirely stopped. In this dilemma the directors applied to the London General Omnibus Company, who at once offered to provide fifty omnibuses and 100 horses to assist them. Several of the company's omnibuses, therefore, were set to work on the traffic between Broxbourne, Ware, and Hertford.—At a recent meeting of the East India Railway company, in London, Mr. C. W. Ford, M.P., who presided, said,—"It was satisfactory to the shareholders that the injury to the works was not so serious as had been apprehended. They had got a list of their loss at Delhi, which included Mr. Taylor, engineer, and Mr. Bean, inspector. There were five of their officers lost at Cawnpore.—Mr. Miller, Mr. Heberden, Mr. La Touch, Mr. Hanna, and Mr. Bane. He only referred to their principal officers. At Allahabad they had lost Mr. Hobson, their locomotive superintendent. He referred to the gallant conduct of Mr. Boyle and Mr. Kelly in their able defence at a station or house at Arrah, with the aid of a few Sikhs, against a large force of mutineers during seven days. By means of engineering skill and untiring exertions, Mr. Boyle defended the place, which was no better than a private house, until assistance arrived. The prospect of the company, he added, was excellent."

RAILWAY TRAFFIC.—The traffic returns of the railways in the United Kingdom, for the week ending Oct. 17, amounted to 488,320*l.* and for the corresponding week of 1856 to 473,620*l.* showing an increase of 14,700*l.* The gross receipts of the eight railways having their termini in the metropolis, amounted to 207,086*l.*; and last year to 207,621*l.* showing an increase of 53*l.* The increase on the Great Western amounted to 2,904*l.*; on the North-Western to 775*l.*; on the Brighton and South Coast to 318*l.*; and on the South-Eastern to 1,013*l.* total, 5,010*l.* But from this must be deducted 736*l.* decrease on the Eastern Counties; 2,645*l.* on the Great Northern; 106*l.* on the London and Blackwall; and 1,408*l.* on the South-Western; together, 4,945*l.* The receipts on the other lines in the United Kingdom amounted to 280,634*l.* and for the corresponding period of 1856 to 265,097*l.*; showing an increase of 14,637*l.*

TAFF VALE EXTENSION RAILWAY.—The viaduct at Crumlin is not the only structure worthy of notice on this line. The Maesymunwr Viaduct at the Rymney Junction, about six miles from Crumlin, is 552 feet 6 inches long; breadth at top over the parapet, 28 feet 6 inches; breadth at the foundation of the piers, 40 feet; thickness of piers at bottom, 10 feet; ditto at springway, 5 feet 6 inches; height of bridge above the river, 120 feet; number of openings, 16; span of openings, 40 feet; arches, semi-circular, time building, two years; timber used in scaffolding, 32,000 cubic feet; architects, Messrs. Liddell and Gordon; the contractors are Messrs. Rennie and Logan; and the total cost is under 20,000*l.* This viaduct is built of stone obtained in the neighbourhood. The masonry is what is termed rock-work, with a block course at the springing of the arches. There is nothing ornamental about the work, the main object being strength.

THE MAYOR-ELECT OF MANCHESTER, ONCE A JOURNEYMAN MASON.—Mr. Ivie Mackie, of the firm of Findlater and Mackie, has received a memorial, signed by fifty-four of the town-councillors of Manchester, requesting him to become mayor at the approaching election in November. Mr. Mackie is a native of Ayrshire, and some thirty years ago was a journeyman mason in Glasgow. This should give encouragement to strikers.

WARMISTON ATHENÆUM.—A member of the institution informs us that our recent observations on the proposed front will not be without effect, and that the design will probably be re-considered. He states, what we are glad to mention, that the front complained of resulted from an attempt to alter a design to meet the views of others, and that the architect can scarcely be held responsible for it.



**"SCREEN" SHUTTERS.**—From a desire to serve the early closing movement, which I believe you have also at heart equally with myself, I send suggestions for an improved labour-saving, and consequently time-saving, shutter, to replace the common kind of single shutter generally in use. It would, I believe, answer equally as well as the revolving shutter, at a very much less cost of fixing, and would involve but little extra expense beyond those commonly in use, as the single shutters might probably be used in the manufacture of the new kind I propose to be employed. It is suggested then that they be made on the "screen" principle to fold up into a box outside at the end of each window, and of course on a level with the top and bottom of the framework, having a support underneath the box. By the present system of shutters in general use, where the shop front is large, some half-hour, and often much more (as they get misplaced, and from other causes are found difficult to fix properly) is spent in shutting up, and this time is subtracted from the already too little leisure time of the very often overworked assistant. Other contingencies render the quick closing of shops advisable, such as crowds assembled from some special cause, wet weather, and cold nights.—**HUMANITARIAN.**

**SOUTH WALES INSTITUTE OF ENGINEERS.**—A general meeting was held at Merthyr, on Thursday in last week, for the purpose of receiving the names of members, agreeing to the rules, electing officers, &c. of the new association, to be called the "South Wales Institute of Engineers." About fifty gentlemen connected with engineering were present. Mr. Meneloes, of Dowlais, who presided on the former occasion, again took the chair. After agreeing to various rules, the members proceeded to the election of officers, when Mr. Williams, of Dowlais, the first proposer and originator of the institute, was unanimously elected president for the ensuing year. The vice-presidents elected were—Mr. E. Rogers, Abercarn; Mr. Adams, Ebbw Vale; Mr. Martin, Dowlais; Mr. T. Evans, Dowlais; and Mr. Clarke, Aberdare. The council are—Mr. Truman, Dowlais; Mr. R. H. Rhys, Aberdare; Mr. D. Williams and Mr. Bedington, Rhymney; Mr. Edward Williams, Dowlais; Mr. S. B. Rogers, Nant-y-glo; Mr. Huxham, Pontypridd; Mr. Richards, Ebbw Vale; Mr. Pearce, Cyfarthfa; Mr. D. Roberts, Rhymney; Mr. Cox, Newport; Mr. J. James, Blaiddia. The members then dined together.

**THE SHEFFIELD SCHOOL OF ART.**—The fourteenth annual meeting of this school was held on Thursday in last week, Dr. Branson, the president, in the chair. Mr. Young Mitchell read the annual report and abstract of accounts. The council regretted that no diminution had taken place in the debt on the building since the last annual meeting. The amount of the debt is 1,650*l.*; and not expecting to raise so large an amount at present, they had borrowed 1,000*l.* at 5 per cent. on mortgage of the building. It was matter for congratulation that the number of pupils for the present quarter is 263, being eighty-two more than for the corresponding quarter of last year, when the old school was in use. The educational progress continued to be highly satisfactory, as proved by the numerous medals obtained by the pupils at the late examinations. The general account gives the expenditure of the year at 9,97*l.*; and the income, including a balance of 12*l.* from last year, and a grant of 406*l.* from Government, at 9,59*l.*; leaving a balance against the Institution of 38*l.* The total cost of the building, including the purchase of land, solicitors' charges, &c. is 7,808*l.* 4*s.* 7*d.*

**ALL SAINTS, BLACKHEATH.**—The memorial stone of All Saints' Church, Blackheath, was laid by the Right Hon. the Earl of Dartmouth, on Monday, the 26th of October. The church is designed in the Decorated style, and consists of a nave and aisles, chancel, and north porch. Provision is made for the addition of a tower and spire at the south-west angle of the building. The church when finished will accommodate 600 persons. The materials are Kentish rag and Bath stone. The architect is Mr. Ferrey, and the contractors are Messrs. Holland. The amount of the contract is 3,700*l.*

**SMOKY CHIMNEYS.**—In reply to "J. G." who complains of the want of a remedy for smoky chimneys, will you allow me to point out the cause of chimneys smoking at both ends, and the means to be adopted to make them smoke out at one end only, and that the top end? The general cause of smoky chimneys is the too great width or space at the bottom thereof. The remedy is simple: contract the lower part of the chimney (equal to the narrowest part above) down to the fire-place, and you will thereby increase the velocity of the smoke, which will rush to the top, not having a cooling chamber to impede its progress. The draw-plate (an unuseful appendage) acts on the same principle; it contracts the mouth of the chimney, and thereby increases the draft.

WM. PICKERING.

**NEW APPLICATIONS OF PHOTOGRAPHY.**—At a recent meeting of the Liverpool Photographic Society, a paper was read by Mr. Forrest, in reference to the effect upon the photograph of burning in the impression, with a coating of glass over it. He found that a negative applied to a piece of opal glass which had been very finely ground, collodionised, and sensitised, produced a very beautiful impression by the transferring agency of light, and, after being fixed, washed, and dried in the usual manner, a film was found adhering to the glass, and could not be removed by rubbing. Views of this character would be displayed to advantage in hall lamps, or staircase windows might be thus fitted up with beautiful landscape scenery. So early as 1820, a beautiful transparent yellow had been produced by laying salts of silver upon glass. He described a process whereby he had obtained the yellow silver tint in opal glass, and exhibited several specimens, the results of his various experiments.

**MEMORIAL CHURCHES AT CANNUPORE AND DELHI.**—An officer of engineers, who is a near relative of seven of the Cannupore victims, says:—"There is some talk of raising a monument over that well. They don't understand the natives, or they would do nothing of the sort. What does a Hindoo care for a marble pyramid or obelisk? Now what they should do is this—Build above that well a Christian temple, as small as you please, but splendid, so that future generations of Christians shall say to as many generations of Mahomedans and Hindoos, 'Look here! On this spot your fathers wrought the blackest of their deeds to get rid of Christianity from India. See what came of it! Christian rites are now celebrated and Christian worship presented on the very site of that well, and above the ashes of 200 martyrs.'" The Society for the Propagation of the Gospel have adopted the idea of memorial churches at Cannupore and Delhi, and announce that they are ready to receive subscriptions. First of all, however, it is to be hoped that the justice of the case at Cannupore will be met by the punishment, upon the spot, of the diabolical wretches who committed such acts as were there perpetrated. The Hindoos would also appreciate this as a retributive act.

**GAS.**—At the first general meeting of the Burslem and Tunstall Gas Company, the report of the directors stated that the extensive alterations now in progress at the Longport works were proceeding satisfactorily, and would shortly enable the company to supply the whole of the district included within the limits of the Act.—The Ecclesall Gas Company's directors report that from increased revenue, combined with diminished expense of working during the past year, it has been resolved to pay the shareholders a dividend of four per cent. still leaving a balance in favour of the company, and that if the present rate of improvement continues, the directors will soon be enabled to reduce the comparatively high price of the gas.—The directors of the Hawick Gas Company have resolved to lay a main pipe along the principal street of Wilton.—At Fochyber, some gentlemen connected with the place subscribed to provide gas-lamps in the principal thoroughfares, and the directors of the gas company, besides contributing, offered to supply the requisite gas free of expense. Still the subscriptions raised were inadequate, and, on this being made known to the Duke of Richmond, his Grace agreed to make up the necessary funds. The work was accordingly contracted for by Messrs. John Blaikie and Sons, of Aberdeen, and last week the main street was lighted up for the first time.

**THE RETEENERS' DRAINAGE SCHEME FOR LONDON.**—The Metropolitan Board of Works have declined to adopt the scheme proposed by the engineers appointed by the First Commissioner of her Majesty's Works, and have forwarded to his office a communication containing a statement of reasons, and asking for an interview. An appointment was made for Thursday last.

**WANTED! A COVERING FOR LEAD.**—Can any of your subscribers inform me, from actual experience, the best material wherewith to line a leaden cistern, in which water is stored for domestic and culinary purposes, so as to prevent the water being contaminated? On referring for information to your excellent publication, a remedy is suggested in No. 665, by Mr. Wentworth L. Scott; but can any one recommend it for efficiency, durability, and non-injurious action on the lead, after thoroughly testing it? The deleterious effects of water stored in leaden cisterns are universally acknowledged, and yet how seldom are efficient means taken to prevent the water coming in contact with the lead! To counteract, and to some extent to remedy, the evils arising to water in leaden cisterns, is what is generally resorted to; but the most sensible way to me appears to be to prevent the water having any communication with the lead; and the question then arises, what is the material best fitted for the object?

SUBSCRIBER.

\*\*\* Lead may be avoided altogether by the use of slates.

**DESTRUCTION BY FIRE OF HAWARDEN CHURCH.**—The village of Hawarden, Flintshire, was on Thursday, in last week, illuminated with flames, which had encircled the church of St. Deniol,—otherwise Hawarden church. This church was built about 1275, and was the property of Sir Stephen Glynn. Considerable improvement had been effected in it of late years, the church having been completely restored. The fire was first discovered in the nave and chancel. By the time the engines had arrived from Chester, seven miles distant, the roofs of the nave and side aisles had fallen, carrying with them the galleries, and burying in one undistinguishable mass several marble monuments, carved stalls, font, lectern, pulpit, reading-desk, and screen. The efforts of the fire brigade were then chiefly directed to save the chancel, which was at first burning furiously. They were so far successful as to preserve four painted windows; but the organ, which was worth 250*l.*, was totally destroyed, partly by fire and partly by the efforts of the villagers to save it. The tower remains entire, but it is feared that the arches on which it rests are so far injured as to make the whole unsafe. It was discovered that, beyond all doubt, the church had been purposely set on fire. The damage done is estimated at 4,000*l.* No clue to the perpetrator of the crime has yet been found.

**SUSSEX ARCHAEOLOGICAL SOCIETY.**—The autumn quarterly meeting of this society was held at Cuckfield on the 16th ult. Mr. J. G. Dodson, M.P. in the chair during the early part of the time, and afterwards Mr. R. W. Blencowe. Several new members were elected, and various objects of interest exhibited. The Rev. Mr. Dale then read a paper on traces of Saxon and Norman architecture in Bolney Church, which is reported in the *Brighton Gazette* of the 22nd ult. After some little discussion and other procedure, the company went to inspect the church, Ockendon House, and Cuckfield-place, and afterwards partook of a cold collation at the Talbot Hotel.

**COLLINSTOWN SCHOOL-HOUSE.**—After the confirmation at Castlepollard, on Friday last, the 28rd instant, the Bishop of Meath returned to Collinstown to preside at a meeting in aid of the societies of the Meath Diocesan Church Missions, and of that for promoting Christianity among the Jews. The new school-house, erected at the sole expense of W. Meade Smythe, esq. after the designs of Mr. J. Billing, architect, being sufficiently advanced to admit of using the principal school-room for the occasion, advantage was taken of the presence of the Bishop of Meath and of his uncle, Mr. Meade Smythe, the munificent builder of the school-house, to inaugurate the building.

**WELLINGTON-STREET, STRAND.**—Sir: There is a frightful chasm in front of the new west wing of Somerset House. I think it runs close to the pavement for an extent of about 150 feet. This well is about 50 feet deep; and any boy of ten years of age might surmount the low balustrade, 4 feet high, and ride, and if he fell into it, it would be dashed to pieces against the stones at the bottom. I will say no more, lest some wantons should try it; and if they were, who would be to blame? Pray counsel a remedy. An iron railing, 5 feet high, would do it.—B.

**PAYING BRIDGES.**—You are much interested in the bridges crossing the Thames. I passed over South wark-bridge, paying 1*d.* toll. During my passage there were in all five foot-passengers and two carriages, and yet the proprietors persist in charging the public 1*d.* toll: time, quarter-past eleven a.m. 2nd November, 1857. On the same day, an hour later, I passed over Waterloo-bridge (toll, a 1*d.*), there were seventy-nine foot-passengers, and nineteen carriages during my passage—so much for a 1*d.* toll. These proprietors seem better to know their own interest and the claims of the public.—JOHN WY.

**THAMES TUNNEL.**—14,269 passengers passed through the Tunnel during the week ending 24th October, and paid 59*l.* 9*s.*

**BOILER EXPLOSIONS.**—The fearful loss of life arising from the explosion of boilers has led me to reflect how such casualties may be lessened and alleviated. I am only an actively thinking man, unconnected with any mechanical employment, yet my suggestions will, I hope, be none the less acceptable, if useful. It has occurred to me that, in place of one boiler, if two were employed, one only to be worked at a time, a constant supervision might be made, and their cleansing and defects being attended to and more readily known, there would be less liability to explosions. Another suggestion I submit, deferentially and under fear of miscalculation, is, that if a massive wrought-iron railing, or framework, encircled these, not perhaps closely adhering to the sides, but a little apart from them, the force of an explosion might be considerably decreased. It is a bad state of things to look forward to such explosions being likely to happen at all, but it is to be feared that at present, and perhaps for some time to come, such occurrences must be expected to take place.—GABRIEL.



**WHY KEEP RABBITS?**—Perhaps the *Builder* will ask this question of my fellow-workmen. Now that the cholera threatens us, it may be worth a thought whether these innocent pet animals do not add much to the danger of the crowded neighbourhoods in whose courts they are boxed up. On each side of the house in which I live, in a new part of St. Pancras, there are rabbits kept, and the odours arising therefrom are anything but healthful. In one part of the street, this last week, a respectable family was attacked with a virulent fever: first the child died, then the father, and now the mother lies in a dangerous state. A stable, not far from the back of the house, may perhaps have been the cause; but it is evident that even in clean streets the inhabitants must be watchful that nothing be allowed to accumulate in the back-yards. Another evil is that the dust-bins are allowed to be over-filled before the dustman is called. The parish of St. Giles has given a hint to its parishioners (and other parishes should follow the example) not to be deterred by the bonus expected by this functionary, whose duty it is to collect the dust, &c. daily without payment.—**ONE OF THE MILLION.**

**BRITISH LEAD.**—The produce of lead in Great Britain amounts to fully two-thirds of the produce of Europe. Spain stands second, producing about one-third as much: united, the production of these two states is equal to seven-eighths of the European produce. The lead deposits of the United States extend upwards of 3,000 square miles in the States of Missouri, Illinois, Wisconsin, Oregon, North Carolina, and California. A few years since, the Western States of North America produced large quantities of lead: as much as 40,000,000 of pounds have been produced in 1851; but the deposits opened out, it is said, have not continued equally productive in depth, and their present comparative poverty is demonstrated by the large importations of British lead into these States.—*Useful Metals and their Alloys.*

**INSTITUTION OF CIVIL ENGINEERS IN SCOTLAND.** The first meeting of the session of this newly-formed association was held in the Philosophical Society's Hall, George-street, Edinburgh, on Wednesday in week before last. Professor Rankine, the president of the institution, occupied the chair. The secretary read the minutes of a meeting held in June, and announced the names of eight influential gentlemen proposed as members, to be ballotted for at the next meeting. The president then delivered an inaugural address.

**ENGLISH ENGINEERS IN DENMARK.**—We learn from a Flensburg journal that, on the 12th of October, the King of Denmark conferred the Order of the Danebrog upon Mr. Paton, civil engineer, for his pamphlet on the Jutland Railway, and other services. This is the second time during the present reign that this order, the highest but one in Denmark, has been given to an Englishman; Sir S. M. Peto having been invested with it on the occasion of the opening, by the King of Denmark, of the Royal Danish Railway.

**BOARD OF EXAMINERS FOR DISTRICT SURVEYSHIPS.**—At a meeting of the Board of Examiners, held on the 27th ult., present, Mr. C. Fowler (in the chair), Mr. Geo. Fownall, Mr. Inman, Mr. Whitehead, Mr. Godwin, Mr. Scoles, Mr. Pennington, and Mr. C. C. Nelson, honorary secretary—several candidates presented themselves, and a certificate of competency was given to Mr. T. B. Knightley.

**THE QUEEN'S PARK ESTATE, CHESTER.**—This estate, which comprises about 102 statute acres of land, and a number of villa residences, producing a rental of from 600*l.* to 700*l.* per annum, was disposed of by public auction at the Royal Hotel, Chester, on Monday; it was knocked down to Mr. Warner, of Manchester, for 19,000*l.*

**IMPROVEMENTS IN THE SUFFOLK-STREET GALERIES.**—The architect engaged on these works is Mr. Francis H. Fowler, not Mr. C. Fowler, as was stated.

**ROMAN REMAINS AT FLEY.**—Some tumbled stones, set in mortar on puddled clay, and showing the action of fire, with Roman coins and pottery, bones of domestic and other animals, &c. have been found at a barrow on the Cairn head, near Fley, and are described more particularly by the *York Herald*.

**TENDERS FOR THE NEW BRIDGE AT SUNDERLAND.**—This matter was decided by the Sunderland Corporation accepting the tender of Mr. Benjamin C. Lawton, of Newcastle, for 34,997*l.* The following tenders were sent in:—

Butler .....	236,613
Kinnaird, London .....	26,037
Richard, Newcastle .....	35,245
B. C. Lawton, Newcastle .....	34,997
Neil .....	31,488

Messrs. Forster and Lawton, of Birtley, sent a tender (but not in time) for 34,390*l.*; and it is observable that, with a single exception, there is a close approximation in the tenders to Mr. Stephenson's estimate of the cost of the bridge, 35,156*l.*

**TYPES.**—Mr. Editor: It would add much to the value of the descriptions of the illustrations in the *Builder*, if the writers would notice, in many cases that occur, the type upon which the plan, elevation, or details of the building given may be founded. In the case of the Church of Notre Dame de Dadezele, of which you gave the plan and a view in your last number, the plan is evidently founded upon that of the exquisite Church of Lieber Frauen Kirche at Treves, which is attached to the cathedral. The ends of the transepts and nave are square in the Dadezele Church, instead of polygonal, and the nave is longer by one bay; but in other respects the recent church closely follows its prototype in plan, as you may see by the sketch enclosed, and which I made at Treves a few weeks ago.—**THOS. L. DONALDSON.**

**KENNINGTON.**—Tenders have been received for building new mistress's house, new infant school, and class-room in Bolton-street, Kennington; Mr. F. H. Fowler, architect. The quantities taken out by Mr. Smith. The tenders ranged from—Cooke, 514*l.* to Noley, 574*l.*

**THE GENERAL POST-OFFICE, ST. MARTIN'S-L-GRAND.**—Very considerable alterations have been made here to give additional room, but architecturally they cannot be considered improvements. The hall has been filled up with offices, and spoilt altogether.

**INDUSTRIAL EMPLOYMENT OF PRISONERS.**—It is indicative of the dawn of common sense in the management of our gaols, as places of criminal punishment, remarks the *Brighton Gazette*, in reference to a recent county magistrate's decision, when we find the Surrey magistrates, upon the principle that the cost of punishment of the criminal classes should not fall upon the honest and well-conducted ratepayers, but upon the offenders themselves, came to the resolution of making the Wandsworth Prison a self-supporting institution, by turning the labour of the prisoners to remunerative work. This is true economy, whatever political economists may say to the contrary; and we should like to see the same principle generally acted upon, not only in gaols, but also in workhouses, with this difference in favour of the latter,—that all the money earned beyond the cost of his maintenance should be put to the account of the pauper, so that he may one day or other shuffle off the badge of pauperism, and restart in the world as a man of independence. Were such a system acted upon, we should be freed from an immense amount of taxation, and feel ourselves in a better position to bear any burdens which such a crisis as the Russian war, or the revolt in India, might impose upon us.

## TENDERS

For new Chapel, to be built at Hertford. Mr. Henry Clifton (St. James's), architect:—

Murray .....	£1,318	0	0
Myers .....	1,150	0	0
White (Pimlico) .....	1,154	0	0

For Lea House, Herbert-street, Hackney-road. Mr. T. E. Knightley, architect:—

Cott .....	£1,850	0	0
Rivett .....	1,823	0	0
Piper and Son .....	1,637	0	0
Wood and Sons .....	1,393	0	0

For Villa at Sunning-hill, Ascot. Mr. T. B. Knightley, architect:—

Vades and Son .....	£3,025	0	0
Patman .....	2,811	0	0
Wood and Sons .....	2,763	0	0
Mills and Son .....	2,604	0	0

For new Workshops and Offices, for Messrs. Gwynne and Co. engineers, Millford-lane, Strand. Mr. Lay, architect. Quantities taken out by Mr. Barrett:—

	To be furnished in Six Weeks.	Eight Weeks.
Dennis .....	£4,171	0 0
Downes .....	3,960	0 0
Seagrave and Co. ....	3,918	0 0
Monday .....	3,600	0 0
Gomme and Bryan .....	3,514	0 0
Rove .....	3,463	0 0
Hill .....	3,473	0 0
Ashton .....	3,380	0 0
McLellan and Bird .....	3,370	0 0
Mason .....	3,243	0 0
Jarvis .....	3,200	0 0
Purkis .....	3,178	0 0
Lane and Lewis .....	2,943	0 0
	2,900	0 0

Sir,—Not seeing in your last impression an account of the above tenders, I have sent them to you for your inspection and use. As usual, you will find a great discrepancy between the highest and the lowest. How such things occur unless wilfully done (or worse), especially where quantities are supplied, is a mystery to all persons connected with the trade, and beats all figures and calculations of costs. Could this pernicious and ruinous system be put a stop to, it would be conferring a great boon both to the building trade in general, and also to the merchants who supply the materials. I propose that you should publish in your journal the quantities priced out, so as to bring the estimate to the amount contracted for. I have made an estimate for one of the competitors, and stand somewhere in the middle, and if you only intimate your willingness to do so, I will furnish you with a bill moneyed out, and the prices will prove the manner in which this

work has been taken. I think a few such publications would be the most effectual check, and many would have to thank you for saving them from ruin, and others for having been the means of obtaining work at remunerative prices. J. F.

## TO CORRESPONDENTS.

**GREENSBURY FLINT.**—Sir,—Being about to erect some greenhouses for plants, which I want heated by flues, I want of your readers be kind enough to inform me, which is the best description of covers for them, as I find some of ordinary stone crack, and let the smoke out? They will not be subject to much heat, still they will have to withstand a brisk air at times. Perhaps they would also say what is the best kind of ordinary bricks for the purpose, and if time will do for the joints. Each flue will be about 30 or 100 feet long, and I am told it is only the first 8 or 10 feet, that is likely to suffer much by the heat. I should like to know, too, if flues in their course, may not descend a little, as well as ascend, without detriment to their drawing, as I find some difference of opinion on that point. C. H. K.

**FRONTS FLUES.**—I am desirous of inspecting an iron foundry, in which the flues descend, and are gathered into one common shaft. Will any of your readers be kind enough to inform me where a foundry, illustrative of the principle in question, may be seen? S. LAG.

**J. A. C.—MR. R.—D. C.—O.—P.—L.—C.—R.—R.—H.—H.—P.—and W.—W. S. F.** (consult a dictionary)—**MR. H.—DE J.—J. P.—J. C.—N. H. B.** (we are not prepared to recommend closing the thoroughfare)—**E. T. B.—R.—E.—G.—S.—T. E. R.—REV. C.—F. R.—B.—C. V.** (shall hear from you)—**S. E. C.—W.—D. A.** (next week)—**H. J. H. T.** (we are forced uniformly to decline)—**F. M. (ditto).**—**W. J. G.—E. G. R.—J. S. S.**

**CHATELAIN OF DREZELLE.**—The scale to plan, p. 626, should have been marked French metres, and "feet."

**"Books and Addresses."**—We are forced to decline pointing out books or finding addresses.

**NOTICE.**—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor." All other communications should be addressed to the Editors, and not to the Publisher.

## ADVERTISEMENTS.

**A CIVIL ENGINEER**, holding the appointment of county surveyor in one of the western counties, has a VACANCY for an ARTICLED PUPIL. Any youth having a taste for the profession would be received for four years for a moderate premium.—Application may be made to S. X. Z. care of Mr. Roberts, 197, High-street, Exeter.

## TO ARCHITECTS.

**GENTLEMEN** in want of Assistance, can have DRAWINGS detail or perspective executed with ability and dispatch by the architect (JAMES) at his residence, 17, Hill-street, Knightsbridge, S.W. First-class references if required.

**PADDINGTON.**—The Vestry of the Parish of Paddington are desirous of obtaining the SERVICES of a PROFESSIONAL GENTLEMAN in SURVEY and VALUING, for the purpose of Parochial Assessment, the properties of the undermentioned public companies, so far as their works and operations extend in the parish, viz.—The London and North Western, the Midland Water-works Company, the Grand Junction Water-works Company, the Grand Junction Canal Company, the River and Dock Company, and the Electric Traction Company (if necessary). Applications, stating terms, to be forwarded to the Vestry Clerk, on or before MONDAY, the 30th day of NOVEMBER instant. By order, FREDERICK AVILING, Vestry Clerk.

Vestry-hall, Harrow-road, November 6, 1857.

## TO BRICKMAKERS.

**WANTED, a Young Man** (unmarried preferred) for the West Coast of South America, accustomed to making and burning bricks, setting kilns, and all the usual routine of an English brickyard. Liberal terms to a permanent party.—Apply, in the first place, by letter, to J. W. at Mr. Duncan's, 6, Crawley-street, Oakley-square, London, N.W.

## TO PLUMBERS AND BUILDERS.

**WANTED, by a person of great practical experience**, who has been for many years engaged in the leading establishments of London, a SITUATION as FOREMAN. Unexceptionable testimonials as to character and ability can be given.—Address, W. FORD, Office of "The Builder."

**WANTED, a SITUATION as FOREMAN**, by an energetic steady man, is quite competent to manage a business and keep books if required, in the iron, brass, and bell-hanging line. Understands hot-water work in all its branches.—Care of Mrs. Utteridge, 72, Great Queen-street, Lincoln's Inn-fields.

## TO CARPENTERS, BUILDERS, &amp;c.

**WANTED, by the Advertiser**, who is a young man, aged 31, from the country, a SITUATION, laborer. Wages no object so long as improvement can be obtained.—Address, C. O. J., Whitist-street, N. road, N.W.

**WANTED, a SITUATION as MESSENGER** in a Bank or Chambers, by a middle-aged man, who is active and willing, and knows town well; has been head porter in a warehouse four years, and is in receipt of a pension from the police for fifteen years' active services. First-class references.—Address, J. H. Thomas, swimmer, St. John's-street, Half-penny-road, Kim-sled.

**WANTED, by a Young Man**, aged 23, a SITUATION as a Builder or Architect, and surveyor of land, either in town or country. Is a first-rate draughtsman and has a good knowledge of taking off quantities, squaring up, and getting into bill. Unexceptionable references.—Address, Mr. W. 24, Clayton-place, Kensington-road, London.

## TO BUILDERS, SURVEYORS, AND HOUSE AGENTS.

**WANTED, by a steady, experienced, middle-aged man**, as DRAUGHTSMAN or SURVEYOR, a SITUATION, new or repairs, or would take any quantity of Joiner's Work by the piece.—Address, A. Z. Mr. Gurney's, 18, Meredith-street, Clerkenwell.

## NOTICE TO PLUMBERS, BUILDERS, AND OTHERS.

**WANTED, by a Young Man**, a constant JOB, as TRADE-BRANCH HAND PLUMBER, PAINTER, and GLAZIER; has a general knowledge of painting. Good references. Wages 2*l.* per week. Good references. Mr. WILLIAMS, care of Mr. H. C. Reid, 39, Exeter-street, Bloomsbury, Chelsea.

## TO ARCHITECTS.

**WANTED, a SITUATION as CLERK of WORKS**, by a Man of many years' experience, in the construction of houses and villa architecture, &c. The Advertiser is a rapid draughtsman, and possesses a thorough knowledge of interior decorations in Gothic and Italian work. No objection to the country.—Address, BILSON, Office of "The Builder."







# The Builder.

Vol. XV.—No. 771.

**T**HE successful accomplishment of the Atlantic telegraph would be an event, in the *matter-of-fact* history of the world, standing out beyond all others as a consummation of progress, just such as, in the world's prophetic history, is the "drying up" of the "mystical river Euphrates," whatever that may be, and the making of "a way" to the west thereby for "the Kings of the East," whoever these may be. There would even be as much feasibility in the attempt to interpret the one of these series of events as a prediction of the other, as there is in not a few other similar attempts. The coming year, it is to be hoped, will see the great telegraphic event successfully accomplished.

The first indication or suggestion of the possibility of throwing a telegraphic cable across the Atlantic ocean, and of so uniting the two opposite hemispheres of the globe, is said to have been made by Professor Morse, of America, in August, 1843, in a letter to the Secretary of the United States Treasury. There was a vast deal to do, however, even in the advancement of the principles of electric telegraphy, as subsequent progress has proved, ere such an event was really possible; and Professor Faraday appears to have been not far wrong in predicting that on these principles, as then ascertained, it was very doubtful whether an Atlantic telegraph were really possible.

Towards the close of last year only, had the electrical element of wide-ocean telegraphy assumed its present phase. Science had then shown\* :—

That gutta-percha covered *submarine* wires do not transmit as simple insulated conductors, but that they have to be charged as Leyden jars, before they can transmit at all.

That, consequently, such wires transmit with a velocity that is in no way accordant to the movement of the electrical current in an unembarrassed way along simple conductors.

That magneto-electric currents travel more quickly along such wires, than simple voltaic currents.

That magneto-electric currents travel more quickly when in high energy than when in low, although voltaic currents of large intensity do not travel more quickly than voltaic currents of small intensity.

That the velocity of the transmission of signals along insulated submerged wires can be enormously increased, from the rate indeed of one in two seconds, to the rate of eight in a single second, by making each alternate signal with a current of different quality, positive following negative, and negative following positive.

That the diminution of the velocity of the transmission of a magneto-electric current in induction-embarrassed coated wires, is not in the inverse ratio of the squares of the distance traversed, but much more nearly in the ratio of simple arithmetical progression.

That several distinct waves of electricity may be travelling along different parts of a long

wire simultaneously, and within certain limits, without interference.

That large coated wires used beneath the water or the earth are worse conductors, so far as velocity of transmission is concerned, than small ones, and therefore are *not so well suited as small ones* for the purposes of submarine transmission of telegraphic signals; and,

That by the use of comparatively small coated wires, and of electro-magnetic induction-coils for the exciting agents, telegraphic signals can be transmitted through 2,000 miles with a speed amply sufficient for all commercial and economical purposes.

Upon this electrical basis the question of oceanic telegraphy was standing when the present year dawned.

In the working of the great telegraph, the chain of connections, so far as it has been linked together up to the present time, stands thus :—

A powerful voltaic current goes through a generating coil near at hand. The generating coil makes a temporary magnet. The magnet produces a transmission current in a secondary coil. The current crosses the Atlantic in the cable, and makes a temporary magnet on the farther side of the ocean. The temporary magnet works a permanent magnet hung on a pivot, so that it can traverse. The next link in the chain is this: there is a local short-circuit voltaic battery standing ready near the recording instrument, and this battery has its electrical flood-gates opened when the permanent magnet traverses one way, and shut when it traverses the other. When the flood gates are opened, the current from the local battery flows out, and prints the message it is desired to record. The perpetual maintenance batteries, double induction coils, and springless sensitive receiving instruments, designed for the work of the ocean telegraph, are most of them inventions for which patent rights are held by the company. The actual recording work of the telegraph will be performed by the ordinary instrument of Professor Morse, carefully adjusted in the workshop of the company.

In this recording instrument, a ribbon of paper is unrolled from a hollow cylinder or drum by a train of clock-work, and, as it is unrolled, a sharp style, magnetically directed, indents a series of dots or lines upon the paper. When the style is thrust down only for an instant as the paper is dragged along beneath, a dot is impressed. When it is kept down for a little more than an instant, a lengthened line or dash is left on the onward moving paper as a track. The style is thus magnetically controlled.

The "telegraphic plateau" is a very singular engineering feature in the Atlantic telegraphic project. It is a comparatively narrow band which has literally and actually been *laid down*, as it were on purpose, mainly by that great and celebrated engineer, the Gulf Stream, which has been, for thousands of years at least, at work in carrying northwards the *débris* of microscopic tropical shells, and dropping them into the yawning depths of the Atlantic Ocean at a certain parallel of latitude, and so constituting the telegraphic plateau which looks exactly like a raised railway-path of Titanic dimensions running across a country of tremendous ravines and rocky heights. The Gulf Stream, however, has no doubt had considerable assistance afforded it by the southward cold currents bearing mud-loaded icebergs: these would melt and drop their loads regularly in the same intermediate region. The contrast between the plateau and the awful yawning depths of the Atlantic Ocean south and north of its parallel, as shown in charts appended to the work from which we have been quoting, is a very striking and extraordinary one. This plateau has been found, by innumerable soundings, to be the only available or practicable route for an Atlantic telegraph

line, from its moderate depths as well as from its gradual descent and ascent, and its comparatively level course.

Excellent well adapted, as the beautiful and elaborate arrangements appear to be, for the facilitation, to the utmost possible extent, of the winged words of the modern Mercury, what will the general reader think when we tell him that the swiftest possible result of such operations is absolutely a slow process in comparison with a new one, of which modern science has just caught a glimpse? This new process, however, is not one that is likely by any means to supersede recent arrangements, at least to any extent: it would rather appear to be a timely aid, addition, and consummation merely of those ingenious processes which have made the telegraph what it now is. We have already noted the advent of this climax to electro-telegraphic progress. Steam—all-powerful and Protean steam—is the agent now about to mount the telegraph and "grease the lightning." Whether the special form in which it is proposed to apply the power of steam to the generation of the requisite electricity and to the transmission and recording of messages,—set up before hand, and stamped off, wholesale, by the recording telegraph,—be in all respects the matured and practicable one which it is considered to be, we cannot even yet assure our readers; but we can, at least, now give them a few more details as to the *modus operandi*.

The invention, then, which is to supersede the present *tedious* (!) processes, and work the telegraph by steam instead of by hand, is in general as follows :—

A series of gutta percha bands, about six inches wide and a quarter of an inch thick, are coiled on wheels or drums arranged for the purpose. These bands are studded down both sides with a single row of holes at short intervals apart. When a message is to be sent, the clerks wind off these bands, inserting in the holes small brass pins, which, according to their combinations in twos or threes (with blank holes between), represent certain words or letters. In this manner the message is, as it were, "set up" in the bands with great rapidity, and if the number of bands employed be sufficiently large—say as numerous as the compositors employed in a large printing office,—messages equal in length to five or six columns of a newspaper, for example, could be set up and ready for transmission in the course of a single hour! Of course this operation in no respect interferes with the telegraph wire itself, which continues free for use until the bands of messages are actually being despatched. The gutta-percha bands when full are removed to the instrument-room, a simple appliance preventing any derangement or falling out of the pins while being moved about. In the instrument-room, the bands are connected with ordinary steam machinery, by which they are drawn in regular order with the utmost rapidity between the charged poles of an electrical machine, in such a manner that, during the moment of each pin's passing, it forms clerical communication between the instrument and the telegraph, and a signal is transmitted to the other end of the wire, where the spark perforates a paper and records the message. The only limit to the rapidity of this operation is the rate at which the bands can be drawn, since the electrical contact of each pin, even for the 200th part of a second, is more than sufficient to transmit a word or signal from London and register it in America. As the message is recorded, say in America, with the same rapidity as that with which it is transmitted from London, a number of reading clerks, of course, will be requisite in order to translate it, by dividing it into small portions, and this they may do with almost as much facility as it has been sent.

The inventor of this new development of

\* Title, "The Electric Telegraph: a History of Preliminary Experimental Proceedings, and the Descriptive Account of the present State and Prospects of the Undertaking," published in July, 1857, by order of the Directors of the Company. London: Jarrold and Sons, 47, St. Paul's Churchyard.



electric telegraphy, as we have before noted, is Mr. Isham Baggs.

Whether the precise mode in which the company who are carrying out Mr. Baggs's invention mean to apply the power of steam to the telegraph, be the best possible, or the most practicable or advantageous mode or not really signifies little: the idea, as we have said, is an excellent one, and there cannot be a doubt but that it will very shortly be realized in some shape or other, whereby all its obvious advantages will be fully attained, and telegraphic messages be immensely cheapened and vastly multiplied, to the substantial benefit of the public no less than of the telegraphic companies; and, it is to be hoped, of the inventor himself and the company by whose enterprise the new development is being worked out into practice.

And now, reverting to the Atlantic telegraph, the application of steam power to which would be an immense advantage, let us say a few words on the present state and prospects of this grand and truly cosmical scheme.

When the cable broke in the Atlantic Ocean, after 400 miles of it had been paid out, the American steam-ship *Niagara*, and its British consort, the *Agamemnon*, deposited the bulk of the cable at the Keyham yard, belonging to Government, at Devonport; and there it will remain till next year, experiments meantime being made with it by Mr. Whitehouse, the electrician, which may assist in solving several curious electrical problems. Even the 400 miles of it lying in the Atlantic are being well watched night and day, and may shed some interesting light on the subject of terrestrial electro-magnetic currents, and other cosmical electric and magnetic phenomena.

Next year's endeavour to lay the line will be made with 800 additional miles of cable, or 3,000 miles in all to meet emergencies, and the expedition, including the *Niagara*, which, meantime, is being altered interiorly at New York, will sail at an earlier period of the year than before—most likely at the end of June or beginning of July, so that in case of any hitch occurring there may be ample time to repair it, and still leave August open for another effort. The cable will, of course, be the same in kind—in fact, it will be essentially the same cable as before. The two portions of this cable, placed in the two war-ships, it may be remembered, were, unfortunately, it was said, covered with wire spun in contrary spirals, so that the one portion would tend to untwist the other. Were one portion to twist at all with the other, this would certainly be the result; but no mere straight pull in the line of the cable, such as it is alone very likely to be exposed to, can well act so as to untwist either portion. The danger of kinking or fouling is itself a sufficient reason for the careful avoidance of any twisting action in paying out. It is now proposed to join the two portions in mid-ocean as was at first contemplated, the *Niagara* then proceeding eastward, and the *Agamemnon* westward. The deep sea fishermen, it seems, recommended a different course from either this or the previous one, namely, from west to east entirely, that is from Newfoundland to Ireland, in order to take advantage of the set of the Gulf Stream eastwards, instead of the contrary course westwards; and although that stream does not dip lower than seventy fathoms while the cable is to be laid far below that depth, it must be remembered that in laying it, both the ships and the cable will have the stream to cope with in the first place.

The paying-out apparatus is to be improved, so as to guard against the strain on the cable, caused either by the sudden pitching of the ship; or by the action of the brake-apparatus. Considering the anticipated freedom from pitching in the *Great Eastern*, or *Leviathan*, would not such a ship be an invaluable, though, doubtless, a costly adjunct in the laying of the Atlantic telegraph cable? There would be a peculiar fitness in the association of two such grand results of nineteenth-century progress.

We hear nothing of any means being intended to be applied for the salvation or recovery of the cable, should it after all be again broken in the deep ocean. Surely there can be no great or insurmountable difficulty here. We should like to know what fatal objection could be made

to either of the two suggestions we ourselves, for example, some time since made; namely—at intervals of a certain number of miles of the cable, as it run out, to affix a rope, attached to a buoy, so arranged as to float on the surface when the cable has reached the bottom, the rope being capable of lifting the end of the cable should it be broken. One or two only of these buoys and ropes might be requisite, if, as we also suggested, the cable were overrun by a ring attached to the rope; and in this case, indeed, those in the steamer or two required, under such circumstances, to follow in the wake of the ship containing the cable, would not need to lay down any buoy at all.

Many plans and suggestions for the safe deposit of the cable have been made since the attempt to lay it was temporarily frustrated by the untoward accident on board the *Niagara*, but on this subject we cannot here enter. We may, however, simply refer to a little tract "On Laying Telegraphic Cables in the Deep Sea," by a nautical and practical man, who appears to know what he is treating of,—namely, Master James Bodie, R.N.\* who was appointed to the *Agamemnon* when that ship was first prepared for the reception of the Atlantic cable, and had an opportunity of minutely noting all the arrangements and appliances for its safe deposition then made on board the ship. Master Bodie considers that light as the cable was comparatively to others, still it was unnecessarily heavy, and hence the velocity and the perpendicularity with which it rushed out; and that were the core covered with hemp rope in place of wire rope, except on the coasts, where anchors might get foul of it, it would be sufficiently strong, and would bear much more lifting power, so as to be more easily recovered from the deep sea. Mr. Bodie's tract contains a table, showing at what rate specific gravities descend in the ocean, deduced by himself, experimentally, from deep sea soundings, and which cannot but be a most useful aid in the settlement of the question of the safe deposit of the Atlantic telegraph in the ocean depths.

Very considerable progress is being made in filling up the telegraphic gaps, as we may call them, between this country and its Indian empire. The greatest gap is still the stretch between Bombay, or at least Kurrachee, and Suez, at the head of the Red Sea. No telegraph has as yet been laid down, either in the Red or the Arabian Sea, and this is mainly, though not entirely, what prevents our Indian telegraphic news from reaching us in less than from three weeks to a month. Steamers have still to cross the Arabian Sea and the Red Sea; and, although there are other gaps to be filled up, these are already of minor importance as causes of delay. The shortest route, however, would be by the Euphrates and the Persian Gulf. Malta is about to become a distinguished point in Indian telegraphic communication through Sardinia; and the Austrian Government have agreed to the laying of a submarine line from Ragusa, on the Adriatic, forking out of the Corfu and Malta cable to Candia, and thence to Alexandria, with a view to the extension of the line to India *via* Alexandria, and the Red Sea or the Persian Gulf, to Kurrachee and Bombay, which would be brought within fifteen days of London by this Austrian adjunct alone; and, were either the Red Sea line or the Euphrates line laid down, of course the telegraph communication between London and India would be instantaneous.

As the question is often put to us, how is the telegram conveyed from India to England, why is it that it does not come to us instantaneously, and how is it that we are dependant on foreign telegraphs for its conveyance; let us repeat, or rather re-state in another form, that at present the Indian news, after steaming up the Red Sea from India, and crossing the isthmus of Suez, is made up by our consul at Alexandria on its arrival from Suez (no telegraph report being as yet sent across the isthmus, although we believe there is a partial line running from Cairo). The summary of the news so made up at Alexandria is forwarded to Malta, and thence (till the cable already made be laid down between Cagliari and Malta) by Government steamer to Cagliari.

\* Harris, printer to her Majesty, Fore-street, Devonport.

Handed in to the telegraph-office there, it is forwarded to Spezzia and thence to Turin. Thence there are two telegraphic routes, one *via* Switzerland, the Rhine provinces, Belgium, and through the submarine cable from Ostend to London; the other *via* France to Paris, and thence (through the submarine cable) from Calais to London. A third route may also be employed, viz. from the Rhine Provinces to Amsterdam, and thence, *via* the Electric and International Telegraph Company's submarine wires, from Holland to London.

A line has been proposed to connect Alexandria, Malta, and Gibraltar, with England direct, but in the present state of the money market any further great extension of long submarine lines is not at all probable. At present, therefore, as will be seen, in telegraphic communication England is quite dependant on continental powers.

As regards internal communication in India itself, we may add, there are already 5,000 miles of telegraph in the interior, and measures will be taken to insure uniformity of design and management throughout the whole range of line from Calcutta, Madras, and Bombay to Great Britain. In furtherance of this, a coast line between Calcutta and Madras is in vigorous prosecution.

#### FIR, DEAL, AND HOUSE PAINTING.

AN ATTEMPT TO DETERMINE THE PERIODS IN ENGLAND WHEN THESE WERE FIRST INTRODUCED, WITH REMARKS ON THE PROCESSES OF THE LATTER.\*

It has been generally supposed that the timber seen in old buildings is almost without exception oak; but it will be found on investigation, that many other kinds of wood were used, a knowledge of which, tested as they have thus been in trying positions, would be highly serviceable to the architect and to the builder. From records quoted in Mr. Turner's "Domestic Architecture of England,"† it appears that in 1253, temp. Henry III. the bailiffs of Southampton were commanded to buy 200 Norway boards of fir to be used at Winchester for wainscot; that in 1255, 1,000 Norway boards were purchased for wainscoting certain rooms in Windsor Castle, and that a house of deal was to be made, running on six wheels and roofed with lead. The word used, "*sapo* or *sappo*," has been translated "deal;" this latter is stated to be derived from the Dutch, *deelen*, or German, *dielen*, "firwood," which would perhaps be the better translation of the word "*sapo*."‡ Turner gives his opinion that "the wood ordinarily used was fir, possibly because it was cheaper and more easily worked than oak," and that "Norway planks were largely imported into this country from an early period of the thirteenth century, and perhaps, although it is not quite so clear, at a still earlier time." His authority for these remarks appears to me very slight; but he has in his favour the fact that treaties "for the benefit of trade" were made by Henry III. with one or two of the kings of Norway; the use of the timber, however, would appear (from these records) to have been confined to the royal works. Deal boards bought for doors and windows, are mentioned between 1272 and 1307. One of the halls appropriated for the royal seat at the coronation of Edward II. (1307), was ordered to be covered with boards "*de sapo*." The wardrobe accounts of Edward IV. (1480), mention coffins of *fyrre* for the carriage of the king's books to Eltham.

The above extracts show that fir timber was imported at that early period; and omitting the last record, we must now pass over an interval of about 200 years to the next date, for the first statement I have been able to find of the actual importation of timber, which is as late as 1517, temp. Henry VIII. when the Dutch in particular were accused of bringing over iron, timber, and leather, ready manufactured. During that monarch's reign the scarcity of timber began to be experienced, and several statutes were passed for fixing the price of barrels; requiring the importation of clap-boards for their manufacture; and for the preservation of the forests of England, but excluding the counties where iron-works had been carried on from very ancient times. Queen Elizabeth (1558-1603) having reduced the forests still further, passed subsequent Acts for their preservation. Mr. Clayton, in his work on the ancient timber edifices of

\* Read by Mr. Wyatt Papworth, at the Ordinary General Meeting of the Royal Institute of British Architects, on the 2nd inst, as already mentioned.

† The omission in this work of information as to the exact kind of wood used in the different buildings is the more to be regretted, as the author of the second volume states that he had visited every place he described.

‡ French, *sapin*.



the western part of England, states that the timber buildings of England of this period, that of the sixteenth century) were invariably constructed of oak, of extreme durability; and Harrison (1573), the often quoted writer in the reign of Elizabeth, says,—"The walls of our houses on the inner sides are either hung with tapestry, arras works, or painted cloths—or else they are sheathed with oak of our owne, or wainscot brought hither out of the East countries;" and in another place, "in times past, men were contented to dwell in houses buylded of sellow, willow, plum-tree, hard beame, and elme, so that the use of oak was in a manner dedicated unto churches, religious houses, princes' palaces, noblemen's lodgings and navigation; but now all these are rejected, and nothing but oke nuie whit regarded." It will be observed that deal is not mentioned for building purposes. During the last years of Elizabeth's reign, cottagers and farmers' houses were building in all directions, and in London the progress was likened to an inundation. Large quantities of timber were thus needed, as brick had not yet been adopted for general use.

Although without any historical record of the fact, it is about this period (1553-1608), and to the above-named causes, that I should attribute the general introduction of foreign timber as an article of commerce; as in 1553 (1st of Mary) the English had discovered Archangel, and in 1560 commenced trading to Narva, then belonging to Sweden. The fitness of fir, besides other woods for building, is set forth by an English writer in 1586, seventeen years before the death of Elizabeth:—"Fir timber is meet for divers workes, and greatly esteemed for his height and bignesse, whereof are made the ship masts and pillars for houses, for it is very strong and able to abide great forces. It is used also in building, for great gates and door-posts: in fine, good for any building within, but not so well enduring without doores, and very soon set a-fire. The firre, the poplar, the ash, and the elme are meet for the inner parts of the house, but they serve not so well in the weather as the oke doth. The best to bear weight is the fir and the larch, which, howsoever you lay them, will neither bend nor break, and never faile till wormes consume them. Ash for thin borde; the best to clean, the firre, the poplar, and the beech." In or about 1603, Sir Walter Raleigh presented to James I. some observations on trade and commerce, showing how the Dutch had engrossed the transport of the produce of other countries, and stating that "the exceeding groves of woods were in the East Kingdoms, but the huge piles of wainscot, clap-board, fir, deal, masts, and timber, is in the Low Countries, where none grow, wherewith they served themselves and other parts, and this kingdom, with those commodities." From other accounts it appears that for about seventy years a very considerable trade had been carried on with Russia—Archangel, it will be remembered, was discovered by the English in 1553), and that down to about the year 1590 a large number of ships sailed annually to that country, but in 1600 only four had been sent out, and in 1609 only two or three; whereas the Russian trade of the Dutch employed from thirty to forty ships each as large as two of the English, and all chiefly laden with English goods. Though the above shows the extent of the trading, yet a pamphlet, published about fifty years later, in 1662, whilst describing the produce of Russia, mentions oak as the only timber exported. By the year 1688 Germany, Prussia, and Norway, all sent timber and deal boards. In 1662, Charles II. interdicted the importation from the Netherlands and Germany of deal boards, fir, timber, and other articles, upon any pretence whatever.

Besides a panel, to which I shall refer presently, the date of which is somewhat uncertain, the earliest instance of the actual use of deal I have been able to find, is in the description of Wimbeldon Hall, erected in 1558 by Sir Thomas Cecil. This building became about 1640, the property of Queen Henrietta Maria, and was surveyed by order of the Parliament, in 1649. The accounts do not state whether any repairs were made in the sixty years between the date of its erection and the survey. If the deal, therefore, which was introduced so largely in the floor boards and wainscoting was not in the original erection, we must infer that the house was put into repair or modernised near the middle of the seventeenth century, when it was prepared for the queen; I am in favour of the deal having been used in the original erection.

The account of Wimbeldon Hall extends over fifty pages of the *Archæologia*, and describes how each room was paved, lighted, and ceiled; whether wainscoted, coloured, or plastered; what fixtures remained the cin; concluding with the state and extent of the gardens and buildings, the park, and erections belonging to the estate. The use of deal for floor boards, wainscoting, wall linings, presses, &c. frequently occurs in the account, which time will not permit me to give at length. In the basement was a dry larder, having a press of deal wainscot. Among the exterior

buildings a pheasant garden is described, severed from the park by a pale of deal boards, 10 feet high. The land of Richmond Palace is likewise described as part fenced with brick, and part with deal boards.

Another early instance may be obtained by inference, in Braudenburgh House, Hammersmith, erected about the beginning of Charles I.'s reign (say 1625), by Sir Nicholas Crisp, the materials of which were sold by auction in 1822, the dry rot having got into the timbers (Falkener's *Hammersmith*, edit. 1839). Sir Bulstrode Whitelocke, ambassador to Sweden in the time of Cromwell, on his return in 1654, brought a cargo of deal boards, which he mentions in his journal to have been used at Pawley Court for new flooring his hall, and for wainscoting it.

Respecting the asserted practice of "painting" during the thirteenth century, Turner says a few instances do occur of directions to paint the wood-work, but in a note he adds that the chapel built by Henry III. (1216-72) at Windsor, had a wooden roof formed and coloured to imitate one of stone at Lichfield, and that wooden and stone posts or piers and arches were painted marble colour, as were those of the halls of Guildford and Ludgershall. During this century, the ordinary custom was to decorate in paint or colour the wainscoting with patterns or subjects taken from sacred or profane history. Green was the favourite colour, very frequently starred with gold, with borders of a different pattern, male and female heads, &c. This wainscoting being generally only 5 feet or 6 feet high, the wall or plaster above it was painted in fresco or in water, to represent some history, or a curtain. The Queen's chamber, at the Tower, was to have the walls whitewashed and pointed, and within those paintings painted flowers; the next year the same chamber was to be thoroughly whitened internally and newly painted with roses; also the King's own chamber was to be entirely whitewashed. But this was not confined to internal work, for in the following year the king directs that water-pipes should be put up to the great tower, so that the walls of the said tower, which has been newly whitewashed, might be in nowise injured by the dropping of rain water, nor be easily weakened. Even the chapel of St. Catherine, in Nottingham Castle, was to be whitewashed on every side, and pointed lineally: directions are also given to whitewash within and without the King's chapel, the Queen's chapel and chamber, and the Queen's great wardrobe, all at Guildford, where the hall also was whitewashed. Whitewashing would appear to have been then almost a royal luxury; (though not wholly so, for evidence is found that during the thirteenth and fourteenth centuries the citizens of London not only whitewashed their walls, but were compelled by the magistrates to do the same to the thatch of the roofing, as a precaution against fire. White lead and oil, with fine and inferior varnishes, were also extensively employed in this period for the decorations. Turner, in support of external painting, states that the habitable buildings being of timber, it would require painting in some way to be preserved from the weather, for although park palings will stand for almost any length of time, yet carved woodwork, and even plain timber when mixed with plaster, require painting. He appears to have formed this opinion upon the present mode in Lancashire and Cheshire, of painting (colouring?) the timbers black and the interstices white. Clayton says, "it would seem probable, from the appearance of the timbers in many of these buildings (the town-halls of the sixteenth century) that their surfaces were originally protected by a description of paint, of a rich brown colour; it is, however, extremely uncertain whether the practice of blackening them, as usually done in the present day, can be traced to ancient origin. The following extract from a record, dated 1574, will remove any doubt on the point. The plastering and whitening the forefront of my Mr. his house in Coleman-street, and the court, with the blacking of the timber work, 42s. 6d."

The extensive employment of tapestry in the fourteenth and fifteenth centuries would appear to have allowed the whitewasher to rest, except for the ceilings, which were "white lined" as usual; a few walls, however, were white lined even in Elizabeth's reign; but then they were decorated with poesies and moral proverbs on fantastic labels, of which Luckingfield furnishes so profuse an example. At Hardwick Hall, 1750, the walls of the state room are divided at about half the height by a stringing, the upper part filled with landscapes, figures and animals relieved in plaster, and painted "all proper" on a white ground; the lower division hung with tapestry, and the oak panels of the wainscot of one of the rooms are all marked in gold with the Stafford knot, the cognizance of that family. The survey already mentioned of Wimbeldon Hall in 1649, states that the oak wainscot was varnished green, with gold stars, crosses, &c.; or coloured with "hvor color" and varnished; or varnished white, filleted with green; and it is interesting to notice that from the absence of all description to the contrary, the deal so

much employed may be supposed to have been left plain. The "knots" in the garden "are compassed about on three sides thereof with very handsome rails, piked with spired posts, in every corner and angle, all of wood, varnished with white, which very much adorns and set forth the garden." Oil painting is thus not noticed.

As an illustration of the use of deal in the reign of Elizabeth, and also of this mode of decoration, Mr. Reynolds Rowe, of Cambridge, has forwarded a panel of fir: it originally had a ground-work of vermillion, in the centre of which was a pattern laid on in gold of a good thickness. This panel had formerly belonged to Swansey Manor House, in Cambridgeshire, temp. Elizabeth, which still contains some of the same kind of work, probably under the coat of white paint of a later period.

In connection with this period reference may be made to a small octavo volume, by Stephen Primatt, published in 1667, the year following the Fire of London, and evidently intended as a guide to builders. Describing the finishing of the various classes of houses illustrated; he specifies that the walls of each floor are to be "plastered and sized;" the partitions to be "lath, plaster and rendered and sized." Painter's work is described "for a fair stone colour in paint for windows, doors, rails and banisters for staircases, shop-windows and modillions is worth 12d. per yard, being coloured over thrice. For a timber colour in oil, over doors and windows, 9d. per yard. For a door painted on one side with a stone colour, 12d. a yard, and for a light of a window, 6d.; for a lead colour in oil, 9d. or 10d. a yard. Painter's work of ordinary lights of windows in oil, at 6d. per yard, or 3d. per light. For painting the best cucumber or blue colour in oil, 1s. 6d. per yard;" this is the only expensive colour mentioned, and seems to indicate the original paint for metal-work. "Whitewashing with size" is given as worth 2d. per yard.

In 1671 it was agreed that the wainscot in the Hall of the Carpenters' Company should "be handsomely painted, and the walls above the wainscot on the south side hung with painted cloth of some neat painting-work suitable to the front side." A French traveller in England in 1672, remarks that "the houses of Canterbury are well built and painted after the Dutch fashion." For many years after 1700, the following description from a work of the period will convey some idea of the extent of painting practised.

"Out-door painting for doors, shop-windows, window-frames, pediments, architraves, friezes, and cornices, and all other timber-work exposed to the weather, ought at first setting up to be primed with Spanish brown, Spanish white, and red lead (about a fifth part) to make the other two colours dry, ground in linseed oil; then again with the same colour, only whiter, and, lastly, with fair white made of lead, and about a fifth part in quantity (not weight) of Spanish white. "Wainscot colour," "white colour," and "walnut colour" are enumerated; also "ordinary branched painting" and "plain japan, either black or white." On considering this recital of painter's work I have thought that these, wainscot and walnut colours, were used for the purpose of making woodwork resemble those woods. An interesting account has lately been published of a lady of rank, who, in 1612 or 1613 appears to have entirely changed the fashion of the arrangements of houses in France, and to have been the first who painted rooms in any other colour than red or tawny. The next and last item in the description is "whiting and colouring on plasterer's work." Here I would request your attention to the continued use of "colour" (distemper) for interior work, down to such a late period (1700), a fact which I conceive to account for the extensive use made of it in our churches. It is clear that from about 1700, oil paint became a disguise of materials, and we know from his own description that the interior of St. Paul's Cathedral was painted under Sir Christopher Wren's direction. In a work of 1703, the contrivance of closets in most rooms, and painted wainscot are mentioned as two great improvements. Perhaps the first intimation of oil paint being used to a large extent internally, is in a "Compendium" of 1721. It states that the taking of the dimensions for painters' works within doors, is the same with that of the joiners, by girtings about the mouldings and members of cornices, &c.; but the painter never requires work once, twice, or thrice primed or coloured over. Wood, in his history of Bath, says "that about 1727, if the walls of any of the rooms were covered with wainscot, it was with such as was mean and never painted," as the new buildings advanced, the rooms were all wainscoted and painted in a costly and handsome manner.

Ware, in 1767, writes that "fir, as it is cheap and works easy, since the use of paint has become so frequent, has in a manner superseded all other kinds." In the descriptions of buildings given at the end of his work, he specifies that the walls are to be rendered



and fronted for hangings, and paints all the wainscoted rooms a "common or stone colour" three times in oil. In 1775 a large mansion in the country is stated to have paper to the ground-floor rooms, whilst the walls of the bed-rooms, parlors, and basement were lime-whited. And at the beginning of the present century, says a later writer, the houses of traders and middle-classes, particularly in the provinces, were chiefly adorned with simple wastings of rose pink, whitening, and size. A friend, now in his eighty-fifth year, remembers the living to walls being left unpainted, and much of the woodwork even in the rooms connected with the Houses of Parliament were also of plain deal. The plastered walls of houses were coloured, the sashes painted white, the doors, skirtings, and other parts generally black. Several present can no doubt recall many houses in the country still exhibiting this ancient style of ornamentation. Thus we may conclude that house painting, or, as it has been very descriptively termed, the "three coats and flat work," did not come into fashion until about the period of William and Mary and Anne, up to which time either colouring by distemper or by whitewash had been in vogue for plasterwork, leaving inside woodwork more or less untouched.\*

#### CLOCKS AND LOCKS.

UNDER the title of "Clocks and Locks," Mr. Denison has issued a little book, the first part of which is a new and enlarged edition of a reprint from the eighth edition of the *Encyclopædia Britannica*, and a kind of third edition of one of Weale's series of Treatises; and the second part is also a reprint from the *Encyclopædia*, and was noticed by us some time since, when it appeared in the form of a lecture by Mr. Denison. Much of the first part is occupied with the author's history of the great Westminster clock, of which he was the designer, and with an account of his own improvements in clocks.† The treatise contains some very useful information and guidance as to church and turret clocks and dials. We may quote a few of his remarks on the form of dials:—

"The established form of dial for turret clocks is a sheet of copper made convex, to preserve its shape; and this is just the worst form which human ingenuity could have contrived for it. For, in the first place, the minute-hand, being necessarily outside of the hour hand, is thrown still farther off the minutes to which it has to point by the convexity of the dial; and consequently, when it is in any position except nearly vertical, it is impossible to see accurately where it is pointing; and if it is bent enough to avoid this effect of *parallax*, it looks very ill. Secondly, a convex dial at a considerable height from the ground looks even more convex than it really is, because the lines of sight from the middle and the top of the dial make a smaller angle with the eye than the lines from the middle and the bottom, in proportion to the degree of convexity. Obvious as is the remedy for these defects, by simply making the dial concave instead of convex, it has, we believe, never been adopted until Mr. Dent introduced this improvement also, at Mr. Denison's suggestion, in some clocks for the Great Northern Railway, at Doncaster, and on the platform at the King's-cross station. As convex dials look more curved than they are, these look less curved than they are, and, in fact, might easily be taken for flat ones, though the curvature is exactly the same as usual. Old convex dials are easily altered to concave, and the improvement is very striking where it has been done. There is no reason why the same form should not be adopted in stone, cement, slate, or cast iron, in which materials dials are sometimes, and properly enough, made with the middle part counter-sunk for the hour hand, so that the minute-hand may go close to the figures and avoid *parallax*. When dials are large, copper, or even iron or slate, is quite a useless expense, if the stonework is moderately smooth, as most kinds of stone take and retain paint very well, and the gilding will stand upon it better than it often does on copper or iron. The figures are generally made much too large. People have a pattern-dial painted; and if the figures are not as large as one-third of the radius, and therefore occupying, with the minutes, about two-thirds of the whole area of the dial, they fancy they are not; the more the dial is occupied by the figures, the less distinct they are, and the more difficult it is to distinguish the position of the hands, which is what people really want to see, and not to read the figures, which might very well be replaced by twelve large spots. There is a clock with a dial of this kind in the London Athenæum; and though it is constantly referred to as a regulator of watches, nobody has

ever complained of the want of figures, which, after all, do not mean what they say, as you read 'twenty minutes to' something, when the minute-hand points to VIII." The rule which has been adopted, after various experiments, as the best for the proportions of the dial, is this:—Divide the radius into three, and leave the inner two-thirds clear and flat, and of some colour forming a strong contrast to the colour of the hands, black or dark blue if they are gilt, and white if they are black. The figures should occupy the next two-thirds of the remaining third, and the minutes be set in the remainder, near the edge, and with every fifth minute more strongly marked than the rest; and there should not be a rim round the dial, as there generally is, of the same colour or gilding as the figures. The worst kind of dial of all are the things called skeleton dials, which either have no middle except the stonework, forming no contrast to the hands (to which state the authorities of Trinity College, Cambridge, have lately altered their well-known double-striking clock, put up by the famous Dr. Bentley, striking, as it used to be said, once for Trinity and once for his former college, St. John's, which had no clock), or else taking special trouble to perplex the spectator by filling up the middle with radiating bars. Where a dial cannot be put without interfering with the architecture, it is much better to have none, as is the case in many cathedrals and large churches, leaving the information to be given by the striking of the hours and quarters. This also will save something, perhaps a good deal, in the size and cost of the clock; and if it is one without a train remontoire or gravity escapement, will enable it to go better. The size of public dials is often very inadequate to their height and the distance at which they are intended to be seen. They ought to be at least 1 foot in diameter, for every 10 feet of height above the ground, and in many cases more, whenever the dial will be seen far off; and this rule ought to be enforced on architects, as they are often not aware of it till too late, and indeed seldom make proper provisions for the clock or the weights in building a tower.

As to lighting them, he says:—

"The art of illuminating dials cannot be said to be in a satisfactory state. Where there happens to be, as there seldom is, a projecting roof at some little distance below the dial, it may be illuminated by reflection, like that at the Horse Guards—about the only merit which that superstitiously-venerated and bad clock has; and perhaps the same thing might be done by movable lamp reflectors, like those put before shop windows at night, to be turned back against the wall during the day; but such an arrangement would be expensive in working and attendance, even if it could be conveniently arranged. It has also been proposed to sink the dial within the wall, and illuminate it by jets of gas pointing inwards from a kind of projecting rim, like what is called in church windows a 'hood-moulding,' carried all round. But it is a great objection to sunk dials, even of less depth than would be required here, that they do not receive light enough by day, and do not get their faces washed with the rain. The common mode of illumination is by making the dials either entirely, or all except the figures and minutes and a ring to carry them, of glass, either ground or lined in the inside with linen (paint loses its colour from the gas). The gas is kept always alight, but the clock is made to turn it nearly off and full on at the proper times, by a twenty-four-hour wheel, with pins set in it by hand as the length of the day varies. Self-acting apparatus has been applied, but it is somewhat complicated, and an unnecessary expense. But these dials always look very ill by day; and it seems often to be forgotten that dials are wanted much more by day than by night; and also, that the annual expense of lighting three or four dials far exceeds the interest of the entire cost of any ordinary clock. White opaque glass with black figures has lately been introduced, and it is very superior to the common method. It is used in the great Westminster clock dials. It is somewhat of an objection to illuminating large dials from the inside, that it makes it impossible to counterpoise the hands outside, (except with very slight and therefore very heavy counterpoises. And if hands are only counterpoised inside, there is no counterpoise at all to the force of the wind, which is then constantly tending to loosen them on the arbor, and that tendency is aggravated by the hand itself pressing on the arbor one way as it ascends, and the other as it descends; and if a large hand once gets in the smallest degree loose, it becomes rapidly worse by the constant shaking. It is mentioned in Reid's book, that the minute-hand of St. Paul's cathedral, which is above 8 feet long, used to fall over above a minute as it passed from the left to the right side of XII, before it was counterpoised

outside. In the conditions to be followed in the Westminster clock it was expressly required that 'the hands be counterpoised externally, for wind as well as weight.' The long hand should be straight and plain, to distinguish it as much as possible from the hour hand, which should end in a 'heart' or swell. Many clockmakers and architects, on the contrary, seem to aim at making the hands as like each other as they can; and it is not uncommon to see even the counterpoises gilt, probably with the same object of producing apparent symmetry and real confusion."

In respect to the Westminster clock, Mr. Denison states that the final estimate of Mr. Dent for its construction was 1,800*l*. The weight of the great bell was increased from fourteen to sixteen tons by an accidental deviation of the founders from Mr. Denison's design, and the composition of the metal, as prescribed by him, was somewhat different from what was usual, containing 7 of tin to 22 of copper, instead of 1 of tin to 4 of copper. The density and strength of the metal were thus greater than of any known bell metal, and the bell altogether more powerful than had been expected by any body. Consequently, all previous calculations as to the proper weight of the hammer had turned out wrong. The bell went on increasing in sound as the hammer was increased, up to 12 cwt. or about 1-25th of the weight of the bell. Mr. Vulliamy had assumed that the weight of the hammer ought to be from the 200th to the 160th part of the bell's weight, and Mr. Denison himself assumed 4 to 5 cwt. or about 1-60th of the bell's weight, to be the proper proportion. In respect to the striking of the hours and quarters, Mr. Denison says,—

"It should be understood by the public that the first, second, and third quarters begin to strike at the right time, but the fourth quarter begins half a minute before the right time, to get out of the way of the hours, and act as a warning to people to get out their watches for the first blow of the hour, which is intended to be always exact within a second of Greenwich time."

The Londoners are not destined to astonish country cousins with the 7-inch jumps of the long hand, Mr. Denison considering it not safe to let such heavy hands so move. The clock is to wind itself up by hydraulic power, applied from a cistern, on the hydraulic crane principle, but capable of being set aside and substituted by hand power, if out of order. The striking part only is to be wound up by water on this self-acting principle.

In a postscript to part first, Mr. Denison, in his trenchant style, makes a somewhat serious onslaught upon Mr. Cole, of the Government Department of Science and Art, as to the procurement of a clock for the Brompton Museum. First of all, the author states, Mr. Cole appeared desirous that Mr. Dent should make one as a model of the great Westminster clock, and regardless of cost; but soon after, he continues, it was suggested to Mr. Dent by Mr. Cole that "it might be worth his while to put up a clock at that place at a low price, for the sake of the advertisement"; and if he would not, there was somebody else who would." Mr. Dent declined to do business on such terms, and accordingly Mr. Cole, it is added, ordered the clock of another maker, of whom it is said that he was not even among the fifty-one makers rewarded or publicly mentioned by the Exhibition jury of 1851; "though, indeed, it was proposed, in joke, to give him a special medal for his clocks—not on account of their goodness." The remarks which follow do not seem justified, even by the statements on which they are based.

In regard to the 2nd part of Mr. Denison's volume, we have already, as remarked, given the substance; and we shall therefore confine ourselves mainly to some additional matter not contained in the lecture therein quoted.

In speaking of certain American locks, the author says,—

"The casting of both these American locks—which have all their heavy parts of cast iron,—is vastly superior to any iron casting we have ever seen made in England; and on the whole, the United States are evidently far ahead of us in the manufacture of both good and cheap locks; and all because our people are too stupid to substitute machinery for hand-work, and because (as Mr. Hobbs said in the discussion at the Society of Arts, on the establishment lately set up by the Government for the manufacture of arms at Woolwich), "if the English workmen can do anything to make a machine go wrong, they will; whereas, in America, they will do all they can to help it." In the same way the American and French manufacturers of clocks have driven our makers both of common clocks and of ornamental clocks out of our own market; and any enterprising manufacturer might very soon finish the business by making both church and house clocks at half the price which is paid for the old-fashioned hand-work of Clerkenwell, and of far better quality."

\* To be continued.

† Clocks and Locks. From the *Encyclopædia Britannica*, Second Edition. With a fine account of the Great Clock at Westminster. By Edmund Beckett Denison, M.A. Q.C. Edinburgh: Adam and Charles Black, 1857.

\* In a street near the Builder office there is a clock outside a baker's shop with the figure of a bat merely at each of the usual figure-points, yet the time is indicated as clearly as usual.



It is necessary, Mr. Denison justly remarks, to caution the public against *shop-window* locks in general, unless it be known or evident that those sold at a moderate price within are the same,—which, we dare say, it may be pretty decisively added, they seldom or never are.

Since 1851, says the author, Mr. Chubb and some other makers of tumbler locks, have adopted false notches in all their best locks, together with revolving "curtains," and these provisions, he adds, "undoubtedly make the locks much more difficult to pick; in fact, so difficult, and requiring such nicely of instruments and manipulation, that they may be considered practically safe, except under extraordinary circumstances. But then it must be remembered that all the great robberies, of which there are several every year, do present extraordinary circumstances, and that they are never attempted except where the temptation has been made great, by the thieves seeing that they had unexpected facilities offered them. It is, therefore, by no means safe to assume that a lock will never be picked, merely because it would take a first-rate hand a long time to do it. The process need not be continuous. A good hand will do part of his work, and measure it, or mark it off upon his false key one day, and more another, until it is all done, and his key ready for action at the first convenient opportunity. Recent experience has shown that your own officers, clerks, and servants, are the people from whom you have most to apprehend, and they are just the people who have the most time and opportunity to perform their key-making operations undisturbed."

As to the revolving curtains here alluded to, we may remark, that if all of them be as liable to go wrong, even in spite of being directly under the maker's eye, as one or two of which we have had some experience, they must be a general nuisance. In the cases referred to the revolving curtain was apt, from the mere shutting of the house-door on which it was placed, to be shaken aside or out of position, sufficiently to prevent even the truekey from getting into the lock till picked at by the end of a pencil, or some other implement with a sharp point. Bad construction, however, may be the cause of annoyance in such instances.

Almost the only lock (besides his own unpateented one) of which Mr. Denison may be said to speak in anything like strong terms of its general merits, as a cheap and good lock for common use, is one patented since the publication of his article in the "Encyclopædia Britannica." He calls it "Tucker's last patent," and speaks of several forms of Tucker's new inventions, besides the ordinary door-lock,—such as the latch or spring door-lock, and the desk, sliding door, or piano-lock,—of all of which he says, "these are decidedly the best, cheap locks of any that have yet been brought out."

As we before observed, while treating of locks and keys, the majority of the locks used in our ordinary dwelling-houses are of the most trumpery description, being usually out of order within the first six months; so that a good serviceable lock is still much wanted; but if buyers of houses and their occupiers would only resolve not to put up with such locks as are still too often used, and prove a constant source of annoyance and expense, we might surely now hope to see, in this respect, a speedy and complete reform.

#### THE BURIAL BOARD OF ST. MARYLEBONE AND THE CONTRACTORS.

It will be remembered, that after the completion of the Marylebone Cemetery at Finchley, the works were found to be defective in a remarkable manner, and that certain allegations were made, both against the contractors and the architects. An action was brought against the contractors' sureties, Messrs. Thos. Culverhouse, John Nicholson, and John Culverhouse, who, in turn, brought an action against the Board. Ultimately, all the matters in dispute were referred to the arbitration of Mr. T. D. Archibald, barrister-at-law. Mr. Archibald has recently made his award, and has assessed the damages sustained by the Board at 1,827*l.* which Messrs. Culverhouse and Nicholson are to pay, together with all costs of the reference. For the counter action, it was decided that they had no grounds, and they were to pay all costs of the reference in that respect also.

As a stormy adjourned meeting of ratepayers, held on the 2nd inst. to consider this award, called originally with the view of relieving the sureties to some extent, some extracts from the evidence of witnesses examined before the arbitrator were read by Mr. Gliddon, and, for the sake of warning, must not pass unnoticed:—

J. Brown, foreman to the contractors, said: The chief contractor told me to take up the 8-inch pipes (contracted for) which I had laid down, and put 6-inch pipes down instead. The clerk of the works was not there, he was gone to dinner, and I took them up immediately. My business was to lay down pipes. The master told me on

several occasions that I put them too closely in the sockets. I was not to put them close into the sockets nor to connect them, as he said it would make more pipes to put them into the sockets. In 5 feet paths I had an order to fill up the ground without putting any pipes in. Master told me to open the ground, fill it up again, and ram it down. There were no pipes there at all. Master told me he would have it done so, and I should have my money—that he was my master and his partner's too. His partner was in the country, and the master said he was going to take the clerk of the works away, and that I knew what I was about. He told me to fill up some trenches that were open, and that I should be paid all the same. I said, "We shall all get transported, and I should never get another job if this were found out." I was told to take the men out of the sand-pit if I saw any of the commissioners coming, and I did so. He said if any gentlemen came in committee, and I saw a hat waving, I was to take the men out of the sand-pit. I understood that if it was known the sand was got on the ground the contractors would lose 200*l.* or 300*l.* I received orders from the master to give a ticket to men who brought the gravel, and I had to give an account to the clerk of the works of what came in and what was used, and I was forced to put more down than came in.

Charles Robinson, a workman: I recollect having conversation with the chief contractor. He said to me and Subalterns, "Now there is no one here you do not want any mortar, put the bricks in dry. Two 12 feet lengths were done in that way. It was done so by both of us. We said it was not proper to do so, and he said he was my master."

Thomas Chapman, another workman: The contractor said (in the middle of the day), "You stop after all the men are gone." I was to fill in the ground without pipes. He said, "Now there is no one here you do not want any mortar, put the bricks in dry. Two 12 feet lengths were done in that way. It was done so by both of us. We said it was not proper to do so, and he said he was my master."

It was contended by some, that the contractors having been paid on the certificate of the architect, the sureties ought to have been considered relieved from responsibility. One of the speakers, Mr. Tripp, who maintained that the architects were liable to the Board, in giving what he considered analogous cases, said, with respect to the new cemetery for Paddington, that the drainage of that ground was found, after the works were completed, to be much in the same state as the cemetery of Marylebone, and the architect, a highly respectable man, and a prisoner of that parish, had at once admitted his responsibility, and he had had the works perfected at a cost to himself of 700*l.*

After various motions, it was resolved, amidst great confusion,—“That as any remission of the amount the sureties are bound for would affect the interests of the ratepayers at large, as well as the efficiency of good local government, this meeting is of opinion that it will be necessary to take the sense of the ratepayers at large by calling a public meeting.”

#### THE CRYSTAL PALACE.

DR. JOHNSON.

ADMIRERS of Johnson and our antiquarian readers will be gratified to know that the Johnson relics, from Inner Temple-lane, which were sold a few weeks since as old materials, at, in fact, a nominal price (we believe under 20*l.*), have been secured for the Crystal Palace Company, and are now, after being carefully marked under the inspection of an experienced architect, housed in the north wing of the building, ready for re-erection in the grounds of the palace. It is understood that the Honourable the Benchers of the society will present to the company the carved hood from the doorway, and the staircase which in the first instance they reserved from the sale. Fitted up with photographs of the building in its last condition, original or photographic portraits from Sir Joshua Reynolds's numerous paintings of Johnson's associates and contemporaries, autographs of himself and other men of eminence of the age, and other relics, it will form a nucleus for a highly interesting record of the last century, and its great men in art and literature.

We trust, therefore, ere long, to witness an erection, with its adjuncts, which, even in our own age and certainly in the eyes of posterity, will stand, perhaps, only second in interest (diminished to some extent, of course, by its changed locality) to Shakespeare's house at Stratford-upon-Avon, now the property of the nation.

#### THE NEW DOM OF BERLIN.

THE recent malady of the king has caused some delay in the progress of this great work; however, it is now proceeding again. It will be erected close to the Stadt-Schloss, over the residence of Frederick the Great. M. Heydt, the Minister of Finance, has been entrusted with the chief leadership of the building. The foundations of the choir are laid in the bed of the river Spree. An especial arrangement is made for the convenience of Cornelius: as his age does not admit of delay, the arrangements are so managed that M. de Cornelius will be able to paint in the crypt, undisturbed by the construction of the building being proceeded with above him.

#### DESIGNS FOR RESIDENCES IN THE UNITED STATES.

WE mentioned not long ago the appearance of a useful volume, by Mr. Calvert Vaux, containing designs for villas and cottages, prepared for execution, and many of them executed, in the United States,\* and we now return to the volume according to promise, in order to give a fuller notion of its contents, and to repeat that it deserves a sale as well in this country as in America. The book contains 300 wood engravings of views, plans, and details, and some very sensible letter-press. Mr. Vaux, who will be remembered by many of our London readers, when he went to America became the partner of Mr. Downing, whose useful career was brought to a close by the burning of the *Henry Clay* steamer. "*Il bello e il buono*," the motto on Mr. Downing's seal, was also the pursuit of his life. Some of the designs in the book were produced under their joint supervision, while some few belonged to a time when Mr. F. C. Withers was in partnership with the author. The value of art in building, Mr. Vaux says, is but beginning to be recognized in America:—

"A very transient visit into any part of the country shows that most of the villas and cottages are erected without regard to artistic propriety, and at considerable loss to their owners, from the useless outlay incurred by adopting ill-considered plans; and the subject, as well as the majority of the houses, would be improved by a little more ventilation. Square boxes, small and large, are springing up in every direction, constructed without any attempt at proportion, or the slightest apparent desire to make them agreeable objects in the landscape. These tell their tale simply and unceremoniously; they are the natural result of the migratory, independent spirit pervading the industrious classes in America, and offer interesting evidences of the genuine prosperity of the country for they show not only that the landlord and tenant system is displaced, but that almost every storekeeper and mechanic can contrive, even when quite young, to buy his own lot and live in his own house. On the other hand, however, they demonstrate that the capacity for enjoyment, and the appreciation of what is really desirable in life, that should naturally accompany this active and successful industry, are wanting. Each of these bare, bald, white cubes tells its monotonous story of a youth passed with little or no cultivation of the higher natural perceptions, and of a system of education in which the study of the beautiful in its most simple elements is neglected and apparently despised. The lack of taste perceptible all over the country in small buildings is a decided bar to healthy enjoyments: it is a weakness that affects the whole bone and muscle of the body politic, and it is a needless inconsistency, for a full exercise of freedom of speech and action should naturally result in a full, free exercise of the innocent enjoyment that unfettered industry renders possible, and a refined and refined, and simple, inexpensive grace ought habitually to be the distinctive marks of every habitation in which a free American dwells."

Fig. 1 is a Suburban Villa executed some years ago in Georgetown, Dist. Col. for Mr. R. P. Dodge. The plan of the principal floor shows a porch that occupies the lower story of a tower, and forms a continuation to the veranda on the principal floor. The main hall, lighted from this porch, is of liberal dimensions, and leads to a drawing-room that is provided with windows opening on to the front veranda, and with a handsome bay at the farther end. There is also a means of access from this room to a more retired piazza, or ombra, on the other side of the house. The dining-room, which communicates with the ombra, is, as shown, entered from this parlour as well as from the outer hall, and has a large pantry, or service-room, attached. The house cost about 15,000 dollars, but might be carried out in a planter way for 10,000.

Fig. 2 is a villa of brick and stone, intended to be simple, inexpensive grace ought habitually to be the distinctive marks of every habitation in which a free American dwells."

Fig. 3 is a villa of brick and stone, intended to be simple, inexpensive grace ought habitually to be the distinctive marks of every habitation in which a free American dwells."

Fig. 4 and 5 illustrate a villa "with wings and attics," about to be executed for Mr. Thos. Earle, of Worcester, Mass., and is estimated at about 16,000 dollars. The principal rooms communicate with each other, and with the hall.

Fig. 6 and 7 set forth a Marine Villa, which has been erected at Newport, Rhode Island, for Mr. D. Parish. It is built of brick and brown stone, and the contract was taken at something under 20,000 dollars.

Mr. Vaux has erected a country house for Mr. N. P. Willis, at Idlewild. He has evidently built for himself a good reputation.†

\* "Villas and Cottages." By Calvert Vaux. New York: Harper. London: Sampson Low, and Co. Ludgate-hill, 1857.

† Let us add, as showing the course pursued in New York, that the author's card, printed at the end of the book, states his terms to be:—

"25 per cent. for plans and specification,  
1 " " " detail drawings,  
1 " " " superintendence,  
5 per cent. usual commission of architects."



## VILLA RESIDENCES IN THE UNITED STATES.—MR. CALVERT VAUX, ARCHITECT.



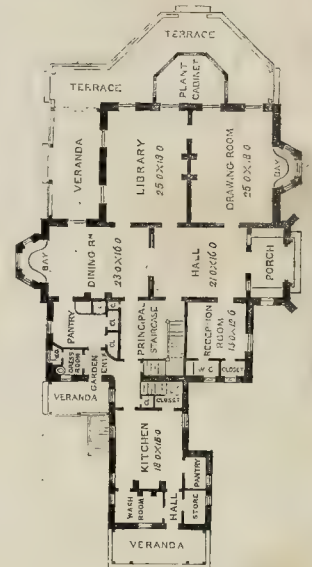
FIG. 1.



FIG. 3.



FIG. 2.



PLAN OF PRINCIPAL FLOOR.

FIG. 5.



FIG. 1.



PLAN OF PRINCIPAL FLOOR.

FIG. 7.



FIG. 6.





THE ARTESIAN FOUNTAIN AT GRENELLE, PARIS.—M. IVON, ENGINEER.

#### THE ARTESIAN WELL AT GRENELLE, PARIS.

In the year 1833, M. Mulot was charged, by the Municipal Council of the City of Paris, with the boring of an artesian well upon the left bank of the Seine, on the Place Breteuil, a vast space of ground extending in front of the Abattoir de Grenelle, not far from the Hôtel des Invalides.

The workmen commenced on the 24th September, 1833, and one may be able to form a notion of the innumerable difficulties that the skilful geological engineer must have encountered when one knows that the works of boring and tubage were not completed till the 26th of February, 1841—more than seven years of tribulations, accidents, and deceptions, which would have disheartened most engineers. But M. Mulot

promising always success in a manner so certain, and based upon serious geological documents and calculations, the men betook themselves with vigour to the work, and the implements of their apparatus brought away successively the different beds of earth, marked upon the geological map, traced *à priori*. At last the green sand was reached: it was the last bed of earth, and the water leaped up with impetuosity. The borer had arrived at the extraordinary and predicted depth of about 1,790 English feet.

It was necessary to add to this depth an ascending tube, of 110 feet, so as to attain the height the water was to reach; that is to say, about 1,900 feet from its starting point.

The water is produced from the pluvial filtrations of the lands of Champagne.

Since 1841, a cage of woodwork had been erected round the tube of ascension; but as the juxtaposition of that erection rendered repairs difficult in case of accident, the administration decided that a cast-iron monumental fountain should receive the ascending tube, and should replace the rustic scaffolding established originally there.

In the centre of the Place Breteuil, then, they are about to erect the fountain, of which we give in our present number a drawing, from the design of M. Ivon, the engineer.

In the centre of a circular stone basin, bordered by a railing, raised upon a stone base, rises the new tube of ascent. Round this tube circles a spiral staircase, consisting of 150 open steps, 2 feet 6 inches in width, which conduct to the platform of the campanile, the terminal



of which is raised 139 feet 8 inches above the ground.

The enclosure of the staircase is of hexagonal form, and 6 feet 10 inches wide. Four external platforms or balconies encircle the monument, and project gushing sheets of bubbling water.

#### THE REVIVAL QUESTION.

A CORRESPONDENT, "W. P." writes in the number of the *Builder* for the 31st of October, on "How are we to revive Gothic Architecture?" His purpose and feeling are evidently excellent. Far be it from any one to declaim against his reverent estimation of "our national architecture," "the noblest style of architecture that has ever prevailed." He is honest and simple in his judgment!

It would, however, be entirely unnecessary to notice his remarks if they contained nothing more powerful and noticeable than the well-worn similes and statements respecting the grammar of art and original composition, and the difference between design and imitation; but his letter contains some notions that, although conventional and ordinary, are really false.

The new grafts on the old stock are not by any means invented by continental artists, and all the suggestions embodied in their works, are to be carefully passed over by English architects. This statement is apparently made under the excitement of a lecture on indigenous art, or of the study of some of the very bold and very dogmatic teachings of revivalists: surely it is not to be received in soberness.

Are the buildings of France, Germany, and Italy perfectly out of the pale of beauty, and useless for artistic teaching? Is their expression so utterly incompatible with the Gothic feeling in other places that they cannot supply one sentiment or enlarge for benefit the circle of architectural forms and feelings?

"W. P." did not mean this. He would probably instantly disclaim it. His mind was, perhaps, fixed on the forcible and unnatural introduction of ill-assorted forms of continental art into our own ancient buildings.

How pathetic is his exclamation, "For heaven's sake let us have no patchwork churches!"

Why churches, friend? Mr. Scott does not confine himself in any way to ecclesiastical building: he is arguing for the aim of his revival—for the fitness of Gothic architecture for all purposes. And if "W. P." wishes to guard against patchwork building, he must enforce his objection to it on wider grounds than its application to old English churches. No one doubts for a moment that there is evil in importation to them of foreign forms, mainly because their character is already chosen and fixed, and is better unchanged. They are relics—not mere articles of use: they belong to us by birthright—not by our toil: they ought to be preserved, stable and perfect, for our followers. But modern buildings are of a different order: they are the books that we are to write—the wealth we are to leave for the benefit of our successors, and in them we ought to use every thought that we can cull from nature and art in our own country, in our own minds, and in all other places—all cast in our own mould.

There will be no more patchwork in a well-woven concord of ideas—some gathered from old work, and some from original thoughts—some from foreign, and some from native buildings—than in a landscape of the first order taken partly from nature, and planned and executed by rules of art.

"W. P." lays down before us the means by which the revival must be carried out. He finds it necessary to give us a short sketch of the periods of English art: he does this in the ordinary way: Early English, Early and Late Decorated, and Perpendicular, all pass in review. He is, perhaps, mistaken about the source to which he traces the failure in the progress of art in the fourteenth century. It is apparently to be more ascribed to the peculiarly altered texture of the thought than to the original want of consideration. The people, during the change from geometrical to curvilinear outlines, found their field less confined,—their opportunities vastly increased,—and their freedom really unlimited; then they gave way to the force of their imagination,—gradually cast off the grasp of reason and custom,—and gave the rein to rich and varying fancies. As they advanced, they in time became conscious that they had lost command, and had got out of the way. This led them to turn for rest and reform to the style of sharpness, precision, and lines,—called Perpendicular.

That they did lose sight of the principles of the direct subordination of parts, and the depth and boldness of moulding, is also manifest; but these inattentions to laws and to constitution are now, as then, the natural and continual consequences of an unrestrained fancy.

"W. P." cannot often have seen bent willow wands

in moulded stonework: the nicety of workmanship and delicacy of finish are, however, ordinary remarks.

"W. P." makes an observation concerning the one unbroken chain of styles; but this comparison, as he puts it, will hardly answer his aim. He does not intend that we are to consider the latest point of our ancestors' work as the proper starting-point for our own advance; yet they only ended the chain when they ceased to build at all—originally. This is rather against the revival in principle. Mr. Scott would not endorse it.

"W. P." cannot mean, either, that this unbroken chain was broken at any point at which we are to take it up.

We suffer much from far-fetched and ill-formed comparisons. "W. P." would have read us a lesson better in the homely prose we like best. He must mean that, to carry on the architecture of the past, we must begin our progress where our ancestors left the main high road for that road they really followed—or of the chain—that we must take off the links that fit not the rest, and forge additions to it that shall carry it on in good proportion and in proper strength.

Concerning "W. P.'s" opinion of the "stupid, conventional, and unobscuring custom," that Mr. Devison so loudly denounces, it is evident that he is somewhat led away from his observation of old churches by Mr. D.'s talk of modern ones. This walls, small cost, and necessarily large internal openings, necessitate a certain law in the matter: the massive masonry and the lavish cost of ancient work allow of any conceivable device. We are now hampered, but "W. P." is right in urging that we ought to do the best we can with our opportunity.

He will probably read me and my remarks justly: if so, he and I will both be satisfied. S. F. C.

#### WORCESTER CATHEDRAL: THE NEW WORKS, AND "VIATOR."

I do not intend to enter into any controversy with "Viator." When I observed in "Viator's" critical description of Worcester Cathedral, printed in your columns, many statements which I knew to be incorrect, together with many expressions of opinion which I believed to be calculated to mislead, I wrote to you for the purpose of correcting the errors, and of recording my protest against the opinions. I retain my own opinions, and my corrections of "Viator's" errors require neither explanation nor vindication. But I trust that you will permit me to leave your correspondent's ready flow of anonymous personalities to the regret with which they must be regarded by every candid and courteous reader.

In his last production, "Viator" states that I said at Worcester, that the exterior of the cathedral was equal in beauty to the interior, and this assumed statement he is pleased to regard as "simply preposterous." I never said anything of the kind at Worcester. What I did say was, that the exterior of the Early English parts of the cathedral, as originally built, was no less consistent with the style of the architecture, and no less worthy of admiration than the interior. I am well aware of the present sad condition of this exterior, and I have expressed myself without reserve upon this matter; at the same time I can see evident traces of what this exterior once was,—traces which would render it an easy work to reproduce the whole in its original character. Were such a restoration effected,—were the early buttresses to resume their first aspect, and the corbel-table and parapet to become again what they were 600 years ago, and the Early English windows once more to appear in their true forms, and to reproduce their original grouping,—and were such a restoration to be completed in all its details in this same spirit, I should be ready to appeal to any competent and impartial judge to pronounce an opinion upon the external dignity and beauty of the Early English Gothic of Worcester Cathedral. "Viator" compels me to rectify another mis-statement. He deliberately asserts that the Handbook of Worcester Cathedral which I have undertaken to write is "a self-imposed task." Instead of this being the fact, this is a duty entrusted to me by others, and by me undertaken at the request of those gentlemen whose property this "Handbook" will become when it is completed. "Viator's" own essay on Worcester Cathedral appears really to be a "self-imposed task."

"Viator" may object to such a duty being entrusted to me, and when my work is published he may regard it with contemptuous derision: I sincerely regret to be obliged to admit that his commendation and his censure are to me alike a matter of indifference,—until, that is, he has acquired the habit of "diligent, sustained, and thoughtful examination," and has learned how to discriminate with sound judgment, and to write with minute accuracy and under his own name. "Viator" evidently considers minute accuracy in what are apparently little things to be beneath his notice:

it is just possible, however, that some importance may attach to the exact position of such an object as the anomalous pier in the Worcester choir; and though "Viator" may not look a second time before he determines whether the lions in a shield of arms are or are not quartered with fleurs-de-lis, or whether the lions themselves are quietly walking with three legs upon the ground, or are in an erect attitude on their two hind legs only; yet these are just the matters which either furnish correct historical data, or lead the student of history astray. What am I to think of "Viator" considering that his "quartered" lions and fleurs-de-lis "can scarcely lay claim to an antiquity higher than the twelfth century?" The obscurity of the gloomy day must have been very obscure indeed, to have so completely overshadowed all remembrance of the fact that the French lilies were first placed on the shield of England by Edward—not the Confessor—but the Third.

"Viator" is angry with me because I supposed him to be a traveller. I did so without the slightest idea of giving offence. I believed that he was a "traveller," because he wrote himself "Viator." If I had supposed he would have preferred it, I would have reposed him a "wayfarer," or had I known his fancy for Latin, he might have been left untranslated, "Viator." Indeed, if I could have imagined that he had selected his assumed designation upon the same principle that he described the cathedral, I would even have supposed that "Viator," in his particular case, signified one who resides regularly at Worcester. As it is, I take my final leave of your correspondent as "Viator," which may mean whatever he pleases. I hope, however, that you will permit me, in plain English, to assure you that I am faithfully yours,

CHARLES BOUTELL.

#### CHURCH-BUILDING NEWS.

**Lincoln.**—The monument to the late bishop (Kaye) of Lincoln has been erected in the south arm of the east transept of the cathedral, contiguous to the tomb of Bishop Grosseteste. It consists of a square Gothic base, supporting a figure of the late bishop, sculptured in white marble. The deceased is represented in the moment of death: he is clothed in his episcopal robes, and reposes on a mattress, his head supported by a pillow, his right arm across his breast, with the hand clasping the sacred volume, and the left hand just relaxed from the crozier which lies by his side. The sculptor was Mr. Westmacott, R.A. The pedestal is arched on each side, the intervals being pierced with trellis, surrounded by foliage. Around the edge of the table runs the record in Latin of the deceased's titles, and the dates at which he gained his various promotions.

**Little Canfield.**—The church here, which was originally one of the earliest and rudest of the sacred edifices in this neighbourhood, has been lately almost entirely rebuilt, and is now completed in the Decorated style, except the south door, which has been kept to the original. Eight new windows have been placed in the church and vestry: the wooden bell turret has been removed, a gable carried up with cross and coping, and a new tower and spire rising to the height of 80 feet erected on the north side of the church, with an entrance at the west side, and windows north and east, in character. The tower communicating by an arch with the nave of the church, the gallery or organ loft has been removed, and the instrument now stands under the tower arch. A new porch with tracery has also been built on the site of the old wooden structure at the south entrance: this is in the Perpendicular style. The whole of this renovation, including the tower walls, buttresses, and spire, has been worked in Caen stone. In the interior the chancel floor has been laid throughout with encaustic tiles: a niche, surmounted with tracery in stone, has been placed in the north wall adjoining the vestry, and to the latter a new stone staircase has been built. The old pews in the chancel have given place to open Gothic benches. The rector, the Rev. C. Lethingham Smith, was his own architect and paymaster. The contracts were taken and the works executed by Mr. W. Jago, of Great Dunmow, mason and builder.

**Geddington.**—On the 29th ult. the old parish church of St. Mary Magdalene, Geddington, was reopened, after extensive repairs and restoration. The church has been enlarged by the lengthening of the north aisle, and much additional room has been gained by the removal of the huge galleries and pews which before disfigured it. The seats are all open, and of deal, stained and varnished, and afford accommodation for upwards of 500 persons. The floor has been paved with Milton's tiles. A new vestry and porch have been built. Several arches, before hidden, have been thrown open, and a new one built in the south aisle. The woodwork was done by Mr. S. R. Brown, of Kettering, and the masonry by Mr. E. Patrick, of Geddington. One of the most remarkable features



in this church is the length and height of the chancel, which dates as far back as 1369.

**Bernick Bassett.**—The church here, which has recently been undergoing repair, has been re-opened. The building, part of which is in the Early English style, and dates from the eleventh century, is almost entirely new, only parts of the nave and chancel walls being left of the old structure. The vestry is new, as also the tower. The stone used is found in the neighbourhood, the dressings being of Bath stone. The tower is covered with a pyramidal roof, hung with plain red tiles, and surmounted by a fluted and gilt cock. All the roofs are of deal, stained, and are covered with stone slabs, with crosses on the nave and chancel. All the fittings are of English oak, as are also the pulpit, desk, and lectern. The chancel contains four benches, with carved poppy-head ends, altar rail, and table. The chancel is laid with Minton's tiles. There is a stained glass east window, and on the south side a memorial window to Mrs. Hawkins. The work was executed by Mr. Major, of Swindon. The architect employed was Mr. Thomas Wyatt, of London. The cost of the rebuilding was about 900*l*. Towards this, a donation left by the late Mrs. Hawkins, of Avebury, amounting to 200*l*, was available; and in addition, the sum of 100*l*, was given by the Marquis of Lansdowne, the lay proprietor of the parish.

**Hawarden.**—The chancel of the church, which has received comparatively slight injury from the fire, is being enclosed by a brick wall, and with deal boarding and asphalted felting the roof will be made waterproof, and the chancel will then be used for divine service until the remainder of the church has been rebuilt and restored; after which all the damage done to the chancel will be made good. With reference to the re-building, a meeting of the parishioners has been held, at which Mr. James Harrison, of Chester, architect, reported as to the state of the church. He estimated the expense of re-building the pillars and arches in the nave, and restoring the windows in the west end, the roof of the nave and aisles, the floor, seats, doors, and the pillars, arches, and floor to the tower, re-glazing the windows, and completing all damage, at an outlay of 8,025*l*. He also estimated the restoration of the roofs, stalls, &c. in the chancel, at 413*l*. A plan for raising funds, by rate and subscription, was agreed to, and a subscription list at once opened, when 500*l*, each were subscribed by Sir S. R. Glynn, Mr. Gladstone, M.P. and the Rev. R. Glynn, the rector; and 100*l*, each by the Bishop of St. Asaph, the Hon. Mrs. Talbot, and others; various smaller sums were also subscribed.

**Liverpool.**—The church of St. Stephen, Crown-street, was re-opened on the 27th September, the work having then so far progressed as to admit of public worship being celebrated. The alterations, says the *Courier*, were imperatively called for on account of the defective construction of the roof, the entire of which was unfired, and the chancel portion was quite open to the severity of the weather. The chancel-roof has been made good, and over the nave a new polygonal panelled ceiling has been put up to prevent down draughts. The whole of the church internally has been cleaned down and coloured, and the entire of the woodwork newly varnished. The chancel has been improved. The east window, hitherto covered with a curtain, which gave a dismal look to the church, has been removed and replaced by a stained-glass window, manufactured by Messrs. Pilkington, of St. Helena's; the window is necessarily simple in its design. The top having three circular portions, is filled with a medallion of the "Stoning of St. Stephen," and with two groups of angels bearing palms: the centre of the five lights has a large figure of St. Stephen under a canopy. A new rector of Caen stone, with marble shafts, supporting crocketed and fluted capitals, has been erected in the chancel. The stone carving has been executed by Mr. R. W. Tuckoff. The warming of the church has been improved, under the superintendence of Mr. Hazard, warming and domestic engineer. The work has been carried out from the designs, and under the superintendence of Mr. Thomas W. Kingsmill, of Dublin. A member of the congregation acted as clerk of the works.

**Newmarket.**—For some months past the formerly dilapidated fabric of St. Mary's Church, Newmarket, has been undergoing a thorough repair. The old pews and galleries were substituted by open seats, affording more accommodation; a gallery, extending the entire length of the body of the church, has been erected, the floor laid with oak, and gas-pipes carried to every part of the building, the walls cleaned and repaired, and new windows put up.

**Burrougham.**—The new church here has been opened for divine service. The edifice is in the Early English style, and built of red brick, with slated roof. The interior is also all of brickwork, in three colours diapered. The pulpit and font are of brickwork,

blended with mosaics. The windows are glazed in geometrical patterns, except the easternmost, which is a painted window of the two Marys at the tomb, presented by Mr. H. Hesley, of Ashby. The length of the church, from east to west, including the chancel, is 67 feet; and the whole occupies about 2 roods and 36 perches. There are twenty-eight stalls in the church, and a few seats for children, all of which are of American deal, stained. The cost of the building, exclusive of internal arrangements, is 1,000*l*, and with the internal arrangements, 1,300*l*. About 640*l*. have been raised by public subscriptions. Mr. Teulon was the architect; and Mr. Johnson, of Laisby, near Grimby, the builder.

**Otterburn (Northumberland).**—A new church has been erected in this village, and was recently consecrated by the Bishop of Durham. The edifice is in the Decorated Gothic style of architecture, from designs by Mr. John Dobson, architect; and cost about 3,000*l*.

#### PROVINCIAL NEWS.

**Ely.**—The bishop and dean and chapter have made arrangements for the erection of schools in the city of Ely. There will be two in the upper and one in the lower town. In Silver-street, in the upper town there will be schools for 400 children, and a committee-room; also a school for infants in Gaol-street, with a residence. In the lower town in Broad-street there will be an infant school for 100, and an adult school for 100. Mr. S. S. Teulon is the architect. The style of the buildings is Early Decorated. They will be of brick and Caister stone.

**Chippewham.**—The local guardians have determined to erect a new workhouse. The site has been selected, and an agreement signed for purchase of the land. Mr. Christopher Creeke, of Bourne-mouth, has been appointed architect for the completion of the building. It will be erected in a field at Rowden-hill, near the Bath turnpike-road, and about half a mile from the town.

**Stafford.**—St. Peter's Schools, Hixon, have been opened. They are erected on a piece of land adjoining the church, the gift of Earl Ferrers. The erection is of red brick, faced with stone, with stone copings to the gables, and is 36 feet by 18. The walls are 13 feet high, with an open timbered roof, rising 7 feet from the wall-plate. The timber of the roof is stained and varnished. The building is lighted by five lancet windows, one at each end, and three to the front. The school-room is entered by two porches, one for boys and another for girls, and the floor is boarded. Requisite outbuildings adjoin for the convenience of the scholars, and the master's house, erected in a similar style is attached. The school premises are surrounded by a playground.

**West Hartlepool.**—The contract for the erection of a new pile of warehouses on the east side of the Swainson Dock, West Hartlepool, has been let to Mr. Samuel Bastow, of West Hartlepool, at 11,000*l*. The range of buildings will be 400 feet long by 100 feet wide.

**Alnwick.**—A movement is in progress in Alnwick for the purpose of obtaining a covered building or corn-exchange, where farmers and corn-merchants may meet together and transact their business.

**Lichfield.**—The contractors for the Museum are Messrs. Lilly, of Meosham; not Messrs. Lilly and Meacham, as stated.

#### NEWS FROM SCOTLAND AND IRELAND.

**Kilmarnock.**—Building operations have been going on here with activity for some time past. A number of villas have been erected in the suburbs. In Portland-street, the Royal Bank buildings, from the designs of Messrs. Peddie and Kinnear, of Edinburgh, are approaching completion. The Episcopal Chapel in St. Marnock-street has been consecrated: the building partakes of the Early English style, and consists of chancel and nave, with open timber roof, which, together with the seats, are stained. In the same street a range of dwelling-houses and shops is in course of erection. They are in the Italian style, having triangular and segmental pediments over the windows. The architect is Mr. Ingram, of Kilmarnock. In Fould's-street, a small chapel has been erected, and a number of other houses in various parts of the town.

**Aberdeen.**—The anticipated scientific meeting of the British Association, in 1859, has induced some of the more enterprising and intelligent of the citizens of Aberdeen to bestir themselves in order to provide an adequate place of meeting for their expected visitors; and this they propose to effect by means of a subscription for the erection of a building to be permanently devoted to such public purposes as "a music-hall" is usually intended for. A subscription list, amounting to 1,600*l*, has already been got, and when 2,500*l*, are raised, the work will be proceeded with. The hall will belong to a Joint Stock (limited)

Company, and will probably cost some 5,000*l*, or so, and be capable of accommodating 2,500 persons. The provost heads the subscription list with 100*l*.

**Belfast.**—A correspondent says:—"The Roman Catholic workmen of Belfast are about to build a splendid hall, with library and reading-room attached. This new hall is intended to hold 3,000 persons, and, when completed, will be one of the finest buildings in Ulster."

#### STAINED GLASS.

**Lincoln.**—Another memorial window has just been placed in the chapel of St. Anne's Bedehouses. The window has been designed and executed by the Rev. Henry Usher, a native of Lincoln, who has long devoted attention to this art. The window is the north triplet in the chancel, and consists of three figures of nearly life-like size, under foliated canopies—one in each compartment. The central figure represents Elizabeth, the wife of Zacharias, and his wife: on the left side is Simeon in the act of blessing Zacharias and his wife (Luke ii. 34), and on the right side Joseph of Arimathea, having his traditional emblem, a Hawthorn branch, in his hand. At the foot of the figures in the foreground is grass bestrewn with flowers, and mountain scenery in the distance. The window on the opposite side was executed by Mr. Usher some two years since, and for the west window he has already prepared designs, the subject being the Nativity of our Lord, and the Visit of the Magi.

**Ashbourn.**—A lancet window has been placed in the north transept of the old church here by Mr. Lister, to the memory of his late uncle. The window has been painted by Mr. W. Warrington, of London. It consists of borders, foliage, and three medallions. The upper medallion is emblematic of Charity, embodying the inscription, "I was hungry and ye gave me meat;" the middle one of Honesty—the just steward rendering his talents to his lord; and the lower one of Hospitality—"I was a stranger and ye took me in."

**Winchester.**—A commemorative window of stained glass is being placed by Mr. Gibbs, of London, in Winchester Cathedral, at the western extremity of the south aisle of the nave, in honour of the officers of the 97th regiment who fell in the Crimea during the late war.

**Aberhafesp.**—Another stained glass window has been placed in the chancel of Aberhafesp church, near Newtown. This window is about 12 feet high by 6 wide, and is in the perpendicular style, with somewhat florid tracery. The three bottom lights illustrate the narrative of the Cusanian woman's appeal to the Saviour to "have mercy on her, and heal her daughter." The Saviour is attended by seven of his apostles, including St. John and St. Peter. The upper parts of the lower lights contain landscapes of the ancient fortified city of Tyre; and coasts, with trees and foliage peculiar to eastern scenes, forming a relief to the figures in the foreground. The upper parts, or tracery lights, are filled with the Heavenly Host, represented by doves ascending almost surrounded by vast numbers of cherubs. This window is the gift of Lieutenant General Proctor, and is the work of Messrs. Thomas Ballie and Co. of London.

#### SANITARY STATEMENTS.

**The Effect of Sanitary Measures.**—In a paper read at the late Birmingham Conference, Mr. May, of Macclesfield, added another item to the existing series of proofs of the saving of life and money which may be produced by sanitary arrangements. In 1847 and 1848 Mr. May called the attention of the inhabitants of Macclesfield to the mortality which prevailed there, and the state of things which led to it. When these evils were made sufficiently apparent to command attention, the Public Health Act was introduced, and constructive works were immediately commenced in the worst streets, and courts the most notoriously filthy, and where sickness and mortality were most in excess. The streets were sewered, paved, and flagged, the houses all drained, additional means of ventilation introduced, and the yards and courts drained and flagged; and the contrast which they then presented, and effects which followed, were most striking. First, with regard to the rate of mortality. For seven years it was 33 in a thousand on the average; it has now been reduced to 26 in a thousand. If this fact were taken alone it might be considered of little value, but it will be remembered that certain streets were described as possessing a frightful rate of mortality; and as these streets were the first to be improved, the decrease in the mortality has been in one of the streets 60 per cent., in a second, 42 per cent., in a third, 40 per cent.; in a fourth, 34 per cent.; and in a fifth, 12 per cent. It is deserving of remark, that the street in which the decrease was the greatest was the first to be improved, and that in which there was the least decrease was the last



executed, showing that the longer the works have been in operation the greater the decrease, up to a certain limit. The average age of death of all persons was twenty-four years, or ten years less than the adjoining rural districts; it is now twenty-nine years, or five years less than the rural district. But to afford a striking example of the difference between the average age of death in streets where the sanitary arrangements were completed, and others devoid of such, four of each were fairly selected for comparison, and in the former the average age of death was 34, whilst in the latter it was 19 years. Throughout England the mortality of children under 5 years is 39 per cent.; here it is 40 per cent. and the reduction has been 13 per cent. For each death it is proved from correct data that there are 28 cases of sickness, so that it will be conceived how large a number of cases of sickness must have been prevented, with all their attendant loss and suffering; but in order to prove the fact, it was ascertained that according to the relief books of the board of guardians the number of cases of sickness relieved and attended by the union surgeon, in the streets that were drained, were from 24 to 29 per cent. less compared with the past, whilst, in certain other streets enumerated and not drained, there was no decrease at all. There must, it is fair to presume, have necessarily been a corresponding decrease of cases attended by other medical men than the union surgeon, in the first-named streets. Other works were done and other improvements followed, including a considerable decrease in the amount of crime.

**Evils of Inhabited Stables.**—The monthly report of Dr. R. D. Thomson, the medical officer of health in Marylebone, states that amongst the deaths during the five weeks ending October 31st, fifteen are registered as having occurred in mews, and nineteen cases of zymotic sickness had been attended by the parochial surgeons in similar localities. The inspection of houses over stables in mews had occupied much of the time of the inspectors, and had continued to lay bare a highly unhealthy condition of the servants of the higher classes. 163 "inhabited stables" had been examined during the month. When asked, at a meeting of a representative council, whether he considered the mere fact of persons living over stables where horses were kept, and of which there were so many instances in that parish, was in itself injurious to persons so living irrespective of any other cause, Dr. Thomson said the point very much depended upon the situation of such habitations. He did not mean to imply that the mere fact of persons living over stables containing horses was injurious to health, but the fact was that in most instances the mews had been constructed in such a way that the buildings were without closets, and had very bad drainage, and these circumstances, coupled with the keep of horses beneath the dwellings, had a prejudicial effect on health, but it did not arise solely from horses being kept underneath. A medical man told us, not many days ago, of a groom residing over a stable in Belgravia who had lost three children, one after the other, as they reached a certain age, and who had been, with tears in his eyes, to ask him how he could save the fourth, then sickening in a similar manner. The advice was, leave the stable, and get a healthy lodging. The advice was taken, and that child is now healthy and thriving. We know of half a dozen such cases, and can, therefore, corroborate most positively Dr. Thomson's statements.

#### THE METROPOLITAN BOARD OF WORKS.

The President of the Metropolitan Board of Works and the Chief Commissioner had a conference on Thursday in last week, on the first principles to be adopted with reference to the main drainage; the details to be settled by the referees appointed by the Chief Commissioner and the engineer of the Board assisted by two others. Mr. Thwaites laid the case of the Board before the Chief Commissioner, and pointed out that the principal points of difference were the proposed open channels, the increased area to be drained, and the expense of carrying the point of discharge or outfall so much lower down the river. Upon the first point, namely, the open canals, Sir B. Hall at once admitted that open canals were objectionable. With respect to the second point, the extension of the area, Sir B. Hall, according to the reports of the daily press, wished the Board clearly to understand that it was the duty of that body to intercept all impurities flowing into the Thames within the metropolitan area; and he explained this by showing that if a stream became contaminated beyond the metropolitan area, but discharged itself within that area, then the sewage passing into such stream should be intercepted. With regard to the third point, the point of outfall, the Chief Commissioner was clearly of opinion that it ought to be at Sea Reach, and that if the Board were to have it at Ebbw, public opinion would protest against it, and the Board's works would probably be stopped by

Chancery as a nuisance. On Friday Mr. Thwaites reported to his own Board the result of the interview. He stated that Sir B. Hall had given up the open channels and the extended drainage area. This discrepancy at once struck the Board, and Mr. Thwaites was again asked to explain; but he adhered to his first assertion. The Board thereupon resolved to have their own short-hand writer's notes written out *in extenso*, and printed for the information of the Board.

There appears to be also a misunderstanding as to who should pay the cost of the extension to Sea Reach. Sir B. Hall pointed out that the cost would be merely an annual rate of five farthings in the pound additional.

Next Monday the several questions thus stated will come on for unravelment by the Metropolitan Board.

#### LAMBETH ASSOCIATION FOR PROVIDING IMPROVED DWELLINGS FOR THE LABOURING CLASSES.

This association, formed under the provisions of the Labourers' Dwellings Act, has commenced its work in Lambeth, on a vacant piece of ground situated between the railway and Vauxhall-walk. A brick building is now in course of erection there, which will contain sixty-four rooms, or thirty-two sets of two rooms each. The approach to the first and two upper stories is by means of a staircase communicating with external galleries. It is expected that the association will be able to let the two rooms for 3s. 6d. per week, and then obtain a fair profit. Four water-closets are provided on each floor: this gives one closet for the use of two families. As an endeavour has been made to build more cheaply than usual, in order to let at a less rent than is ordinarily paid in improved or model dwellings, the directors have been content with this amount of water-closet accommodation, as they are convinced that even this is much better than the poor now obtain. Each room is ventilated by means of the patent syphon ventilator. The architects are Messrs. Ashpitel and Whichcord; and the builders, Messrs. Colls. We understand that the directors of the association have ordered drawings to be made, and tenders to be obtained for fifteen houses, to be built in the same locality. Each house will contain four suites of three rooms each, and will be for the accommodation of those who are able to pay a somewhat higher rent than will be charged to the inhabitants of the house now building.

#### THE BRAINTREE BURIAL BOARD AND THEIR CONTRACTOR.

My attention has been called to an article in your publication of Saturday last (p. 633), relative to a claim made by Mr. Brown, a contractor, against our Burial Board. I have no reason to complain of the manner in which you have treated the subject, but I do complain of the "committee of gentlemen who have associated to protect the interests of the contractor," that they, being in possession of all the necessary particulars, have apparently withheld from you one or two facts, which become of importance when they attack the Board with the accusation of doing an injustice.

The question, which, as you say, is one of principle, is, whether a builder, who has purchased bills of quantities from an architect, has a right to sue the architect's employers, if, in consequence of an error in these quantities, he finds it necessary to use more materials than he anticipated.

On this point the Board wish for a decision. But Mr. Courtauld, who was chairman of the vestry meeting to which you have alluded, not content to wait the result of the trial which has commenced, and is now in progress, has written and published a letter, in which there is a total absence of that propriety of feeling which we have a right to expect from one who occupies the position Mr. Courtauld has gained. To this letter I have published a reply, which, I fear, too long for insertion in your paper; but I enclose a copy, referring you particularly to Clause I. in Mr. Brown's security, as showing the terms upon which Mr. Brown's contract was undertaken; and when I tell you that the Board contend that the bills of quantities were prepared by the architect, and sold by him for his own profit, and that the

"Clause I. That he the said contractor shall and will build, erect, and complete two chapels . . . according to certain specifications and drawings prepared by Mr. John Johnson, of Bury St. Edmund's, the architect employed by the said board. . . . And shall do and execute all such works (whether particularized in the said specifications or not) as shall be requisite for the erection and completion of the said buildings and works, or may be reasonably inferred from the said specifications and drawings, in a good substantial, durable, and workmanlike manner, and provide all materials for the same of the best and most approved quality, and carry and convey the whole thereof at his own expense and risk. And in all respects complete the said works to the satisfaction of the said architect."

board deny that Mr. Brown, or his sureties, signed the security under pressure, I think you will see that the board have not only an important principle for which they are contending, but that they are doing so fairly and dispassionately.

If I may offer my own ideas on the main question, and on which you have refrained from giving a positive opinion, I will do so. It appears to me to be a convenient practice, that bills of quantities should be prepared, whether by the architect or not I consider immaterial. I think builders perfectly justified in sending in tenders based on these quantities; but here the use of them should stop. Whenever the tender of a builder is accepted, he ought, before signing his contract, to satisfy himself that he has based his calculations on correct data. If it should turn out that the quantities are wrong, surely he would have a remedy against the person from whom he purchased them; but if, after satisfying himself of the correctness of the quantities, or (at his own risk) neglecting to do so, he signs a contract or security to complete the works, according to the plans, for a stipulated sum, he surely ought to have no remedy against his employers because he neglected to do that which it was palpably his duty to do more than theirs. Try the question from the opposite point of view. Suppose, when a contract is completed, the employer says to the builder, "You based your calculations on the assumption that you would require 1,000 feet of stone, when, in fact, you have only used 500 feet. I have contracted to pay you 1,000/., but I shall refuse to pay you more than 900/., in consequence of this mistake." What would the builder say about justice then?

Probably all bills of quantities are more or less inaccurate; but so long as they are used merely to assist the calculations of the multitude of persons who tender, they are a very useful invention; but to hold that because a man, on the faith of them, has advisedly signed a bond, or other legal document, to perform certain works, he may afterwards repudiate his liability, would be a most dangerous policy, and, as it appears to me, within the limits of neither law nor equity.

A. CUNNINGHAM.

\* \* \* We have since received a communication from Mr. Brown, the contractor, and documents from other parties interested, and we postpone further comments in consequence.

#### LIVERPOOL ARCHITECTURAL SOCIETY. GLASGOW CATHEDRAL.

At a meeting of the above society, held on Wednesday, the 4th inst. Mr. Huggins, president, who was in the chair, exhibited a manuscript "Table of Architects and their Works, chronologically arranged," which had been presented to him by its compiler, Mr. Francis Sullivan, of Manchester, known to the profession by some contributions to the *Builder*. It contained a very full list of the principal architects of all ages and nations, from Hiram, the builder of Solomon's Temple, and Dædalus, the architect of the Labyrinth of Crete, down to the latest deceased practitioner of our own time and country.

Mr. F. Howard read a paper "On the Decoration of Glasgow Cathedral with Stained Glass." The author read copious extracts from the proceedings of the committee, at Glasgow, appointed to select an artist to execute a design for the windows. Upon these proceedings he commented, contending that the committee had not shown any reasonable grounds for the selection of a Munich artist, and that they were incorrect in their notions of glass designs. He referred to what might be considered the elements of Munich celebrity, which had merely been obtained from the King of Bavaria paying high prices for designs. These had been introduced into various buildings in Bavaria, and had been the means of raising up a number of glass-stainers in their own peculiar way. Was it to be supposed that artists would execute the work for 27. the square foot? and if not, where would they get the designs at all? He contended that the works of the Munich artists were merely copies of old German works, and did not possess that ingenuity which was attributed to them. They were such windows as English artists had been improperly accused of making. If it were intended that such pictures should be an example to British artists, they declined to take them. Mr. Howard offered some practical observations on the various styles of glass-staining, and the mode of treating subjects, and defended the English artists from incapacity—a charge involved in the recent proceedings of the committee at Glasgow. In conclusion he commented upon a subject which had been repeatedly brought under notice in some of the newspapers, namely, the execution of works of art by commission. It was urged that artists could not be trusted to work on commission, and that was an argument which had been put forward by the Glasgow committee. Such an assertion could not be maintained by facts. Experience showed that all the first



works in the world had been produced on commission. The Elgin marbles would not have been executed except they had been ordered. Michelangelo and Raffaele received commissions for their most celebrated efforts, and all the greatest works in Italy and in this country had been executed on commission.

Mr. James M. Hay said:—The school which the German and French artists follow is one open to the gravest objections. Glass-painting is an art of its own, and not an imitation of pictures, with light and shadow, distant backgrounds and aerial perspective. Each subject should be complete of itself, and confined within the stone framework or mullions provided by the architect. The art to which glass-painting is more closely allied than any other is mosaic, for the artist makes out his subject somewhat after the same manner, and, by cleverly combining pieces of glass of various colours, produces a work of such brilliancy, sparkling effect, and gem-like appearance as can be obtained by no other means. I can testify to the absence of this quality in the Munich windows at Cologne Cathedral, to which allusion has been made, as well as to the window by Luban, of Tours, in the Church of the Innocents in this town. This false style has been abandoned for years by all our best glass painters. I will mention one exception. The Duke of Northumberland has had executed a window for his private chapel at Alnwick Castle: the cartoon for this window was designed and prepared by Mr. Dyce, and was exhibited at the Art Treasures Exhibition at Manchester; and while the drawing, composition, and colour are equal, if not superior, to anything the Munich artists have done, there are the same faults which characterise that school. The window is of five lights, and the composition extends across them all: the actual framework of stone mullions is ignored; and twisted columns, strong and massive, with capitals and ogree arches, all of a nondescript character, are introduced, painted, setting the real architecture at defiance. This is the kind of glass painting with which the Glasgow committee are desirous of decorating the finest—the only cathedral in Scotland, and apply to Munich for what they can have equally well and better done at home. But a different principle from that of the Munich school is exhibited in all the best works of our best glass-painters: each compartment of a window is treated as a glass panel: the architectural framework is considered as perfect, and receives from their hands no supplementary additions of painted canopies, pedestals, arches, and other *et cetera*: the resources of their art, limited though they be, are sufficiently large to dispense with such facititious aids.\*

#### THE BRISTOL GENERAL HOSPITAL.

THE new building which has been erected, by public subscription, for the purposes of this charity, is situated in the rear of the old hospital in Guinea-street. It is described as a central tower, from which two wings radiate at right angles, one facing the New-cut and having a southern aspect, the other facing Bathurst-basin and having a western aspect. Attached to the extremity of the western wing, and in the rear, is another building, so that the hospital may be said to form three sides of a square. The latter has a northern aspect, and the whole edifice stands upon a platform. The ground-floor of the building is appropriated to the accommodation of the resident officers, the committee, and the out-patients. The room in the base of the tower is the board-room: next to it in succession in the southern wing, are the library, the house-surgeon's dayroom and bedroom, the pupils' dayroom, and matron's dayroom and bedroom. On the opposite side of the corridor with which these apartments communicate is the main entrance, the staircase of the second and third floors, a dining-room, and some storerooms. In the western wing, in the front, are the museum, the surgeons' consulting-rooms, and the waiting-rooms for the out-patients of the surgeons and physicians, and in the back, the staircase of the first-floor, two casualty wards for males and females, and some other rooms. Outside both these fronts is a colonnade, and here the patients will take the air when occasion requires. The part of the building attached to the extremity of the western wing, and facing north, contains the physicians' room, the dispensary, and the drug-room. On the opposite side of the corridor is the porter's room, the window of which overlooks the yard, and some small rooms for different purposes.

The upper part of the building will be devoted to the in-patients and the nurses. The first floor will be occupied by males. The room in the central tower will be the sitting-room, during the day, of those patients who are able to leave their beds. In the southern wing are two large wards, capable of

containing from sixteen to twenty beds each, with washing-closets attached; and between the wards is a room for the nurses, this being obtained by a projection in the face of the building. These rooms are so arranged that a single nurse can overlook two wards. On the opposite side of the corridor, that is, in the back of the building, is a very complete bath-room, a coal-store, a scullery, in which any medical cookery will be done, a small ward for exceptional cases, and another for patients after an operation. The western wing is arranged in a precisely similar way,—two wards, with a nurses' room between in the projection of the front; but the northern part of the building attached to it furnishes another ward, making five upon the whole floor.

The second floor, which is reached by its own staircase, is for the female patients. Its arrangements are precisely similar to those of the first floor, with this difference,—that at the back of the central tower, that is, in the angle where the two wings meet, is the operating theatre. The basement of the building contains a spacious kitchen, a sitting-room for servants, a spacious washhouse, in which the work will be done by steam, and all the other conveniences which can add to the completeness of the building, and the comfort of its inmates.

The floors are formed with Keene's cement on concrete, the only exceptions being the bedrooms in the top story, occupied by the nurses. An air-shaft runs up through the building at the angle of the wings, and every ward, every room, corridor, and closet is supplied with hot and cold air, with means of escape, the polluted air being drawn off by an apparatus in the roof. In addition to this, every room has one, and every ward two, open fireplaces. Hot, cold, and chilled water, is carried by pipes up to each floor, and the whole building is lighted by gas. Steam will be the chief servant of the house. The new hospital has been designed by Mr. W. B. Gingell, and we are told, in its present state, its cost will be about 15,000*l*. It is capable of receiving from 180 to 200 in-patients.

We give these particulars with which we have been favoured, but we reserve an opinion as to the plan and arrangements of the hospital in a sanitary point of view, until we have an opportunity to inspect it personally.

#### MONUMENT TO THE LATE ASSISTANT-SURGEON THOMSON.

THE monument to that heroic man of science the late Assistant-Surgeon Thomson, of the 44th Regiment, is now complete. It is a granite obelisk, 65 feet high, comprising a shaft finely polished, and a base, on which are inscribed the deeds of him it records, and three steps. It stands on an elevated hill at the western extremity of Forbes, a place made best known by "Machbeth."

This well-deserved memorial was originated by the late Director-General, Sir James McGrigor. It will not soon be forgotten how Surgeon James Thomson, after the battle of the Alma, when the British were leaving the field, voluntarily remained behind with 700 desperately wounded Russians, 400 of whom he succeeded in restoring. He contrived to escape the dangers which menaced him throughout his stay, but died very shortly after, from the effects of hardships and privations.

The master-roll written by Fame in the Crimea has no nobler name in it than James Thomson. "His life was useful, and his death was glorious."

#### ISLINGTON VESTRY-HALL COMPETITION.

On Friday, the 6th, the report of the special committee, referred to in our last, was laid before the Vestry. In reply to inquiries as to whether the designs selected could be carried out for the amount fixed, Mr. Harvey said it was taken for granted by the committee in selecting, as it was on that understanding alone architects had competed.

The committee being asked to state which were the best four out of the twelve, named No. 46, "Con Amore"; No. 50, "Utility"; No. 57, "Whytlington"; and No. 71, "A. B. C."

The Vestry then proceeded to the selection of the two plans for the premiums, on a motion by Mr. Cox, together with a proviso, at the instance of Mr. Elt, to the effect that the Vestry was not bound to build either. Mr. Timewell urged the consideration of the question of cost. Mr. James Wagstaff thought the Vestry ought to have more information out of the committee. The mode of voting was then considered, and Mr. Elt made a stand for a new system. It was, however, considered inadmissible, and the Vestry proceeded to select the two designs by taking a show of hands for each *separatim*, and striking off the lowest, and then repeating the process, till at length the two successful designs were announced to be,—

1st, No. 56, "Utility," found to be by Mr. Henry

E. Cooper; and 2nd, No. 46, "Con Amore," by Mr. Allom.

It was resolved that the committee should communicate with the authors of the designs, and take measures to satisfy themselves that the designs could be executed for the fixed cost.

#### "WOODMAN, SPARE THAT TREE."

SIR,—Your observations on London gardens in a recent number emboldens me to claim your sympathy for the trees in this neighbourhood, which are threatened with deformity or annihilation by the vestry of St. Marylebone. Their surveyor gives us notice that it is against the law for any tree to overhang the garden-wall, and threatens that, if they are not duly cropped, our premises will be entered, and the tree cut down.

To my eye the most pleasing suburbs of London are those where the road is bordered by gardens, whose overhanging trees form a grateful variety to the ceaseless lines of houses. They are useful too, for often have I seen groups of people seeking shelter from a sudden shower under their foliage. One tree in this neighbourhood was peculiarly admired by the celebrated landscape-gardener you have alluded to, its graceful branches forming a most picturesque object in a bend of the road. It has already been injured by printed notice. We look to the press as our protector against ignorant and overbearing authority, and we hope not in vain.

AN INHABITANT OF ST. JOHN'S-WOOD.

#### NOTES UPON IRON.

GLOOMY apprehensions and fearful forebodings are supreme in South Staffordshire. No failures are yet reported, but it seems almost impossible that some firms can hold out much longer. Every one held fast his confidence till the Dennistons went. The connections of that firm are so many and so extensive, and the interest in these again so many and diversified, that the announcement by that firm, dated the 7th inst. was felt as "a heavy blow, and grave discouragement." These views were shown to be by no means groundless, when on Wednesday afternoon, the houses concerned received circulars from Messrs. E. B. Codrington and Co. of Liverpool, asking for time in consequence of the suspension of Messrs. Dennistons. Some good home orders are being received in certain directions, and no alteration is stipulated in the kind of tender; but in most others no order can be got unless for a four months' bill, which at 10 per cent. and its uncertainty, is a greater risk than will be undertaken. The period is one of great suspense.

#### SCENERY AND MUSIC.

*The Haymarket Theatre*.—Mr. Tom Taylor, an artist himself, has taken care to have two or three very pretty scenes for his new comedy, "An Unequal Match," which has been produced by Mr. Buckstone (the manager himself playing in it), with very great and well-deserved success. The curtain rises on "A Village in Glaisdale, Yorkshire," by Mr. Morris, with the inn and the forge, and the stage laid out in walks and grass plots, the whole very naturally and pleasantly built up; and it falls, in the third act, on a German watering-place, with the *brunnen* and the reading-room, and a picturesque mountainous landscape behind, very creditable to Mr. O'Connor. The scene for the second act, an interior, Jacobean in style, with a carved chimney-piece in two stories, strikes us as not quite a new friend. Miss Amy Sedgwick, who has the principal part in the piece, has not yet attained completely the art which hides art, but must, nevertheless, be considered a great acquisition. Compton is admirable: in fact, it is an exceedingly interesting and nicely written piece, very well acted, and deserves to be seen.

*English Opera at the Lyceum*.—Here, too, scenery has not been disregarded: indeed, the general completeness with which Mr. Balfe's new opera, "The Rose of Castille," has been produced, coupled with the admirable singing of Miss Pyne and Mr. Harrison, has done much towards obtaining the full measure of success which attends it. The scene for the first act is the outside of a Spanish Posada, with pent house over the gate into the yard, and a mountainous background, very nicely painted and put together. For the second act we have a Moorish interior; whereof the floridly ornamented gates are noticeable. The music, lively and graphic, is amongst the best Mr. Balfe has produced, and the efforts of Mr. Hooley, Mr. Weiss, and Miss Susan Pyne, in addition to those of the principals already mentioned, deserve the warmest praise. Here we have the work of an English composer interpreted by English singers, with the orchestra admirably conducted by an English musician, Mr. Mellon; and all those who pretend to sigh over the want of high music talent amongst us,

\* The Glasgow papers state that Sir Benjamin Hall, as Chief Commissioner of Works, has ordered the removal of two stained-glass windows recently set up in the crypt of Glasgow Cathedral, and they are very angry thereat. We have not heard the grounds for the order.



and a national lyrical stage worthy of the country, should show they are in earnest by supporting the undertaking at the Lyceum.

**Jullien's Concerts at Her Majesty's Theatre.**—Foremost amongst the causes which have fostered the growth of a taste for superior music amongst the masses in this country, must be placed Jullien's Concerts. The provision of the best music for the public at small cost is no trifling good, and those who provide it deserve our earnest support. There was a little want of spirit perceptible in the performances, and enthusiasm in the audience, a few nights ago; but the new "Indian Quadrille," which will have been produced before the appearance of our number, will doubtless bring both back, and fill the house to the close of the necessarily short season. The band is admirable.

#### RECENT PATENTS.\*

**L. J. BRETHON.**—*Improvements in Machinery for Manufacturing Draining Pipes, Bricks, Tiles, and all other similar Plastic Articles.* Dated Jan. 10, 1857.—This machinery is applied to the manufacture of solid or perforated bricks, &c. having a regular cross section. A vertical screw revolves in an upright cylinder. A rotary motion is given to the helix, by horse or steam power, and the clay is thrown into the upper box of the cylinder as it dug from the ground, without any other preparation than that of being mixed with water: it is ground, mingled, and freed from hard or filamentous substances, and finally forced down through side-moulding apertures.

**GEORGE TOMLINSON BOUSFIELD,** Sussex-place, Loughborough-road, Brixton, Surrey.—*Machinery for compressing Clay and other Materials applicable to the Manufacture of Bricks and other Articles.* A communication. Dated March 5, 1857.—In this invention moulds are employed which correspond in form to the article to be formed from the clay or other material by compression. One, two, or more of these moulds are attached to a mould-carrier, which is moved up and down between suitable guides by an eccentric on the main axis of the machine. The moulds carried by the mould-carriers are bottomless, and into them fit pistons or plungers which receive motion from cams placed on the same axis as the eccentric before mentioned, and there are also other pistons or plungers attached to the top framing of the machine, which enter the moulds when they are moved up by the eccentric.

**SAUEL HEMMING,** Bow, Middlesex.—*Material for Roofing or other Building Purposes.* Dated March 21, 1857.—This invention consists in forming from pulp produced from the fibres of straw, grass, hemp, wood, or other similar vegetable productions, by any of the well-known processes at present in use, plain, figured, or corrugated surfaces of material from the said pulp, by causing it to be placed in any convenient manner within dies or moulds of suitable shape or construction corresponding to the form required, until sufficiently dried and hardened (by pressure or otherwise) for removal, the said surfaces being subsequently rendered impervious to moisture by any of the usual preparations.—*Not proceeded with.*

**W. SWAIN.**—*Improvements in Heating and Ventilating.* Dated Dec. 27, 1856.—Claims: 1. Heating and ventilating rooms and buildings by means of a tubular chamber situated at the back of a grate or stove, the heated air and products of combustion from the fire being made to pass through tubes in the said chamber, and the air delivered into the room from the external atmosphere being heated by contact with the exterior of the said tubes. 2. Withdrawing the warm and vitiated air of the upper part of the room, and delivering it through perforations at the back of the grate, so as to promote combustion and prevent the formation of smoke. 3. The construction of detached tubular chambers to be used with grates and stoves of the ordinary construction as described. 4. A method of heating hot-houses and conservatories, and charging the heated air supplied to the same with the vapour of water. 5. A method of constructing hot-air chambers. 6. A method of ventilating kilns and hot-air stoves.

**J. BIRD.**—*Improvements in the Manufacture of Articles suitable to be used as Window-heads and Sills, Lintels, and other similar Parts of Buildings.* Dated Jan. 19, 1857.—This consists in manufacturing articles to be used as window-heads, sills, lintels, &c. from fire or other clay, in a dry or nearly dry state, by forcing it into a mould by a great pressure. The articles thus moulded are burned in a kiln, in which are three or more walls or supports, across which the articles to be burnt rest, being kept apart by separating bricks. At the front of the kiln is a screw, which, as the articles shrink during the burning, is used to force forward a block long enough to rest on

all the supports, so as to keep the articles constantly in contact with the separating bricks, and never leave them room enough to twist or get out of shape.

**E. CLARK.**—*Improvements in Floating Docks.* Dated Jan. 19, 1857.—This consists in arranging a floating dock so that it may be sunk to receive the ship, and afterwards be floated by pumping the water from the space between the side of the ship and the interior side of the dock.

**W. R. BOWDITCH.**—*Improvements in the Manufacture of a Compound to be used as a Varnish for Water Colours, and as a Carrier for Water Colours or Paints.* Dated Dec. 29, 1856.—The patentee takes of milk 1 gall. of hard soap, 2 lb. and of common alum, 1½ lb. The soap is sliced thin and put into the milk, which is heated to about 120 deg. Fahr. and the mixture is stirred until the soap is dissolved. The alum is dissolved in the smallest quantity of water possible, and is then added to the mixture of soap and milk, and thoroughly incorporated by stirring. The mass is next ground fine in a colour mill. When ground the semi-fluid mass is washed with water until the wash water hardly reddens blue litmus paper. It is then left at rest until the water at the top is clear, and this is run off. More water is then added, the whole mixed, left to settle, and the clear fluid drawn off. This is repeated until the clear water on the top of the thick white mass hardly affects blue litmus paper.

**N. C. SZREBIMEY.**—*Improvements in Preparing Combinations of Materials for rendering Walls and other Structures Waterproof.* Dated Jan. 2, 1857.—These improved "Greek cements" are produced thus:—The patentee takes water, blood, ground bricks, powdered copper slag, powdered iron slag, argillaceous earth, and gaseous matter produced from milk. These are boiled together, and called compound No. 1. In a second compound are employed gas or coal tar (or linseed oil, resin, or asphalt), gas or coal tar, and calcined flint. These are hydraulic lime, grit, and calcined flint. These are boiled, and are then, by an iron ladle, transferred to a second iron pot, so that the air may come freely in contact, and after the mixture has cooled, it is again boiled until it spontaneously bursts into combustion, and after it has burned a very short time the fire is extinguished by a close fitting cover. This preparation is called No. 2. These cements, though capable of separate use, are preferred to be employed in succession on walls or other structures.

#### Miscellaneous.

**A CAMBRIAN MONUMENT.**—A deputation from the Liverpool Cambrian Society recently attended at Pils Madoe, near Rusbon, the seat of Mr. G. H. Whalley, for the purpose of viewing the site on the Eglesweg plateau, offered by that gentleman for the erection of the Cambrian monument in honour of Prince Llewelyn, and the Cricman and other heroes of Wales, including those now fighting the battles of their country in India, and of all Welshmen entitled in times past "or to come" to the respect and gratitude of their countrymen. On the spot they were met by a committee of the National Eisteddfod, to be held at Llangollen in September next. Mr. Whalley stated that Lady Hall, and others of influence, were warm supporters of the movement. The company then adjourned to a tent on the apex of the mountain, where various appropriate resolutions were passed approving of the project and promulgative of it.

**THE BROTHETON MEMORIAL.**—You have done good service to the public by giving a view of the Brotheton Memorial, and as one interested in good monumental works I am especially glad; and if I may venture an opinion, I would pronounce the lower and the upper part as decidedly good. The centre or middle portion, however, shows such an evident amount of weakness, that it would be well for the architects and committee to reconsider this portion. I would suggest to strengthen the supports by (instead of one column at the back of figure), three in the form of a trefoil. Their junction also with the lower part is poor, and has a certain meanness about it, and to get rid of this I would add a pierced parapet immediately over the cornice; and these, instead of detracting from, would add to the beauty of the design, and the small amount of extra expense would be for the committee hardly worth their consideration.—W. L.

**THE GURNEY TESTIMONIAL, STRATFORD.**—The design of the "Gurney testimonial" has been prepared by Mr. G. A. Dixon, surveyor to the Local Board of Health, says the *Chelmsford Chronicle*, and will be submitted for the approval of the provisional committee prior to a public meeting of the inhabitants which will be convened at an early period, when it is expected the design will be adopted, and a subscription promoted for carrying out the object. The site for the erection of the obelisk is the Broadway, Stratford, the west end of St. John's Church.

**INSTITUTION OF MECHANICAL ENGINEERS.**—The general meeting of members of this institution was held on Wednesday in last week, at the Institution, Birmingham; Mr. S. Lloyd in the chair. Several new members were elected, and the president, vice-presidents, and members of council, were nominated for election at the ensuing annual meeting. The first paper read was a "Description of Naylor's Improved Steam-Hammer," by Mr. Charles Markham, of Derby: the next was, "On Lighting Railway Trains with Gas, with a Description of Mr. T. J. Thompson's System," by Mr. J. Kitson, of Leeds: the last paper was a "Description of a Ventilating Apparatus for Buildings," &c. by Mr. Samuel Thornton, of Birmingham. After the meeting, a hydraulic engine, by Mr. David Joy, of Leeds, was shown at work, designed to be used as a simple and convenient motive-power for several purposes where steam-power is objectionable, or not available.

**NON-CONSUMPTION OF SMOKE.**—Mr. William Jackson, the extensive builder upon the Gore Estate, at Kensington, was last week summoned to the Hammersmith Police Court, for not consuming the smoke of a temporary steam furnace at Gloucester Lodge, used in sawing timber. Mr. Walls, his manager, appeared in his place, and it was stated on his behalf that he was not likely to do anything willingly to injure a property on which he had a million of money at stake. Plans showing the buildings erected, and to be erected, in Prince Albert-road, with a view of the new entrance into Hyde-park, were exhibited, in order to show the value of the interest Mr. Jackson had in the property, and it was stated that no expense would be spared to consume the smoke. The minimum penalty of 40s. with costs was inflicted and paid.

**THE BIRMINGHAM BOROUGH SURVEYOR.**—A special meeting of the council of this borough has been held to take into consideration the resolution passed, which recommended the dismissal of the borough surveyor, Mr. Pigott Smith, on account of his refusal to appear before them, to answer questions on the matters in dispute between him and the council. The confirmation of this resolution was moved by Mr. S. Briggs, and seconded by Mr. Brinsley. Alderman Hodgson moved an amendment in favour of inquiry into the charges, and Mr. Sturges one requiring the resignation of the borough surveyor; but the original motion for dismissal was carried by 31 to 20, five being neutral.

**BRISTOL MINING SCHOOL.**—The first lecture of the session was given by Mr. Thomas Austin, C.E., on "Surveying and Drawing Instruments." Much importance was at one time attached to the introduction of several wires into the warp of the wire tape; but as these wires were necessarily converted by the wool into helices in the process of manufacture, this tape was more liable to stretch than the ordinary tape. The double linen tape, with ribbed warp, was the least objectionable of any of the tapes, and was very useful in taking offsets, or amongst buildings, or other intricate work. The American rule was an implement usually made in yard or two-yard lengths, in pieces of horn or whalebone, four or six inches long, about half an inch wide, and one-sixteenth of an inch thick, and made to adhere together by the application of tin glue: they were then reduced to their proper form, and the inches marked off upon one of their surfaces: at these marks a hole was drilled, through the entire number, and a silver wire drawn through the holes. These, when completed, were remarkably correct. Offset rods and staves, station staves and surveying arrows, and angular instruments used in field work, were next described; also the plane theodolite, the circumferenter, and its various improvements, the theodolite, quadrant, sextant, &c. &c.

**THE JOINERS' STRIKE AT MANCHESTER.**—Since our last notice of this strike, three of the local architects, of long standing, Messrs. Richard Lane, William Hayley, and Isaac Holden, have offered to act, in conjunction with the mayor, as arbitrators in the dispute, and the master builders have at once unequivocally accepted the arbitration, and agreed to abide by the decision of the arbitrators. The committee of the workmen, in their reply, however, merely thank the architects named, and refer them to a copy of another letter addressed to the secretary of the masters' association, in which they speak of a deputation being "prepared to meet a deputation from the builders and the gentlemen you name in your letter to settle this dispute," at the same time announcing a "resolution" they had just come to, "to equalize the working time at the rate of fifty-six hours per week the year round, or otherwise adhere to the rules last issued by the operatives, viz. 58 hours in the summer months, and 53 hours in the winter months." This, therefore, is neither a frank acceptance nor an equally frank refusal of the proposed tribunal, and is too like the fast-and-loose understanding of some previous arbitrations of a similar kind we have some recollection of, to yield, we fear, any satisfactory result in the present strike.

\* From the lists published in the *Mechanics' Magazine* and other journals.



# The Builder.

Vol. XV.—No. 772.



NATIONAL Art-Education, and the machinery for effecting it, are matters of no trifling moment, and call for serious attention.

The statements made by Mr. Redgrave at the distribution of national medals concerning the expense of teaching drawing in parochial schools, and the instructions for those who wish to obtain the services of an

art-certificated master, seem to have created among the masters in connection with the Department of Science and Art a feeling of insecurity, and, according to the letters which have appeared in our pages, and a dozen which have not, no small discontent also.

It may be well, at some future time, to examine this and other matters in connection with it thoroughly, in order to discover the real facts concerning it, as well as to take a general view of the means that are being employed for the spread of art-education by the department. At present let us take a cursory glance.

There are two classes of masters of schools of art. One is composed of those who, under the School of Design system, received appointments with an annual government grant made towards their salary; the other, of men who have been trained in the central school in London, and receive their appointments from the Department of Science and Art; the contribution towards the salary of the latter being in the form of payments on certificates of competency awarded by the department. Thus, a man who possesses certificates for one branch of art, receives 10*l.* annually; possessing certificates for two branches of art, he receives 20*l.*; and so on. The practical difference in the allowance to the two classes is, that a master appointed under the School of Design may receive 300*l.* a year from Government, and one who holds his appointment from the Department (if he is a very clever fellow) may receive 30*l.* It is the latter class who will be affected by the new regulations; and, as they are the types of all future school-of-art masters, what affects them will affect all future appointments. There is also another difference in the position of the two men; for, whilst the fortunate possessor of an appointment from the School of Design teaches only in his central school, and in what other places, on whatever terms, he chooses,—the departmental master has to work a fixed number of hours per week, in whatever places, and upon what terms, the School of Art committee and other people arrange for him. It would be thought from this that the recently-appointed teachers are inferior men to their seniors in office, but a glance at the subjects for examination for the higher certificates obtained by the former, and a comparison of the condition and operations of the lately-established with the older schools, will lead to a very different conclusion. Here then are two sets of men engaged in the same occupation, but not with the same amount of work, and vastly disproportioned remuneration. Those who work the hardest, and have the least pay, are fearful, and it may be not without some cause, that the new regulations will still further diminish their salaries; at the same time asking that all masters doing a certain amount of work shall have

equal remuneration. This is a subject well deserving the careful consideration of the Department; and when it receives such consideration, it is to be hoped that the Department will be no longer bound by the grave-clothes of the School of Design, but on its own responsibility settle the matter equitably for both sides.

But without entering deeply into the matter, let us see what are the functions of the art-certificated master, and take an impartial glance at the position in which he is placed.

The avowed object of the Department is the art-education of the people, the opening up of new thoughts, and the placing in the hands of the lower classes a medium of expression and a weapon for work which have hitherto not been possessed by them. The obvious reason for this is, that it must necessarily increase national prosperity; for, by making us a more artistic and a more intelligent people, by teaching us the relation that thoughts bear to things, in cultivating the one and facilitating the production of the other, we become more independently powerful, more productive, and, consequently, more wealthy. This is the business view of the case, and one, too, not to be neglected. Another aspect which the work of the Department may assume is a moral one. The possession of a good eye and an educated hand must necessarily carry with it something besides its mere mercantile value. It is a key to the ignorant, by which they may unlock for themselves the door of beauty, and lay open to their eyes the inexhaustible treasures of nature. Indeed, the possession of a cultivated perception is an incessant note of interrogation to all that is passively beautiful in nature or wonderful in art. And however much we have hitherto ignored the fact, yet the ultimate influence on the lower classes of a knowledge of the beautiful, and of the capacity for its admiration, must be to strengthen the moral faculties. Thus the results of art-education will be both to put a tongue into our fingers by which we may express form, and cause a recoil on our minds which must generate thought and inquiry.

The means for all this are as yet necessarily experimental. It has been found that the schools of art and design have not attained the object in view: it becomes, therefore, a question as to what means are to be adopted for its attainment, and under what circumstances. The trained and educated master of art (in its truest and not its conventional sense) is regarded as the most fitting person to achieve the looked-for result, and upon his shoulder is placed the *onus* of the task. This is natural. But when a man has spent the best years of his life in mastering a difficult profession, often at great sacrifice of other prospects, and finds himself possessed of so subtle a weapon as art-power, he rationally looks for some return for his long labours, as well as a recognition of his professional position. To labour patiently in the mission of art-education is his expected task, but to do so without adequate remuneration he has not looked forward to. Here a difficulty presents itself. Our means of extending art influence to the lower classes are through the ordinary parochial schools; and such schools are not in a position to pay professional prices. How then are the masses of the people to be reached? The majority of our country towns are not able even to—or, at least, will not—support a school of art, which is the recognised focus from which art-teaching must radiate; and, without this, how are we to make art-education general? To meet these difficulties, it is evident that at first we must couple the general education in art of the people with the special art-education of particular persons, in order to create remunerative positions for those who have the non-remunerative task of the instruction of the people; and, inasmuch as art-power is socially and commercially a great

good, we must not be too chary, at first, of making such positions remunerative by Government assistance. The man who has been severely trained in the Government's own school, at some expense both to himself and his country, must be made the means of this good to his fellow-countrymen; but, like other men in similar positions, he must be paid for it; and, if we are to expect able, efficient, and intelligent men, they must be paid equivalently to their professional position.

So much may be said for the future masters of schools of art; but, in all justice, let us look at both sides of the question.

It is a mistaken notion to suppose that the certificated art-master is to be the perpetual teacher of drawing in parochial schools. From the fact of its being impossible as a permanent business speculation, we may decide it is not to be the case; and it is his own fault, and worse than his fault, if he does not make it a means to an end, and not the end itself. In a country town where a school of art may be established, he must be the teacher of such schools for a time, because there is probably no one else besides himself who will teach it as systematically and well as himself. But, as he progresses, he will raise the means of shifting this arduous duty from his own shoulders to those of others, who together will be better able to discharge it.

And in this manner the schoolmasters and pupil-teachers in every national school, in or near the town, should be compelled, as a part of their work, to attend a class for their special education at the school of art. The fact of teaching drawing in their schools increasing the salaries of the schoolmasters to the extent of 8*l.* for each school taught, will help to impress upon them the advantage of the power; but at any sacrifice they must be made to learn drawing, in order that they may teach it. They are the fittest persons to teach it to young children; because, from experience, they are well able to impart instruction, and have the greatest power over their pupils: and as for the most part they are well educated and intelligent men, the task of acquiring the power of drawing will be comparatively easy to them.

Thus, then, in time, will the art-teacher raise up to himself the disciples who will help him in his mission. But in the interval, whilst he is labouring for a common good, he should not be made a sacrifice, which would be a most suicidal proceeding, inasmuch as it would certainly result in thinning the ranks of the best men, by giving them fair cause for desertion to a more grateful field of enterprise.\*

Let each man who is sent out to a provincial town be paid liberally, according to his standing, from the annual Government grant to science and art; and let this continue for a limited period, say one or two years, as the case may be. At the end of that time he ought to have made himself a position, independent of the greater part of State assistance, and should then be made the local inspector of art-teaching in the neighbourhood; for by this time we have supposed that the work, in parochial or non-remunerative schools, has been undertaken by his own pupils: he then has to see that his machinery works well, and keeps in good order, and also to attend to his central school of art. By this means we might spread art-education over a larger surface than our present system does; for, amongst the schoolmasters taught to draw, should be included those within a moderate distance of each town, and whose schools might be periodically inspected by the local inspector. Surely among other experiments this might be fairly tried in cases which would fathom its advantages.

\* Not an uncommon case even now.



## THE FUNCTIONS OF THE SCIENCE AND ART DEPARTMENT.

A SERIES of lectures on the Department of Art and the Museum at Brompton was commenced on Monday evening last, in the new theatre there: the lecturer was Mr. Henry Cole, C.B., and the subject the Functions of the Department. It was an interesting statement, and will be made generally accessible by being published for one penny. We would gladly print a considerable portion of it, but are forced by the multiplicity of matters which press upon us to confine ourselves to two or three paragraphs.

Of the state contributions for promoting public education, Mr. Cole said, —

"The total national expenditure for promoting Public Education and Science and Art in every way through the primary division of the Education Board, the British Museum, National Gallery, grants to Universities, and grants to this Department, may be taken, at the present time, to be in round numbers a million of pounds sterling, which divided among our population, say, of 30,000,000, makes the contribution of each to average ninepence per head per annum. It is difficult to calculate the annual value of the production of this country; but I think, seeing that our imports and exports last year amounted to 288,545,650*l.*, it is not an over-estimate to place it as being worth 400,000,000*l.* a year. The state contribution towards Education, Science, and Art, which vitally influences this enormous amount, therefore, bears the proportion of the outlay of one pound on behalf of Education, Science, and Art for every 400*l.* of production, or one penny in every 1*l.* 13*s.* 4*d.* The annual Parliamentary vote for the Science and Art Department only, being under 75,000*l.*, is less than a five-thousandth part of the estimated annual production, and is about a thousandth part of the annual taxation of the country. It is as if a man with 1,000*l.* a year devoted 2*d.* 6*s.* 3*d.* a year to the general education of his children, and gave them the additional advantages of drawing-lessons and a little navigation, at a cost to himself of 8*s.* 9*d.* a year. In the same proportion the agricultural labourer, who earns only 25*s.* a year, devotes 1*s.* 3*d.* to the education of his family, and has to deny himself the luxury of half a pint of beer in a year in helping his children to a knowledge of drawing, and enabling them to cut and rule straight lines.

It may be pointed out as a coincidence at least worthy to be remembered by any who oppose State aid towards education, that whilst democratic power in this country has increased, so a demand upon the Government to exercise certain new functions has increased also. As the people have felt their wants, and have had power to express them in Parliament, so the central authority has been called upon to administer to these wants, and it is the Government itself rather than the people which has endeavoured to obtain and preserve as much local co-operation as possible. This has been the case especially with the subjects of public education, in which, so far as I have observed, it is the complaint of localities, and particularly where the jealousy of local authority is hottest, that the Government does not do enough for them. The Education Boards in England and Ireland, the Schools of D. sign, and the greater number of the grants for promoting Science and Art, have all arisen since the passing of the Reform Bill in 1830. It was rather the influence of the Crown that created the Royal Academy in 1768 than any public demand. And so feeble was the expression of public opinion through the Commons' representatives in 1810 on the subject of Public Galleries, even if it existed at all, that the then Chancellor of the Exchequer is said to have refused to accept the Dulwich Gallery of Pictures as a gift to the nation, on the condition of housing and taking care of the Pictures. Last year the Government, through Lord Stanley of Alderley as President of the Board of Trade, built a structure on their own responsibility to secure Mr. Sheepshanks' munificent gift of pictures, valued at 60,000*l.* and Parliament afterwards cheerfully voted a sum under 5,000*l.* requisite for its cost. In half a century such has been the change of public opinion in respect of National Galleries of Pictures."

"The number of Navigation or Science schools of all kinds at the present time in connection with the Department is twenty-two. The number of Schools of Art throughout the United Kingdom at the present time is sixty-five; and, according to the last returns, they were the means of educating upwards of 35,000 students in drawing and painting. These numbers include children in poor schools under instruction in drawing. Since the Schools of Design were expanded into Schools of Art, and made to embrace the teaching of drawing in public schools, the progress has been as follows:—In 1851, 3,296 students learning drawing cost the State 3*l.* 2*s.* 4*d.* each. In 1856, 35,000 students cost the State about 15*s.* each, as nearly as can be estimated. But this number is really insignificant,

being a trifle more than 1 in 1,000 of the population, and it is disheartening to feel that, according to the present state of public feeling for Art, perhaps half a century must elapse before every mechanic will have had the means in his youth of acquiring those elementary principles of Art which would improve the daily work of his future life."

Speaking of the contents of the Museum, he said that many of the things exhibited had been either altogether hidden previously, or inadequately exhibited:—

"The architectural collections belonging to the Department for years were buried in the cellars of Somerset House, and were but most imperfectly shown at Marlborough House. The prints and drawings possessed by the Department have never been seen by the general public. The casts of the Architectural Museum are surely better displayed than in Canon-row. The union of these collections, and the addition of the models of St. Paul's and various classical buildings, betoken what an Architectural Museum may become, if the individuals and the State will act together. Every foreigner who has seen this commencement sees in it the germ of the finest Architectural Museum in Europe, if the public support the attempt."

And he added, "The Iron Museum is only to be regarded as a temporary refuge for the destitute."

## CANNING TOWN AND HALLSVILLE, WEST HAM.

THE recent outbreak of cholera in this neighbourhood has led to further efforts on the part of some of the clergy and more influential inhabitants to obtain improvements in the drainage of the place, and such other mitigations of its miserable condition as may render the development of disease less likely. At the commencement of the year a petition had been forwarded to the Secretary of State for the Home Department, setting forth, —

"That the houses in the district have, for the most part, been built without any regard to the health or comfort of the inhabitants.

That the district is a marsh 7 feet below high-water mark, the tide of the Thames being only kept out by the river-wall. It is wholly undrained, and intersected with overflowing and pestilential ditches, which are the only outlet for all the sewage and filth of the neighbourhood.

That the health of the neighbourhood has already suffered much from the neglect of proper precautions, the proportion of deaths to the population being frightfully large."

And earnestly praying, —

"That immediate and independent measures be adopted to carry off the sewage from their houses, and the stagnant water which accumulates on the surface of the soil."

There was a correspondence in consequence between the General Board of Health (to whom Sir George Grey referred the petition), and the West Ham Local Board of Health, but nothing was done.

A few weeks ago the cholera appeared in the parish, and carried off several of the inhabitants. The gentlemen who had moved before—the Rev. Mr. Marsh, the Rev. Mr. Mason, and Mr. Antonio Brady—immediately addressed the Board of Health again, and said, in the course of their communication; —

"Public attention has been lately called by your Board to the near approach of cholera. At least seven fatal cases have already occurred in this parish, and a heavy responsibility attaches to those who have neglected the warnings of experience, and allowed the present state of Hallsville to continue. It is not for us to suggest remedial measures, but we would, nevertheless, most earnestly entreat you *at once* to send an inspector (unconnected with the neighbourhood) to report upon the sanitary state of West Ham, and especially that part of it lying in the Plaistow marshes."

They further urged that the inspector should instruct the Local Board as to the precautionary measures necessary now to be taken, and they suggested that advantages would follow "if the provisions of the Metropolitan Building Act were extended to West Ham." This was on the 16th ult. The President of the Board, the Right Hon. Mr. Cowper, went down immediately, and found houses without drainage, without ventilation, without water-supply, except of the worst description, ditches presenting an evaporating surface of the foulest

kind, and the roads a mass of mud and filth; the whole being a marsh 7 feet below high-water mark. In Vicarage-terrace the only drain available is a sink under the pump, into which they habitually empty all the slops of their houses! The sink communicates with the well, and the people have no other water to drink! The Board have addressed the Local Board of Health, calling upon them to take "immediate and effective measures for removing, or at least for mitigating, conditions so conducive to the development of the disease, under which most of the inhabitants of their districts are placed." At any cost, something should be done immediately.

We are not now approaching this place for the first time. Nearly two years ago we described the imminently dangerous position of Canning-town, and in our fourteenth volume (p. 99), gave a sketch, showing that "the artificial bank of Bow-creek, and the embankment of the Thames, are all that prevent the houses here from being flooded every high tide." We pointed out that it was impossible to provide for the drainage of the place by the ordinary means, and said,—"The houses here have been erected without the means of either carrying off the refuse or properly getting rid of the damp. In the course of time the debris of these and other houses will raise the level; but it is sad to think of the sacrifice of human life which must take place in the mean time without prompt measures." Again,—"If something is not done, in two or three years the ground will be poisoned by cesspools, water will stand on the surface, and evils of a serious nature will follow." "Let us hope for the introduction of measures proportionate to the extent of the future requirements. Flesh and blood are precious materials."

The measures were not taken, and the evils have become more apparent: again, therefore, we call for remedial measures. The erection of dwelling-places in such a position should not be permitted. Being here, their owners must do what can be done to save life. Flesh and blood, as we before said, are precious materials, and the country cannot afford to indulge in preventable disease, involuntary demoralization, and premature deaths.

## MEMOIR OF LOUIS VON ZANTH, ARCHITECT.\*

THE death of a distinguished brother architect, and more particularly of one who has been a corresponding member of our body and a liberal contributor to our collection, demands some notice on our part. I feel it, therefore, to be a duty which devolves on me as your secretary of foreign correspondence, to seize as early an opportunity as possible to pay that respect to the memory of our departed colleague, Herr Zanth, who has by his works well merited a page in the history of our art.

I have reason to believe that he was born about 1798, at Breslau, in Silesia, and was consequently a Prussian subject. His father was an eminent medical man, and chief physician to Jerome Buonaparte during the residence of that sovereign at Cassel. Louis was educated partly at Cassel and partly at Paris, and, it is supposed, was a pupil at the Lycee Napoleon. Having evinced a decided taste for drawing, he was placed at Stuttgart, where his widowed mother resided, under the architect Fischer, professor of the Polytechnic School in that town. About 1819, Zanth went to Paris, and became the pupil of Monsieur Hittorf, and although he had then made little progress in composition, he showed an evident bias for decorative detail and great purity of drawing. He followed his excellent master's advice, and took part in the competitions of the School of Architecture; but being of a reflective and deliberative turn of mind, which cannot at a given moment command the imagination, and hence under such a pressure becomes faltering and undecided, he was never able to improvise with sufficient rapidity, and could not accustom himself to the excitement, bustle, and clamour to which the impressionable youth of our neighbours yield when engaged in such exercises. This circumstance affected his conceptions, and although his "projets" were drawn out with the most elaborate care, he never could carry off a medal. But when left to himself, and to the quiet of his own leisure and reflection, his designs were

\* Read by Professor Donaldson, at the meeting of the Institute of Architects, on the 16th, as mentioned elsewhere.



admirable, and evinced considerable originality and careful treatment.

Zanth from the pupil became the assistant of his friend and master, and in 1823 both went to Sicily, with the view to investigate fully and thoroughly the antiquities of that island, which as yet have never been adequately illustrated, numerous and costly as are the works, and learned as are the authors, treating upon its ruins. During their stay, Messrs. Hittorff and Zanth were struck by the beauty of the numerous buildings erected since the Greek times, and which adorn the cities of Messina, Catania, Palermo, and other places, erected by the different conquerors of the island, since it was in the possession of the Romans. They, therefore, took accurate drawings of the churches, palaces, monasteries, hospitals, public fountains, private houses, as also details of altars, tombs, pulpits, stalls, and other decorative embellishments in the churches, which are marked by a happy freedom of design, novelty, and effective combination. The work, which appeared in the joint names of the authors, was specially edited by Mons. Hittorff, in numbers, between the years 1826-35. The choice of subjects is extremely varied, containing examples of Moresque, Saracenic, and Byzantine, as those of Palermo and Mon Reale, and embracing every period of modern architecture without an exclusive adherence to any. The execution of the work is in outline, and may be cited for the judicious selection of the subjects, the purity of the drawing, and exquisite character of the engravings.

At the same time appeared many works of their work on the ancient monuments. It is to be regretted that this valuable publication has been suspended from the want of particulars to complete their previous studies, which a personal visit to Sicily can alone satisfactorily supply. It is to be hoped that the survivor may accomplish what still remains a desideratum—a work on Siculo-Grecian architecture, rendered complete by the light of modern researches, and the experience and learning which have, of late years, been brought to bear on works of this class, and for the elucidation of which no one has proved himself more competent than Monsieur Hittorff.

Zanth was especially struck by the peculiar magnificence of Mon Reale, and the Eastern aspect of the Capella Reale and of the palaces of La Zisa and La Cuba, at Palermo, of which he subsequently made some splendid and elaborate coloured views to a large size; and in fact this style of art seems to have had a decided influence on his future artistic taste. In 1830 Zanth quitted Paris to seek a new sphere of employment, and returned to Stuttgart, where he constructed many charming town and country houses, perfectly adapted to the convenience of the occupants, elegant in detail, picture-que in their masses. These erections, and some of his beautiful drawings, were brought under the notice of the king, who immediately appointed him as his architect, and commissioned him to make drawings for a theatre to be attached to the palace; but which, unfortunately, was never executed.

His royal patron was desirous to form for himself a kind of special personal retreat, or suburban villa, at which he might occasionally retire for the day, or a few hours, like those of the papal families in the neighbourhood of Rome, as the Villa Papa Giulio, or those at Frascati and Tivoli, or as is found in various parts of Germany; or “*magna conopsea parvis*,” like that at Chiswick, belonging to the Duke of Devonshire. It was to consist of a principal casino, hot-houses, and conservatories; porches, kiosks, a belvedere, ball-room, theatre, and domestic offices, connected one with the other by the general distribution of the garden, which was to be adorned with parterres, pieces of water, and fountains. The Wilhelm is situated at the extremity of the royal park of Rosenstein, at a league from Stuttgart, and near the town of Cannstadt, famous for its mineral waters, and the gardens extend down to the Neckar. The style selected by his sovereign was the Moresque. The plot of ground appropriated to the Wilhelm lies on a hanging level, rising from the Neckar; and Zanth found great difficulty in combining its various parts with the grounds of Rosenstein, which had been laid out by an ignorant gardener, without any reference to the undulations of the surface. In order to make himself acquainted with the most celebrated hot-houses in England, he came to this country, and visited those of Chatsworth and others, and also studied the application of iron to the various purposes of the forcing-houses, as also its fitness for the arcades, cupolas, kiosks, and columns of the porticoes.

On the occasion of this visit he exhibited his magnificent series of Sicilian drawings in these rooms, and was elected an honorary and corresponding member of our body. The studies of the Wilhelm were commenced about 1835: it was the favourite theme of his future existence, the one great object upon which he employed the remaining years of his life. His time, his health, his talents, and his means were

all devoted to it: it absorbed all his thoughts and aspirations; he seemed to live for it alone, with a chivalrous love for his art. I have said that the king selected the Moresque style for the architecture of his villa; a style which has not in our days been adopted for an architectural monument of any importance. With the exception of the edifice called the mosque, in the Schweitzingen gardens, near Mannheim, no serious attempt has been made to reconcile the forms, combinations, and decorations suited for one climate, so as to be adapted for another essentially different. The volume of Owen Jones was the only authentic reference for such a style; but of course it is evident, with even this admirable illustration of Moorish work in the Alhambra, that much must be left to the imagination, the taste, and the discretion of the architect, to harmonize the fantastic poetry of the style, its brilliant decorations, and its piquant individuality, with the ordinary wants and conveniences of modern European life. Our friend did not fetter himself by a slavish adherence to precedent, nor neglect any means of success; and he employed stone of various colours from the adjoining quarries for the principal buildings, rich coloured brick for the offices, and cast iron for various details. The Wilhelm presents a conscientious mastery of difficulties, and the triumph of the architect was assured when the most renowned sovereigns of Europe, attended by their numerous brilliant suites, found themselves in the casino, the conservatories, gardens, and porticoes, brilliantly illuminated, and reflecting the exquisite decorations, which, harmoniously distributed throughout, charmed the eye and satisfied the taste. And although the magician who had created the fairy scene was not there, his master spirit delighted the brilliant circle assembled in this truly royal villa.

Zanth has published ten chromolithographic illustrations of Wilhelm, drawn with the most elaborate patience, truly German; and they were executed by the most eminent lithographers in Berlin and Paris. He spared no expense to insure the most brilliant result, and one of the plates, the general view, required twenty stones. The French government, with a liberality that does honour to its love and patronage of art, subscribed for forty copies: it were to be wished that our own government felt more alive to the expediency of encouraging in a like manner publications of this class. He presented a copy of this costly work to our library.

A wealthy landed proprietor in Hungary sent for him to make the plans for a large village, with houses and farms of different sizes, a church, and other public buildings, in connection with the restored castle of the lord. These designs are of the greatest interest; for he scrupulously studied to make them conform to the materials at command, brick and wood, which were alone procurable in the country; and he gave them a national character, elevated by elegant and appropriate combinations and proportions, without departing from simplicity and utility.

Zanth's health had of late years yielded to the unremittent toil with which he followed his art; and absolute rest being necessary, he last year visited Italy with Mons. Hittorff and family. His anxious friends had hoped that he might have enjoyed an elegant repose amidst scenes without the fatigue of thought, and that the fire of his genius might have been rekindled by the renewed contemplation of the noble works of that classic soil. But the tone of his early energy was gone; the languid invalid looked without emotion at those monuments which he had once regarded with the liveliest enthusiasm, and his residence of some months at Rome was one of suffering and discomfort. While there he received instructions from his king to design a Protestant church, to be attached to the royal palace. This he completed, not without great effort, after the Basilica type, and, on his return in June last, presented it to the king, who approved of the conception, and the church was decided to be carried out as designed by him, and to be commenced early in 1858. He had also completed some time since the drawings for a Roman Catholic church, which it was recently intended to erect after the concordat entered into between the King of Wurtemberg and the Pope.

The death of this distinguished architect occurred on the 7th of October last, and was attended by circumstances which may remind us of the hero cut off on the field of battle, or the chaplet-wreath bound round the head of the expiring victor in the Olympic games. The Emperors of Russia and of the French met as guests at the court of the King of Wurtemberg, and this prince, wishing to do all honour to the sovereigns, gave a splendid fête in the rural palace of the Wilhelm. The monarchs, surprised and delighted with the magnificence and taste of the fairy scene by which they were surrounded, and by a style of art recalling the fabled and gorgeous scenes of the Eastern caliphs, rather than the court of a German king, eagerly inquired to whose skill and imagination their host was indebted for the exquisite and varied archi-

tecture around them. They learned that it was Herr Zanth, and that he lay at that moment on his bed of sickness. The Emperor of Russia, anxious to express his satisfaction to the artist, sent Prince Gortschakoff at once to the bed-side of poor Zanth, to present him with the decoration of Commander of the Order of Stanislaus, and the prince himself attached to the breast of the sick artist the ribbon and cross of the order, accompanying the act with the gracious and touching expressions of admiration which the emperor had uttered. Zanth was on his death-bed, but this act of kind consideration soothed the last moments of one whose devotion to his art and amiable disposition had endeared him to all who knew him.

Zanth was an enthusiastic follower of architecture; his predilections were for classic art. He was unrivalled as a draughtsman for the minute accuracy of every part and the finish of every detail. His large perspective drawings were of most scrupulous possible renderings of the buildings they represented; and although they might want somewhat of aerial effect, yet they were always strikingly effective and grandly rendered. He was extremely susceptible in his feelings, and shrinking from observation. In disposition he was most generous, ever ready to acknowledge talent in others, and most firm in his attachment as a friend.

“No man is a prophet in his own country,” and it is to be feared that the noble, upright, and highly-gifted architect of the Wilhelm was not as fully appreciated by those immediately near him, as he was by the sovereigns of other states, and by his professional brethren in other countries, who honoured him as an artist and esteemed him as a man. He had received the Cross of St. Gregory the Great from the Pope; that of the Lion of Zähringen from the Great Duke of Baden; that of St. Louis from the Duchesse Regent of Parma; and he was member of the academies of Berlin, Munich, Milan, &c.

These few notes consist of the impressions produced by an intimate friendship and intercourse of five-and-twenty years; but I am indebted for many particulars to our mutual friend Monsieur Hittorff, who was to him as a brother, not merely in art, but in affection. Zanth was limited in his friendships; his modest and retiring nature made him instinctively avoid numerous attachments; but the few who knew him appreciated the rare moral and intellectual qualities, which made them share in the triumph of his successes, and lament him as one whose loss it is not easy to replace.

#### THE GREAT BELL AT WESTMINSTER.

Few people give anything so liberally as advice, especially in matters which really do not concern them; there being a secret pleasure in imagining they possess more discrimination than the rest of the world. It is now nearly two years since I offered some remarks on the forms, methods of casting, and rigidity of large bells, with suggestions on the subject. I stated that in proportion as the bell is increased in size and weight, so it is less likely to be sound and free from the chances of being easily cracked. If the bell is to be a large one, the metal must be fused at several furnaces, varying in intensity of heat, and some ready for the mould before others; but whenever two or more currents of fluid metal meet, the rudiment of a fracture may be formed, as the chances are that different meetings may vary in temperature, and one will solidify before the other; also that portions of oxide or earthy matter, floating on the surface, may prevent the perfect junction and incorporation of the two streams.

Bells are usually struck by a clapper within, or by a hammer on the outside. Such continued battering upon a large hollow, cast or crystalline substance, perhaps in the first instance not perfectly sound, must, sooner or later, certainly crack the metal. This may happen when the bell is quite new, or it may be used for several centuries before the fracture is observed. A number of comparatively insignificant hammerings or concussions will produce a very surprising effect if continued for a long period. The fracture may, at first, be so trifling as to be almost inappreciable by the most refined ear; but every stroke of the hammer will increase the evil, until the vibrations of the metal are so interrupted, that instead of a long-continued harmonious sound, an unpleasant jarring noise is produced, and the bell becomes useless.

Now that the bell at Westminster is broken, we can readily understand the cause, for we are told by Mr. Denison \* that it was knocked sometimes within, and frequently on the outside, with a clapper or a hammer, from two to three times as heavy in proportion to the bell as any of the other large bells in England, and pulled sometimes by as many as ten men. The reason assigned for this difference in the

\* Proceedings of the Royal Institution, March 6th, 1857. Pp. 2 and 11.



size of the clapper is, that the bell had a much greater power of bearing blows than usual. Suppose, for example, it was required to break a large bell: the mode of procedure would be to strike it with violent and repeated blows from a heavy hammer, till the operation was ultimately successful: then why not expect the same termination in all cases, if the same process be adopted?

The general tone of the learned gentleman, whose name appears so conspicuously embossed on "Big Ben," is to the effect, that he knows more about bells than any one else: this is certainly the substance of his two hours' discourse, delivered, before the bell was cast, at the Royal Institute of British Architects, on the 28th of January, 1856. When the bell was completed, Mr. Denison described it to a very numerous audience, at the Royal Institution in Albemarle-street, on Friday, the 6th of last March, in terms which induced us to believe that he was, in every respect, satisfied with it; that the whole proceeding had terminated precisely as he expected; and, in fact, we were given to understand, that it was the only good bell in the world. Whether this was the case or not, it is immaterial now to inquire: all hopes of that one good bell are ended: it is useless, spoilt for ever, before it had been placed in its final destination; but not before it had been delivered, highly approved of, and paid for out of the public exchequer.

I do not agree with the adage, that "experience makes all folks wise:" some people cannot see folly which is evident to the rest of the world. But I readily admit, that "experience makes wise men wiser:" the greatest philosophers sometimes overshoot themselves; but their mistakes may prove valuable lessons of instruction to those who know how to benefit by them. For this reason, we must sincerely hope that Mr. Denison has learned, by experience in bell-metal, that the old shape, and the old method of manufacturing unusually large bells, is unlimited as to expense, quite uncertain as to the result; and, if ever so successful at first, that they may terminate at any indefinite period: therefore, as the nation has just been at the expense of several thousand pounds, in the expectation of having a good and durable bell, it may not be amiss to remind him that failures, similar to that which has already happened to the Westminster bell, will, in all human probability, occur again and again, if the same form, the same weight of metal, and the same circumstances, generally, be repeated.

Mr. Denison told us, at the Royal Institution, that when HE undertook the responsibility of determining the size and shape and composition of the five bells, the Chief Commissioner of Works authorized the making of such experiments as might be required, before finally determining the design and composition of the bells;—and, further, that these experiments cost about 1007. The great bell can now only be considered as one unsuccessful experiment, causing a loss to the nation, and we are still ignorant of any certain or successful termination: the metal may be recast several times, with the same result; because, in recasting a mixture of copper and tin, weighing sixteen tons, there are difficulties to contend with, little known to any but a bell-founder, or metallurgical chemist; and the expense may not stop at "Big Ben" for, every time he is melted and cast, he will, probably, come out of the mould with a different voice, which may not chime in harmoniously with his little companions; and it is much easier to alter four little bells than one large one, it is extremely probable that they will all have to be recast, to try and make them correspond in sound with their stentorian neighbour. This is by no means an imaginary incident: the present large bell was intended to sound E flat; whereas, by some unaccountable mismanagement, it turned out to be E natural. The next experiment may prove to be E sharp.

Before the public is called upon to pay for casting another "Big Ben," which may again end in vexatious disappointment, it is to be hoped that the entire subject will be thoroughly investigated, and certain well-considered experiments, upon a large scale, be undertaken, for the purpose of suggesting some modification of the old ponderous bell, which may answer every purpose intended, during the period of at least a century, with a grand-sounding, dignified tone; and, if a satisfactory tone can be heard, with full effect, in St. James's-park, or at Lambeth-palace, is it of such vital importance that it should be heard distinctly in Hyde-park, or the Regent's-park? The outline of research, or class of subjects for experiment, should not be under the entire direction of mere amateurs, however learned they may be on other subjects. There can be no objection to one or two well-informed amateurs, who possess a good share of common sense, joining a committee formed of two or three gentlemen eminently distinguished for their attainments in physical science; and certainly there should be added one or two practical bell-founders, or clever mechanics. A party,

thus constituted, might be led into a train of ideas and experiments as yet but imperfectly developed.\*

All persons in a civilized state of society are unanimous in their admiration of classical learning and collegiate studies: such acquirements generally give those who possess them almost unbounded advantages over others who are less learned; but the love of precedent, and the desire of following in the popular current, have frequently induced such persons to adopt notions contrary to the plainest dictates of reason and common sense; and, consequently, the most inconsistent schemes have been admitted without scrutiny, and applied without reflection. The steam-engine, the railway, and the electric telegraph were invented and matured by men unknown to the universities but very far in advance of ignorance. They were self-taught: all the most learned men are, without exception, self-taught; for, if they are more learned in any department of art or science than the rest of mankind, of course no one can teach them: they advance by their own studious habits, and perhaps, unshackled by scholastic authority, boldly venture upon untrodden regions of science to make discoveries of great public utility, whilst their more learned contemporaries are fearful of risking their reputation in pursuit of what may be deemed wild and visionary theories: therefore

"Give to the dictates of the learn'd respect,  
Nor proudly untaught sentiments reject."

C. H. SMITH.

#### FIG. DEAL, AND HOUSE PAINTING.

AN ATTEMPT TO DETERMINE THE PERIODS IN ENGLAND WHEN THESE WERE FIRST INTRODUCED, WITH REMARKS ON THE PROCESSES OF THE LATTER.

In every branch of painting in oil applicable to buildings, the general process will be found very similar, with the exception of such variations as easily suggest themselves to the careful workman. The first essential is, that the wood plaster or cement should be perfectly dry. This is acknowledged by all, and yet when despatch is the order of the day, it must be neglected. One writer goes to the extent of stating, that "Perhaps in general cases, where persons are building on their own estates or for themselves, two or three years are not too long to suffer the stucco to remain unpainted; though now frequently in speculative works as many weeks are scarcely allowed." The wood-work having been prepared for fixing, has first to undergo the operation of "knotting," in order to prevent the turpentine in the knots of fir-wood, from passing through the several coats of paint. One method for best work is to cut out the knot whilst the work is at the bench, to a slight depth, and to fill up the hole with a stiff putty made of white lead, japan, and turpentine. There are many ways of "killing" the knots. The best and surest is to cover them with gold or silver leaf. Sometimes a lump of fresh-slaked lime is laid on for about twenty-four hours, then scraped off, a coating of size knotting applied, and if not sufficiently killed, they are coated with red and white lead in linseed oil, and rubbed down when quite dry. The general method is to cover the parts with the "size knotting," i. e. a preparation of red lead, white lead, and whitening, made into a thin paste with size. The most common mode is to paint them with red ochre, which is worth nothing. The next process is that of *priming*, which consists in giving a coat of white lead with red lead, and a little drier in linseed oil. This is the first coat, and upon which the look of the paint on completion depends. This first, or priming coat, is put on before "stopping" the work, should that process be required. It consists of filling up with putty any cracks or other imperfections on the surface of the wood. If the putty used in the process of stopping be introduced before the first coat of colour is laid on, it becomes loose when dry. A good painter, after the application of this first coat, removes by pumicing all irregularities from the surface, especially those rendered apparent by the knots and fibres of the wood. A smooth surface being thus obtained, a second coat is given, consisting of white lead and oil: about one-fourth part of turpentine is sometimes added for quick work. If four coats are to be put on, this second one has sometimes a proportion of red lead, amounting to a flesh colour; but if only three, it is generally made to assume the tint of the finishing coat. It should have a good body and be laid even. This coat, when thoroughly dry and hard, is in best work rubbed down with fine sand paper, and carefully examined to ascertain whether any further stopping be required; and then the third coat, or "ground colour" applied, of a somewhat darker tint than wanted when finished,

having sufficient oil for easy working, but not too fluid: thus, two-thirds oil and one-third turpentine are employed; or sometimes in equal proportions of oil and turpentine. The *flattening* coat follows, the object of which is to prevent the gloss or glaze of the oil, and to obtain a flat dead appearance. The advantage is not confined to the look of the paint, for it hides all defects in the wood or other material that is painted. White lead is mixed with turpentine, to which a little copal varnish is sometimes added, and when the tint is put in, it is always made lighter than the ground colour, or it would, when finished, appear in a series of shades and stripes. Flattening must be executed quickly, and the brush is generally, if not always, carried up the wall and not across it. It must be understood that a flattening coat is not considered as a coat of paint: being wholly of turpentine, it is by exposure to the air evaporated, leaving a thin coat of pigment which is only required for effect, not for use. Some painters, particularly where the work is required to dry rapidly, use a large proportion of turpentine in the several coats; thus the ground coat has two-thirds oil and one-third turpentine. If four coats are to be laid on, the third has a little more turpentine than usual, which in the second is about a quarter, and so on. I would suggest for particular attention, that *turpentine*, on the whole, is chiefly useful for the purpose of saving oil and labour. It should never be employed where really lasting work is required. The necessity of having the substance perfectly dry before it is painted has already been noticed, and it is equally important that each coat of paint should be quite hard before another is applied, more especially where the work is exposed to the sun. When the material is quite dry, the first coat is readily absorbed by the wood or plaster. Plaster to be painted requires some additional care in the workmanship itself: unless it be quite good, the lime works out in minute bubbles and destroys the effect of the paint, which can only be corrected by rubbing down and repainting; even then with no great certainty of success. Some persons advocate the use of a priming or of a second coat, made of strong double size, stained with some colour to mark where the brush goes. The second coat then consists of white lead in all oil, used as stiff as possible; the third coat is made of single size with a little white lead ground in water to mark the course of the brush; and the fourth coat of white lead in two-thirds oil and one-third turpentine, with a little blue-black to take off the rawness of the white. Such work as this is now generally repudiated: those in its favour state that it is of equal benefit with a coat of paint for inside, but confess that it is not so for outside work. Its objectors state that such "sheepskin" coats prevent the paint from sinking into the wood or plaster, causing the paint to peel off and chip: I fear that it is much practised in inferior work. When inside work has to be finished of any colour, it becomes necessary to provide for it at the third or second operation, according to the number of coats; particularly if the work is to be finished flat, or as it is termed, dead white, grey, &c. All new outside work should be primed a flesh colour, mixed in all linseed oil. The second coat may be of the same mixture if four-coat work is to be done; and in this coat all defects are to be made good. If three coats only are to be applied, this one should be laid on with care. The third and fourth coats, whichever may be determined upon, are generally white, stone colour, lead colour, chocolate, olive, and invisible green, all in linseed oil. When white lead is employed alone, it has been recommended to dilute it with half drying or boiled oil, and half linseed oil, as the boiled oil affects the colour of the white lead a little, but in all other colours boiled oil may be considered the best for the purpose of preservation. When it is required to cover a painted material, or "to repaint," the surface must be prepared to receive the coats of paint: it is sometimes first washed, or if the work be very greasy, turpentine is used, after which the paint is rubbed down with pumice-stone and water, or with some potash in it, until an even surface is obtained, removing any knobs or imperfections in the previous coatings. In repainting, the first coat is called "second" colouring, the old work being considered equal to a primed state. It is composed of white lead, turpentine, and oil, with the pigment required for the colour that may be wanted. Some painters use two-thirds turpentine and one-third oil; others three-fourths turpentine and one-fourth oil; and even all turpentine, drier, and a very little red lead; but this last must be worked very quick, crossed once, and laid with the grain of the wood, as it is not much better than a flattening coat. For third colouring or finish, the white lead is thinned with half turpentine and half linseed oil, drier, and a very little blue black, to take off the rawness of the white, and also to make it cover better. For the best rooms the flattening coat is required, as before described. Two coats of new paint are frequently sufficient for ordinary work where painted

\* The accident to "Big Ben" is now attributed to the fact that it was cast 54 inches thick in the waist, instead of 4 inches, as previously held.—Ed.

† Read by Mr. Wyatt Papworth, at Institute of British Architects. See p. 651, ante. The date of Hardwick Hall should be 1570 instead of 1750.



previously. Light-coloured work, as margios, rails, and so on, is generally painted before the darker work, as mouldings, &c. Carved work especially requires care to prevent the work being clogged up.

Where the face of old work presents a very bad and uneven appearance from blisters or other causes, the inequalities are filled up with a cement. Modern specifications often require that the woodwork should have four or more coats, until the paint "bears out." This is certainly necessary when it may be anticipated that little oil will be used, or where the priming and early coats may not have been properly attended to. The result is a deadness in one part, the glaze continuing in another. It often happens, too, that the sun and air has quickly dispersed the greater part of the most valuable quality of the paint, i.e. its oil, and the work presents the same flatness. Care is also required when constantly painting in chocolate or black: if these are made too thin with boiled oil, blisters occur, which causes the paint to peel off, and leave the wood almost bare.

Painting plaster work demands a few observations. White lead and linseed oil, with some litharge as drier, are mixed to the consistence of thin cream, and applied; the oil is entirely absorbed into the plaster in a few hours. This coat will perhaps be sufficiently dry in a day or two, when another, a little thicker, is given, the oil of which is also wholly or only partially absorbed, according to the nature of the plaster. In a few days a third coat can be applied, made rather thick, and (according to the absorption of the oil from the second coat) one-fourth or less of turpentine is added, and likewise the pigments approaching to the tint required. Should the plaster be thoroughly saturated, the flattening or finishing coat is applied as before described. When very durable work is required, a fourth coat is put on, thinned with equal proportions of turpentine and oil, and then the flattening coat. If the plaster be not flatted, the last coat is made of two parts turpentine to one of oil. By thus painting, plaster is rendered incapable of absorption, and its surface becomes hardened by the oil to a depth of about an eighth of an inch, rendering it less brittle, and enabling the surface to be washed. To effect absorption quickly, painters sometimes give the plaster two or three coats of boiling linseed-oil, which are soon absorbed, and then give it the other coats of paint. The substance, generally, constituting nine-tenths of the body of paint, is carbonate of lead, commonly called white lead, the quality of which is therefore of the greatest importance to the durability of the work. White lead is said to improve by being kept for several years before use. Besides the three qualities manufactured, six or more chief modes of adulteration have been recorded: 1, by carbonate of lime, as chalk, whiting, &c.; 2, sulphate of lime, as gypsum, selenite, plaster of Paris; 3, carbonate of baryta; 4, sulphate of baryta; 5, pipe and other clays; and 6, starch, flour, &c. Fine whiting ground in oil is very difficult of detection: it not only renders the paint a much less compact body, but causes it to be more easily acted upon by the atmosphere; thus bleaching it and destroying it by repeated washings. These adulterations will in some measure account for the great difference that exists in the prices of painters' work. The other metallic white paint now used is zinc white, well known for its intense whiteness, its resistance to sulphurous and other deteriorating causes, and its harmless qualities to the painter and the inmates of the house under decoration. It is requisite that the oil used should be as white as possible, all the brushes and pots well cleaned with spirits if they have been used before with white lead, and driers or colours with a lead basis should not be mixed with it. Zinc white possesses less body than white lead, and great care is requisite that the colour when ground in oil is of sufficient consistence to be laid on a flat surface without showing through; for in that state any oil in excess will form a slight glutinous coating on the surface, retaining every particle of dust brought in contact with it, until it has evaporated. In general this white will not dry so quickly as the older colour, but this defect is remedied by the application of proper drying oils. With these precautions a few trials will enable any painter who chooses to work zinc white to overcome the difficulties which appear at first to counteract the great durability of the colour of this paint, a house painted with it may be washed for a succession of three, four, and even five years; and that after each successive washing, the surface will be found as clear and bright as when fresh painted.

*Cleareole* has already been referred to in conjunction with coats of oil paint. It is a cheap mode of painting, when used alone, for servants' rooms, kitchens, and such like places where despatch is necessary, or when it is necessary to paint often. The old work should be well cleaned and dried; and then a mixture of white lead, ground up in water and mixed with size, laid on: this

will dry directly. For finishing, the white lead is mixed in half linseed oil and half turpentine, and used as stiff as possible: blue-black, or some colour, and a little drier, are requisite.

The use of distemper is older than that of oil and varnish. Whitewashing is a kind of distemper, especially when size is used with it. The extracts from the records in the former part of this paper have no doubt reference to this kind of painting, and the word "colour" would be more applicable as a translation than "paint," which is generally used. Common distemper colour for walls is Spanish white, or whiting, broken into water, to which is added strong size whilst warm, and then allowed to cool, when it should appear a thin jelly: two coats are generally necessary: when applied to old work, it should be first washed by a brush with water: this process in old publications is called "painting in water colours." Papered rooms coloured in this manner, especially if flock papers were used, look very well, as the pattern can be seen through the coats of colour. A convenience in the use of this preparation is that the rooms may be completed and dry in one day, with very little dirt or inconvenience. It is not generally known that walls which have been discoloured cannot afterwards be lime-whited, in consequence of lime when laid on whiting becoming yellow. Oil colours, however, can be applied afterwards, and then white lead is used. Apartments that are to be varnished are prepared in two ways. The first is by applying the intended distemper colour, and then covering it with as many coats of coloured or uncoloured varnish as may be required. It may be useful to observe that distemper causes the wood to swell, and that if the material be not quite dry previous to the application of the varnish, the latter penetrates into the size, but is prevented from reaching the wood by the moisture retained in it, which opposes any union with the resins forming the base of the varnish. The varnish then gives to the distemper the hardness of cement, which, not yielding to the shrinking of the wood, scales off in drying. The second method is to grind and mix up the colour with varnish, which produces a better result, especially if the coating be applied when the wood-work is dry, and if it be very clear, so as to dispose the wood to imbibe it. The successive coats then become incorporated with the first. Generally but little colour is added to the last coat of varnish, and in some cases it may be applied colourless. It then forms glazing, and its brilliancy is greater; the colour also is stronger. The use of size produces a considerable saving of varnish, and the splendour given to this last stratum conceals the imperfections of an unequal coating of the colour. For new plaster-work a coat of size is requisite; a solution of glue in water, not too strong, is applied warm, that it may penetrate the plaster, which should be already quite dry. Additional effect may also be obtained by a careful pumicing after the first coat.

It is generally asserted that varnish is more liable to injury by dirt than oil painting, and that the means of repairing it cannot be the same, because the dirt adheres more strongly to the resinous parts of the varnish than to the oil surface. Soap and water applied carefully with a sponge, and the use of clean warm woollen cloths to dry the work, are efficacious means of cleaning both surfaces. The steps of wooden staircases which have been painted, grained, and varnished, wear better than those which have been only painted; the gloss is only very slightly injured by the operation of cleaning, and neither dust nor dirt adheres so easily. A coat of varnish can be again put on at any time.

The processes of graining and marbling may be traced back as far at least as the time of James VI. of Scotland (1567-1603), during whose reign a room of Hopetoun Tower was painted in imitation of marble. Before that period, imitations, as I have already mentioned, were done in stone-colour, marble-colour, wainscot-colour, &c. In 1670 marbling was executed, as well as imitations of olive and walnut woods; and in 1688 tortoise-shell was copied on battens and mouldings. The friend above referred to tells me that the doors of the chapel in Conduit-street, Bond-street, attracted much attention from the novelty of their being grained to imitate marble, done perhaps about the year 1810, when a new front was given to the building. From some letters in my possession I find that mahogany was imitated in 1815, and maple-wood in 1817. The imitating *marbles* and most kind of woods has nothing very peculiar in its mode of execution, being similar to actual painting, the result depending more on *natural taste* than on *mechanical skill*. The process of graining is in the first instance the same as for ordinary painted work, but it requires more care in obliterating the marks of the brush. The last coat, instead of being flatted, is composed of equal portions of oil and spirits of turpentine, and is brought up to the colour characteristic of the wood to be imitated.

The shades and grain are given by thin glazings of Vandyke brown, burnt sienna, orumber, ground in water, and mixed with small beer, which is a sufficiently glutinous vehicle; but imitation wainscot requires a thicker one, in order to receive the impression of the combs by which the grain is imitated. Thus oak graining is executed with colour in turpentine mixed with a little turpentine varnish; the work being covered with it, the combing is done without delay as it dries very quickly. The lights are then taken out with a camel's hair brush, or a rag moistened with turpentine, and rubbed clean. In cheap work the operation ends here, and the surface is covered with copal varnish to protect it; but good work is "over grained," that is, a glaze of colour in beer, as dark as may be requisite, is laid over the combed work, in shades thrown across the work. Sometimes the whole panel is laid in with this glaze, and the lights taken out with a sponge, a brush is then used to lighten the edges; when quite dry the work is overgrained with the same colour laid on thin and softened off. For graining wainscot in oil, bees-wax is used instead of varnish to the colour, mixed in equal quantities of turpentine and oil; one, two, or three coats of a good oil varnish, such as copal, are applied when the work is quite dry.

Time only allows me to mention the use of staining and varnishing, and to refer slightly to the process of polishing wood by varnish and wax. Varnish and polish, both form a glazing, and give a lustre to the wood they cover, as well as heighten the colours of the wood, but from their want of consistence they yield to any shrinking and swelling, rising in scales or cracking when much knocked about, which damages can only be repaired by application to a proper workman. Waxing, on the contrary, resists percussion, but it does not possess in the same degree as varnish the property of giving lustre to the bodies on which it is applied; any accidents, however, happening to its polish are easily repaired by rubbing. As another method of covering a surface, the board now exhibited has been prepared to show how deal may be employed without the use of oil painting. The surface having been prepared, it was at once grained, the natural colour of the wood forming the ground of the imitation wood, the whole was then varnished as usual. In coarse deal, the knots might be worked into the pattern, but in wood selected for the purpose, the small knots could hardly be said to disfigure the work. Another advantage to be considered of material importance is, that as there is no oil painting required, the material would be drying up to the last minute of finishing the house, when the graining and varnishing would be done in a few days.

The proper time to paint is a subject worth consideration. For interior work it is not so important as it is for exterior; though for the former some part of the warm, not hot season, should be selected, not only to get rid of the smell more quickly, but because moderate heat improves the look of the work, while cold air chills the oil. For exterior work, the proper season is undoubtedly the autumn, when the days are sufficiently hot to dry the work properly, and the weather sufficiently settled to allow of its being carried on continuously. If a house is done up for the summer, the paint then executed in the spring is chilled by the cold and ruined by the unsettled weather. Or should the painting be performed later, say in the month of June or July, the hot sun dries up the oil, the really effective preservative property of the paint, before it can be absorbed. Such work is consequently worthless at the end of less than two years, where it were it done at a later period the result would be a better appearance, lasting for perhaps double that time. Aspect should also be considered when external painting is required to be performed.

The Chairman (Mr. Scoles, V.P.) in reference to Mr. Wyatt Papworth's remarks on varnishing without painting, stated that the late Sir Anthony Carlisle had the interior wood-work of his house in Langham-place, so varnished throughout, and the effect of the varnish was very like satin wood. The wood-work of the Swiss cottage, at the Colosseum, in the Regent's-park, was also only varnished.

Mr. C. H. Smith (H.M.) said, that in recommending the use of varnish, it was necessary to state what kind should be used. Any resinous substance in combination with an oil would produce a varnish; but the difference between a resin and a gum, which might resemble each other in outside appearance, should be clearly understood. A resin properly would mix with oil, but not with water; whilst a gum proper would mix with water and not with oil. After mixing a resin with any volatile oil, such as alcohol, spirits of wine, or oil of turpentine, and applying it to any substance, the oil would rapidly evaporate, and leave the resin in a powdery state, which could easily be sponged off. Many years ago he had applied mastic varnish to some drawings, but only a small remnant of it now remained, and a sponge would at once ex-



pose the surface of the paper. But if used with a less volatile oil, the varnish would produce a totally different effect, and, for wood-work, only copal varnish in oil should be used. This would give a very hard surface, as might be seen on the panels of carriages. Besides Sir A. Carlisle's house, he might mention a house built about the year 1813, at Brighton, by the late Mr. Bonomi, for Mr. Prince Hoare, in which the joiners' work was varnished, and it was in a very good condition many years afterwards, the varnish having acquired a very dark rich colour. With regard to cleaning paint, a solution of wood ashes was frequently employed formerly for washing either linen or paint. This mixture, if too strong, had a tendency to decompose the paint, and careless use of pearlash and soda would wash off all the paint, though if used gently it would effect the object required. With regard to paint, the only valuable quality of white lead was its extreme density. In the course of his early experiments he had tried to make a pigment from sulphate of lime, using the finest plaster of Paris; and, although this made a beautiful pigment, there was no body in it. This material was applicable to water-colour painting, if mixed with a very little gum, to prevent its brushing off. It had advantages over the white, generally used for water colours, and made of lead or zinc; and if the slightest film of it were used it would be almost transparent when laid on, but when dry intensely white. In experimenting upon magnesian limestone he had found that magnesia was also applicable as a water colour. He did not know of any sulphate or mixture of sulphur that would have any effect upon it. It was totally unaffected by the vapour from sewers or drains, and therefore superior to white lead for distemper painting.

Mr. J. G. Crace (C.V.) said that the very best way of treating wood was simply to varnish it, and not to smother it over with paint. Eight or ten years ago he had been employed to paint a house in the Isle of Arran, for the present Duke of Hamilton, and he had found the wood-work, of red pine, so free from knots, and so well executed, that he suggested that it should be at once varnished. This was done with great success, and the work had lasted, and looked now as well as when it was done. He believed paint had not been used as a preservative to wood before the time of William and Mary: before that time painting was a decorative process. The style of architecture and the use of wood seen in the buildings of William's day, altogether came, he thought, from Holland. Mr. Crace referred to a document in his possession, being a tender for painting the work at Greenwich Hospital, in the year 1696, by William Thompson. The price asked for painting outside work three times in oil was 8d. per yard. There was also a price for painting sashes, iron bars, and inside work, and for painting "three times in good linseed oil and well primed." Mr. Crace also referred to papers alluding to the "walnut" and "wainscot" colours mentioned by Mr. Wyatt Papworth. Among these were charges for "all outside painting 3 times in oil, at 8d." and for "all inside, walnut or wainscot, 9d. per yard;" these prices showed that graining was not intended. At this period (1696, seven years before the accession of Queen Anne) he believed painting was chiefly executed in white, for in cleaning off the paint from old wood-work of that age, he almost invariably found that the original colour had been white. A blue tint was afterwards used, and, in the time of George III. various shades of stone colour and drab. Graining and marbling were introduced into this country about the year 1782. Mr. Crace stated that his father (now far advanced in years) remembered their introduction by French workmen at Carlton House for the Prince of Wales: they were then considered as great novelties, or at all events as a reintroduction. With regard to the operations of painting, he could not too earnestly urge the necessity of careful "knotting," the neglect of which could not afterwards be remedied. The evil arising from this neglect was constantly seen in the common application of two coats of builders' paint, after which the dark spots showing the forms of the knots soon became visible. For bad work a remedy might be found in rubbing down, sand-papering, or pumice-stoning; but bad knotting could only be got over by scraping down to the knots themselves, and redoing the work from the beginning. The use of size colour was also to be guarded against, as its application in the first instance prevented the absorption of the oil paints by the wood, and all the after processes only formed a skin laid on the woodwork, rather than a coating to effect its preservation. When the sun (as in a window-shutter, for example), struck upon wood sized before painting, it was sure to crack and flake off. With regard to pigments, Spanish white was only whitening; none but those with a metallic base had any body at all. White-lead furnished the best body that could be applied to woodwork. Zinc paint possessed several valuable qualities, but it had very little body. Anyone who had used it would know that after even

seven or eight coats the grain of the wood could be seen; and he would call particular attention to the fact that zinc paint would not clean well. It had a face which might be compared to wax, and any attempt to clean it seemed to rub in the dirt, so that a bright clear surface could not be got, as with good lead paint. To clean paint he strongly recommended that the raw alkalies should not be used, as they would infallibly take off the flattening coat. The best mode of cleaning was by means of good soap, not too strong, laid on with a large brush, so as to make a lather; this should be washed off clean with a sponge, and wiped dry with a leather. With regard to varnish, nothing but copal should be used, as no other would stand wear so well. It was the most expensive of all varnishes, and therefore could not be applied good in cheap work.

In reply to an inquiry if there was any practical disadvantage in applying zinc paint upon previous coats of lead, Mr. Crace stated that the manufacturers of zinc paint appeared to have come to the opinion, that it was best applied as a finish upon a body of lead. Zinc paint had a good colour, particularly if of fine quality, and, under favourable circumstances, would last well. Some experiments which he had tried in a long corridor at the Houses of Parliament, under the direction of Sir C. Barry, where the manufacturers of the zinc paint conducted all the operations, seemed to show that there was practically no difference in the durability of good white lead and good zinc paint.

Mr. G. Godwin (Fellow) said that the testimonials in favour of zinc paint were very strong; and, if it had no other advantage, its prevention of the misery arising in the shape of painters' cholera, loss of hands, &c. from the use of lead, would make every member of the profession anxious to use it. His own limited experience had furnished him with two cases of failure, which he was told had arisen from applying the zinc without cleaning off the coats of lead paint underneath; and the intended white paint had turned out to be nearly black. Mr. Wyatt Papworth's paper had brought many valuable facts together, and would, no doubt, lead many to understand why one person could do painters' work thirty per cent. cheaper than another, and yet get more money by it. He moved the thanks of the meeting to Mr. Papworth for his paper.

Mr. Ashpitel (Fellow) referred to a large public dining-room in the City, where he had employed zinc white, with a satisfactory result, upon coats of red lead, and found that it was not affected by gas-light, as lead paint was.

Mr. Jennings (Fellow) observed that the use of paint had the advantage over ordinary varnish, that, besides protecting the work, it gave it a harder surface, and enabled it to bear a severer blow than if varnish had been employed. French polish produced the best effect; but if two coats of copal varnish were applied, and then polished, the effect would be as good, and the surface as hard as if the work had been painted.

Mr. Thomson (Fellow) referred to a case in which a pair of wainscot doors were carefully finished, rubbed down, and hand-polished to a satin surface. One side of these was afterwards varnished, and the effect was it bore out upon what was termed the figure of the wood, and it sunk into the softer parts; so that it not only produced a rough appearance, but also changed the actual texture of the wood, which, on being touched by the hand, was as coarse as a rasp, and some excellent work was spoilt by the experiment.

Mr. Crace said that, in the experiments at the Houses of Parliament, to which he had referred, it was clear that the zinc paint had not the marked superiority which was claimed for it. On the sanitary question he added, that the workmen did not like it so well as the lead paint. They said that it smelt sour, and made their throats sore. He had in his establishment men who had worked there more than five-and-thirty years with lead paint, without having a day's illness. He believed it depended entirely upon cleanliness, and, among the various artisans employed by him, he would match the painters against any others for healthy-looking men, and steady, well-conducted workmen.

Mr. L'Anson (Fellow) referred to a case in which zinc paint (mixed, he believed, with varnish) had been applied over distemper, and the work had stood remarkably well. His own experience was, that it required five coats of zinc to produce an appearance equal to four coats of lead paint. He found that the workmen nauseated and disliked the use of zinc more than that of lead; but he could not say whether the permanent effects of the latter were most deleterious or not.

The Chairman referred to the green-houses in the Palace Gardens at Salisbury, which had been painted last year, but the appearance of which had led him to ascertain that zinc paint had been employed, and that the result, he thought, was unfavourable on the score of durability.

Mr. Digby Wyatt (Hon. Sec.) said that, in any fine

revival of the ancient or modern Italian styles of decoration, the effect of the other tints employed depended mainly on the brightness, purity, and durability of the white; and the most beautiful rose tints were obtained through the slightly transparent upper coat of white. In the use of lead paint, or other materials which had a tendency to turn yellow, this important advantage was lost, and it was desirable, therefore, to consider any material which appeared to possess a character of permanence and purity, with a view to arrive at something like the white pigments which the ancients obtained from their fine white marble.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On Monday, the 16th, the ordinary general meeting was held, Mr. J. J. Scoles, V.P. in the chair.

Mr. C. C. Nelson, honorary secretary, announced various presents, including a portion of a donation from Mr. G. Wightwick, in the shape of 100 drawings, and five or six lectures delivered at the Athenaeum, Plymouth, with easel and foot-lights for the drawings; and this, he pointed out, was especially deserving the best thanks of the Institute.

Mr. Digby Wyatt bore witness to the value of the donation, and

Professor Donaldson said he believed it was Mr. Wightwick's original intention to have left these works to the Institute in his will, but he had adopted this more agreeable method of presenting them to the Institute. He moved,—"That the honorary secretary be requested to acknowledge the donation in the most flattering terms."

The motion having been seconded, it was carried with applause.

Professor Donaldson, as honorary secretary of Foreign correspondence, presented a donation from M. Hittorf, of Paris; a memoir of Herr Schinkel, architect, of Berlin; and a profile bust of M. Roeland, honorary corresponding member at Ghent, who had sent them numerous donations, and amongst them drawings of candleabra in the church of St. Bavon, at Ghent, in brass and copper. They originally belonged to Charles I.; and on being sold with his effects, were bought by Bishop Trieste, of Ghent, and by him presented to the church of St. Bavon. The candleabra, of which there were four, were of considerable height, and they contained the arms of Charles I. The Institute had representations of other candleabra, designed by Buonarroti and Raffaele, and as they were drawn to the same size, it was intended to have them placed together, so as to show those that were the actual execution, and those that were merely the designs, of these illustrious masters. They had also been favoured with a number of prints of the buildings M. Roeland had executed at Ghent, some of which were very interesting. One was of a large church at Brussels, now in course of construction; another, of a brilliant coffee-room, which he had added to one of the clubs of Ghent, entirely of marble; and they would be able from the drawings to form some idea of its beauty. There were also drawings of another church he was constructing at Ghent, and of a riding house and some shops. He (Professor Donaldson) had further to present, The History of the Academy of Fine Arts at Dusseldorf, by Herr Weigmann, architect, of Dusseldorf; also a donation from Signor Kaftangioglou, architect, of Athens.

The Chairman announced the decease of Mr. James Morrison, the well-known millionaire, who at the formation of the Institute not only became an hon. fellow himself, but put down his son's name.

The Signor Lysandros Kaftangioglou, architect, director of the Royal School of Fine Arts, Athens, who had executed a college for young ladies for the Queen of Athens; Herr Rudolph Weigmann, architect, Dusseldorf, Professor of Architecture, and Secretary of the Royal Academy of Fine Arts at Dusseldorf (who restored the great Gothic church of the Saviour at Duisburg, and is the author of various works on architecture, engineering, and perspective), were elected as hon. and corresponding members.

Professor Donaldson then read a "Memoir of the late Herr Zanth, architect, of Stuttgart, Wurtemberg, hon. and corresponding member," and author of the "Architecture of the Wilhelms, or Palace of the King of Wurtemberg." The paper, which we have given in full on another page, was profusely illustrated with views of the gardens, and architectural features of the palace, and was received with much applause.

Mr. Digby Wyatt (in the absence of Mr. J. B. Waring, associate), read a paper on the "Arts connected with Architecture in Tuscany," beautifully illustrated with examples of stained glass, fresco ornament, and marble, enamel, and wood inlay, as practised in central Italy during the Mediaeval and Cinque-cento periods.

Professor Donaldson thought they would all participate in the noble enthusiasm with which Mr. Waring



had taken up this interesting subject, and it was to be hoped that he would give them further information on it by way of complement to the series. Productions of this kind, conceived and carried out in this spirit of performance, were virtually the fulfilling of the purposes of all high art; and, perhaps, there could not be a more striking exemplification in England of the want of these grand adjuncts to the completion of the architectural picture, than the case of our own St. Paul's. Mr. Waring had laid it down that the useful should never be disconnected from the beautiful. He (Professor Donaldson) would adopt the converse of that proposition, and say that the beautiful should never be dissociated from the useful. It was the beautiful that gave to the useful its sentiment and its expression, and it was the beautiful that brought home conviction to the mind and feeling, and without which no impression was made upon the heart. Let us look at St. Paul's itself. There we found a building in fine harmonious proportion—there we found a building of very considerable size: it was carried out with great skill and study, and grandeur of design; but whoever entered the interior of St. Paul's felt, as it were, a chilling effect, arising from a want of combination with its architectural beauties of those subsidiary arts and decorations that, if introduced, would render it imminently impressive and imposing. Now, if St. Paul's had been carried out with stained glass windows, and fresco or mosaics, enamel inlay, or marquetrie, in various parts of the building, what a gorgeous effect would be produced upon the eye and upon the mind, and what an effect, abstractly considered, would be produced by that glorious work of the greatest architect this country had produced. Why, we should all be warmed by a sentiment of inspiration as we entered its splendid portals, instead of being chilled by the monotony and want of ornament that reigned through its immense recesses. Nothing could be more appropriate for introduction into St. Paul's than the decorations described by Mr. Waring and Mr. D. Wyatt. It was painful to reflect how poor and niggardly we were in this country, and how marked the contrast was in the case of similar structures carried out in Paris, where the Church of St. Vincent de Paul, which had all these embellishments, had been carried out at a cost of between 90,000, and 100,000. But where could they get such a magnificent amount to carry out these works on such a scale in our London churches? In the Church of St. Vincent de Paul the windows were painted in the way described by Mr. Waring. Each window was a splendid picture, and each picture formed part of the entire architecture; and instead of your building being cut up into so many holes letting in the glaring light of day, you had pictures and windows of the most resplendent colours. This was also the case in the Church of St. Gudule, at Brussels, where there were beautiful pictures in the transepts, and beautiful Cinque-cento pictures in the apsidal chapels round the choir; although there in discordance with the style, but which in St. Paul's would be at once harmonious and imposing. It had been said there was an objection to receding pictures, but, to a certain extent, they must be receding, otherwise they were tame and flat. At Lille he saw this carried out at the ends of the aisle, which had a perspective representation tending to extend the length. At first sight it had a very happy perspective effect, but as you approached it, it was lost; but there was a great deal of art introduced to carry out the idea of the architect. It was not for the architect exclusively to restrict himself to mere geometrical form and line, but rather embellish his architecture with such accillaries as they had described that evening. What he much admired in the paper was the logic of Mr. Waring's mind. It was no common mind treating the subject, and, by means of able analysis, leading to an important ultimate purpose, showing how the proposed system was not likely to obstruct the building, but that it was conducive to great effect on the mind of the beholder. If we wished to produce noble impressions on the mind of the spectator, it was by using all those accessories that might appropriately enter and be applied to the architecture of a building. In Gothic architecture, the architects had had the advantage of introducing a great number of these elements of beauty into their buildings; and it had been from a fearfulness and hesitation that the public mind had not been prepared to receive the like decorations in the Classical, or, as he would term it, the Italian style of building; but no doubt, if they wished to convey the best possible effect, it was by the introduction of such assistance as Mr. Waring had so ably brought under their consideration.

Mr. C. Barry conceived that all must feel how difficult, in the pursuit of their profession, it was to have all their ideas fully and harmoniously carried out,—difficulties connected not only with the taste of the artist or architect who designed, but sometimes in the want of the sinews of war. They would all agree

in the view that had been taken with reference to the great national monument, St. Paul's. The nation's purse could do what no individual could accomplish, and it was a consummation that all architects and artists alike must desiderate.

Thanks were voted, and the Chairman having called attention to a contrivance, for striking the centre of circular drains, by Mr. James Buckle, clerk of works, and a model of which was laid on the table, the meeting was adjourned to November 30th.

#### THE ARCHITECTURAL ASSOCIATION. SQUARING DIMENSIONS.

On Friday, the 13th inst. the semi-monthly meeting was held, Mr. J. Norton, Vice-President, in the chair. Mr. Bunker, Honorary Secretary, read a communication which had been addressed to the Council of Plymouth touching the advertisement for designs for a guildhall, which asked:—

1. Will the architect receiving the highest premium be employed to carry out his design at the usual per centage, provided his competency is found to be undeniable?
2. Will professional assistance be sought by the committee in enabling them to award the several premiums?
3. Will there be a public exhibition of the designs previously to the selection being made for the premiums?
- 4, and lastly, Will the committee pledge themselves to reject all designs that do not fully and honestly comply with the whole of the conditions contained in the instructions furnished to architects?"

The speaker added that no reply had been received, but they had heard privately that since the communication had been transmitted, the competition had been deferred. Mr. Bunker also read a letter of considerable length from Mr. Hewitt, in which he dealt with the question of competition generally, but which it was determined not to adopt or forward until some further information was received from the Council. The suggestions in Mr. Hewitt's communication were contained in the following programme at the conclusion of his letter:—

1. Rough sketches only of the proposed design in outline, slightly tinted, to be prepared to a scale of 20 feet 1 inch, to consist of the following drawings only, viz. a plan of each floor, one elevation, one section, and one external perspective view.
2. The design to be accompanied by a general description of the materials and construction, capabilities and areas of office, &c. and an approximate estimate.
3. These sketches to be taken into consideration by the Council, and a number not greater than twenty-one, nor less than eleven, to be selected, the authors of those selected to be alone entitled to conditions and terms first issued.
4. The author of the best design to be employed to carry out his design upon the usual terms, unless any serious objection exist.
5. The premiums, amounting in this case to 500*l.* to be awarded to the remainder of the limited competitors, in the order and in the proportion the Council think deserving; no premium, however, to exceed 50*l.* nor to be less than 10*l.*
6. Three architects of repute, and entirely disinterested, to be called in to report on the designs, and assist the Council in making the award.
7. The designs not to be publicly exhibited until after the award is made.
8. Any canvassing on the part of any competitor, either directly or indirectly, to disqualify and exclude him from the competition.
9. All designs to be submitted under an assumed mark or motto, and which in no case is to be one by which the author's name may be divulged."

The Committee on Competitions reported that they had met, and that the following resolution was carried unanimously, viz. "That this committee believe that any code of laws which is not generally adopted by the profession is quite inadequate to deal with the present evils of competition."

Subsequently the following resolutions were carried: "That the committee consider it desirable that a series of inquiries and suggestions should be framed for the purpose of conveying information and assisting committees in preparing the conditions of future competitions, and for their guidance in arriving at their decisions. And that it is desirable that a sub-committee of the Architectural Association be appointed to draw up suggestions, to be forwarded to all parties having the conduct of competitions; and that they submit the same to the general body."

The report of the committee was adopted; and the same committee reappointed to further consider and pursue the subject.

The chairman then stated, relative to the occupa-

tion by the Association of a part of the new buildings of the Architectural Union Company, in Conduit-street, the following resolution, which it was proposed to consider and discuss at the next meeting:—

"That regard being had to the importance of securing a union-point for the profession, and the favourableness of the present position of the Architectural Union Company, it is advisable that the Architectural Association should take steps to assist in the object, by its removal to the premises of the company."

Mr. Rickman then delivered a *vinde voce* dissertation on "Squaring Dimensions," but which rather took the form of a *résumé* on the "arithmetic of architecture" generally, and which it would be impossible to deal with without diagrams. The speaker said, if they properly studied the subject, they would find that it was one of the greatest interest: it moreover trenchanted closely on a subject which was now being greatly discussed,—that of the adoption of the decimal system. The great difference between our own system and the French system and foreign systems generally was, that in our dimensions we more frequently made use of the duodecimal than of the decimal; and, when we got above the fractions of shillings and pence, and treated of pounds, we rarely followed out the decimal system. The influence of the duodecimal system was so great, that four out of five of the dimensions we squared, in going through great quantities, were influenced entirely by the duodecimal system. He did not intend to go into the subject, as had been done with another subject in another place, by treating of the antiquity of squaring dimensions. He had not been either to the British Museum or to the library of the Institute to read up old works on the subject, to ascertain how they squared dimensions in the days of Sir Christopher Wren,—whether the cubical contents of Stonehenge or the masses of the Pyramids were superimposed or calculated by decimals or duodecimals, or whether the ancient works of the Persians at Athens, or the palaces of the Greeks and Romans were by scale work. Those who were in an architect's office might be considered as being pretty well masters of duodecimals, but not so of decimals; and if instructed to square a whole parcel of figures, and they did it by the old system, they would take no interest in it: but if they took an interest in it, they would find out a happy knack of their own, in working out their arithmetic, of eliminating certain dimensions, and of combining them mentally in many ways. Of all the mental calculating processes we went through in figuring, that of getting rid of the factors—of multiplying or dividing together various factors so as to produce unity, whether that unity was 1, or 10, or 12, or 100, or more,—this process of eliminating or getting rid of the superfluity of figures was the most interesting and valuable in the subject they were then considering. To do this a knowledge of the composition of numbers was of the greatest importance. Thus the composition of 10 and 12 was manifestly different,—that of 10, as a concrete number, being 2 multiplied by 5, and 12 being 2 × 2 × 3. Other numbers might be combined in a more complicated way. They knew the difference between prime numbers and concrete numbers, and the happy knack of introducing the component parts of concrete numbers was of great importance. Though it might at first appear that the duodecimal was more simple than the decimal, still, practically, the fact of our always using decimals in higher numbers showed that it was the most simple and available; and although we more frequently made use of 12, still he hoped some day to see the decimal system, in squaring up ordinary dimensions, adopted. A very useful elementary exercise was that of going through a course of dividing 1,000 up into its aliquot parts; and another interesting process consisted in multiplying several given symbolic figures by the same symbolic figures; and Mr. Hay, of Edinburgh, in his work on arithmetic, pointed out several interesting characters of this kind in the works of the ancient Greeks, and in more modern works. There was another method of looking at figures which some had, and which, though it did not much facilitate, served to assist the mind overtasked by long squaring; it was the system of *Memoria technica*, or artificial memory—the adoption of a set of symbols irrespective of the subject under consideration, and which, by means of a code, were referred from one to another, so that any given lines of gibberish, or forms, might be made to denote the reigns of kings and dates, and so become the representatives of numbers. He would not recommend the adoption of this system, for what we wanted instead of the *Memoria technica* was a thorough knowledge of concrete numbers. The higher and more rapidly you could run up in reducing your 1,000 into its aliquot, the more useful would it be in squaring dimensions. There was another division of numbers, which was practically of great importance in the sur-



veyor's office; namely, the determination of the aliquot parts of a foot superficial in inches. Mr. Bidder, who might be said to have "lipped in numbers, for the numbers came," the Swiss calculating boy, and others, used the decimal system—from unity downwards, or from unity upwards, according to the decimal association; or, as Professor De Morgan termed it, "the all 10 system."

#### THE DIFFERENCES IN BUILDERS' TENDERS.

I TRUST you will excuse this attempt to solve the perplexities of some persons who have, at various periods, favoured you with amounts which appear to mystify them, and which have been headed "Blind Builders." The subsequent paragraphs are intended to show that those who have received that designation are so called from a want of acute perception by the parties who have thus named them, and that the distinction (?) recoils on such as cannot see through the operation of the "force of circumstances," and may prove them to demonstration to be blind contributors, who misapply the appellation most suitable to themselves, or they would see some of the following reasons for the glaring discrepancies observed in divers valuations.

##### When quantities are not supplied.

The baste with which some estimators found their tenders on the area or the cubic contents of a building, causes them often to exceed greatly, and as frequently to fall far short of, the totals of their more circum-spect neighbours, who carefully wade through the specification, and measure the drawings, &c.

##### When quantities ARE furnished.

Indefinite wording may cause the real meaning to be misunderstood.

The insertion of general descriptions, including many details, and which may be classified as "sporting items," leads to confusion.

Manuscript instead of lithographed blank bills, with the errors made in copying not properly corrected; and the occasionally indifferent penmanship, involving uncertainty as to the figures, &c.

##### Whether quantities ARE RENDERED OR NOT.

Ill-framed and loose specifications, and inadequate drawings.

Incompetence in the person who prices.

Carelessness in moneying out after the items are rated.

The utopian impetuosity of building owners; who, when they determine to erect a mansion, house, factory, &c. imagine that their work should perforce take precedence over that of every other individual; and who constantly urge that the artificers ought to be immediately on the ground,—that the season will pass away to their loss; thinking all difficulties surmounted till pay-day—that bane of all diurnals, which they desire to be delayed as long as possible; and wishing the structural features to appear completed in an impossible time; thus hurrying on the architect, surveyor, and builder; putting an evil construction on their labours, "holding them up" to the contempt their employers in such cases alone deserve, and laughing at such as "go to the wall" from want of opportunity to examine, and if needful, revise their calculations.

Even highly respectable competitors, who have other works in the same locality, are able and willing to execute contracts at a lower price than men "of the same standing," who would have to send plant and workmen into the district for the sole purpose of carrying out one object.

Contractors, who are not busy, are often glad to take a large building in hand for a "lump sum," that will barely, or perhaps not quite, return to them their outlay, in order that useful, active, and intelligent men may be retained in their service, and give their masters the chance of turning their abilities to profitable account on some future occasion. Again, such as have extensive works on hand sometimes tender at a sum sufficiently large to insure the rejection of their offers, being unwilling to seem disinclined to submit a price, although not eager to enlarge their present responsibilities.

Sometimes tradesmen in a "small way of business" are artfully ready to lose now, to obtain the name of cheap, or strictly honest contractors, with the ulterior determination to charge an extravagant sum for what they see in perspective, and expect to have offered them afterwards, without competition.

Fluctuations in the prime cost of goods cause such variations as the following:—One tradesman, having had money at command, at the right time, invested his capital in the purchase, "at a bargain," of a large stock of materials that happened to be just called into requisition, to a considerable degree. Another was unable to become proprietor when the same articles might have been obtained "for a song," and he

knows that while he has the power he must buy, though a better speculation offers, *now*, before the supply is cut off, although they have risen to an unprecedented market value. While a third has all his property "locked up," and will be compelled to borrow, at a high rate of interest, to secure at his sacrifice what he requires, by the date he is under the necessity of using the same.

Observation has taught many, that although the overseer has, from habit or otherwise, stated that all the materials are to be of the best description, and that the labour is to be performed in the most workmanlike manner, his practice, from timidity, ignorance, or incessant occupation, is often to allow the concrete to be little better than the soil removed to make room for it; the bricks to be the refuse of the field; the stone, such as has been repeatedly rejected, previously to removal, from the quarry; the timber and deals sappy and shaky; the iron castings foul; the ironmongery of the most trumpy kind, and such as becomes the aggravating source of continual complaints, a nuisance to all who handle it; the plaster to be mixed up with the *débris* from the old building (when there has been one on the site before); the lead lighter than specified, and improperly laid; and the whole of the work put together as badly as the extent of the most flexible conscience of a thorough "scamping builder" will permit.

When "pettifoggery" upstairs are included in the list of competitors, one, never intending to pay for the materials he has the dishonesty to contemplate using, can undersell them all; become a bankrupt, and quietly taking care of "No. 1," decamp, to the chagrin of all with whom he had to do; and recommence his malpractices in another town, where his want of character is unknown—indeed, in a place in which he is not notorious. Sometimes men of the latter class, who are acquainted with the fraudulent disposition of particular men, who may "have an eye" to building, enter into an agreement with the last-mentioned, that they shall, by "putting in low enough," have the work secured to them at the amount of the next highest tender, the excess being privately paid. The competition is merely a gross sham, to defraud the conscientious of his legitimate chance, and the architect of part of his proper commission.

Fortunately, this parasitic race is not numerous, and, as a body, builders are "honourable men;" yet so are not all.

Two cures for the above abuses present themselves,—first, for the profession to found their charges on personal fair valuations; and, secondly, for an able clerk of works to be invariably appointed to each building of any importance.

"None are so blind as those who will not see."  
L. BIDEN.

#### RAILWAYS AND OTHER ENGINEERING WORKS ABROAD.

WE proceed to lay before our readers a list of various engineering works abroad, projected or in hand.

##### FRENCH RAILWAYS—NEW CONCESSIONS.

###### A.—To the Northern Railway Company.

1. Paris to Soissons, to be done in three years.
2. Boulogne to Calais, branching to Marquise, in three years.
3. Amiens to Terguier, on the Creil and St. Quentin line, in six years.
4. A cross line from the Lille and Calais line to the Paris and Lille railway, in five years.
5. Chantilly to Senlis, in three years.
6. Pontoise to the Belgian railway, in two years.

Also may be included the Amiens and Rouen, in which the Western Company participate for one-third, to be done in six years, and a line from Ermout to Argenteuil.

Concessions to become definite if claimed by companies, or the Government, within four years, and to be completed in eight years from date of concession.

1. Soissons to the frontier, by Laon, Vervins, and Hirson.
2. From the above line to a point between Basigny and Luredecres.
3. Senlis to the Paris and Soissons line.
4. Beauvais to a point in Paris and Pontoise railway, which the Western Company are about to construct.

###### B.—Concessions to the Orleans Railway, to be done in eight years.

1. Paris to Tours by Châteaudun.
  2. Nantes to Napoléon-Vendée.
  3. Bourges to Moulleuon.
  4. Toulouse to the Montauban railway, by Albi.
- Conditional concessions to become definite if claimed in four years, and to be done in eight years, are as follow:—

1. Tours to Vierzon.
2. Orleans to a point in the Bourbon line, between Montargis and Briare.

3. Montluçon to Limoges by Guéret.
4. Poitiers to Limoges.
5. Angers to Niort.
6. Limoges to Brives.

The lines left by the Grand Central (now fused into the Orleans and Lyons lines), are for completion:—

1. Montluçon to Moulins.
2. Limoges to Agen.
3. Contrats to Périgueux.
4. Montauban to Lot and to Rodcz.
5. Arvant to Lot.
6. Périgueux to the Montauban railway.

C.—The convention relative to the fusion of the Lyons and Mediterranean lines into a Paris and Mediterranean railway divides them into three groups—the ancient, modern, and eventual.

The first is composed of those open for traffic; also the Besançon and Belfort, Dôle and Chagny, Dôle and Bourg, Marseilles and Toulon, and Lyons and Geneva, in course of construction.

The second comprises—

1. Lyons line by the Bourbonnais, the St. Germain-des-fosses, and Clermont, Arvant, Puy, and St. Etienne lines.
2. Nevers and Moulins to Châlons, Châtillon to Montbard; Salins to Verrières and Jougne; Montbeliard to Delle and Aidincourt.

Delay of execution for all these, eight years.

The eventual group, to be conceded in four years at least:—Brioude to Alais, Montbrison to Andrieux, Privas and Carpentras, Toulon to Nice, Avignon to Gap, Gap to the Sardinian frontier, if the Piedmontese line will be constructed to meet it from Sava.

All to be done in eight years from date of concession.

A line is projected from Vitay-Je-François to Nevers, by Troyes, Briennon, Auxerre, and Clamecy, which, about 1,000 mètres long, will be the means of completing the long line from Bayonne to Strasbourg.

The line from Lille to Strasbourg is conceded to three companies:—1. Bassigny to Herson, to the "Northern;" 2. Herson to Thionville, to the "Ardenne" Company; 3. Thionville to Strasbourg, to the "Eastern."

Besigues and Alais Railway is ready to be opened in a few days.

Branch of the Caen line, from Lisieux to Pont-Evêque.—Earth-works about half done as far as Pont-Evêque. From thence to Honfleur, the only work commenced as yet is the Hébertot tunnel, eleven shafts, of 50 mètres depth thereabouts, having been sunk; the heading is now through from end to end, so that the water, which occasioned much trouble and expense, now finds its way out at the lower end. The Lisieux tunnel will be through in a very short time. The line will be open to Pont d'Evêque in about a year. The line from Toulon to Nice is being constructed, under the direction of Mr. Gaduel, who has taken up quarters for himself and staff of assistants at Cannes. The important line from Lyons to Bordeaux is conceded to the Orleans Company; it is to pass by Clermont, in the mountainous district of Auvergne, by Ussel Tulle and Brive.

The Lyons and Grenoble line is decided to be constructed in the valley of the Ain.

The Kehl-bridge over the Rhine, near Strasbourg. The Convention of July 2, 1857, states that—

1. The bridge will traverse the Rhine opposite the Bavarian Custom-house.
2. To be lattice ironwork for double line, with footpath for the public on one side.
3. A swing bridge, of 80 mètres opening, to be placed at each end.
4. The length of bridge to be 265 mètres: four piers in the river, 63 mètres from face to face.

After the inauguration of the railway from Chalons-sur-Marne to the camp, M. Duméry, locomotive engineer-in-chief of the Chemin de Fer de l'Est, submitted to the Emperor Napoleon a new locomotive, with furnace to consume its own smoke. This is effected by making use of an inverted syphon, through which the coal passes, and is carbonised in its upward passage, becoming coke when it reaches the level of the fire. The smoke is consumed in its upward passage through the upper stratum of incandescent coke. Sarrebuck coal was used, and the result satisfied the authorities.

Surveys are to be made from Avignon to the Alps, by the valleys of the Durance and the Coulon rivers. In Holstein, the Gluckstadt and Itzehoe is verging towards completion.

Denmark.—Lubeck and Hamburg line conceded to the Lubeck and Bahren Railway Company.

Bavaria.—By the opening of the line from Manich to Rosenheim, which was proposed for the 12th October



(the *fête* of the king), the whole line will be thrown open from Caen, by Paris, Strasbourg, Munich, to Rosenheim, except the bridge over the Rhine above mentioned.

The Ligurian coast-line is advertised for concession to the Sardinian Government. Specification to be seen at the offices of the Sardinian legation in the capital cities of Europe—London, Paris, &c. It is to start at the river Var, the Nicene frontier of France, and end near Spezia, at the Modenese frontier. Tenders to be sent in before January 1, 1858.

Saxony.—Interesting surveys are being made between Annaberg and Bohemia, in that very mountainous part of Europe.

Bohemian lines open this year—Teplitz to Assig, Paderbitz to Königgratz, Kladno to the iron mines of Nutschitz.

The Portuguese Government have refused subventions to new companies. The line from Lisbon to Oporto is finished, or nearly so.

A company has been formed to drain the Venetian marshes, on the shores of the Adriatic, from Venice to the Isonzo.

The François-Joseph group of Austrian railways proposes to limit its former scheme by suppressing some branch lines.

On the Northern Spanish Railway, the section Vittoria to Nanclaus to be shortly commenced. Contract taken at five per cent. under the schedule of prices.

The line from Nocera to Cava (Naples) was opened on 31st July last. The gradients are from 1 in 100 to 1 in 50 and 1 in 40, and heavy works were obliged to be made for the purpose of avoiding steeper ones. The engines, of a new construction for heavy inclines, were made in the workshops of the railway, on the spot, under their chief engineers, one French and another Neapolitan.

Prussia.—The Dortmund, Witten Steele Essen and Mulheim Railway, have, after much delay, obtained authorisation to construct it.

Spain.—Saragossa to France: commission of French engineers appointed to report.

The Archduke Max has obtained from the Emperor of Austria the power to construct all the Lombardo-Venetian lines as projected, and hopes at the end of the next year to see Piedmont and Lombardy united by railway.

The rapidity of execution of the works in construction between Naples, the States of the Church, Tuscany, Modena, and Lombardy, is the admiration of every one.

The high bridge over the Reno, near Bologna, has fifteen arches, of large span: 1,000 workmen are employed on it.

The Châumont and Langres section of the Paris and Mulhouse line was opened to the public on 1st October.

The line has, in the above section, nine cuttings, two tunnels, and seven bridges. In 34 kilometres it crosses the Marne river four times.

The late heavy rains have retarded the opening of the Besèges and Alais line.

Surveys have been commenced on the new line from Paris to Soissons, lately conceded.

Surveys are also being made for a line from Caen to Angers.

A new line is projected from Dieppe to Paris, by Neufchâtel, Forges, Gournay, Gisors, to Pontoise, on the Northern line, and Argenteuil, on the Western line.

The French engineers who have levelled over the continuation of the Kursk-Kowno line to Liebau, report that it should run by Liebau, on account of the insurmountable difficulties, and be prolonged to Riga by Dunaburg.

The same engineer, M. Duméry, who invented the new furnace for burning French coal in locomotives, has also just brought out a new apparatus (adaptable to all steam-engines), called a "*conduit réchauffeur*." By means of this the steam is passed from the boiler into a heating cylinder, in which its temperature and density are gradually increased before it enters the working cylinder. This increase is so contrived that at the commencement of the stroke the steam enters the working cylinder but slightly augmented in temperature and density, and that the maximum of the two is attained only after the stroke has been completed by the piston.

The Western Swiss Railway has commenced works between Yverdon and Yvamaures.

The Provincial Council of Turin have voted 8,000*l.* in favour of a new line from Savona to Turin.

Hungary.—The line from Temesvar to Szegedin was opened for traffic on the 24th ult. Thus the route is complete from Vienna to Temesvar except the passage of the river Theiss, which is to be spanned by a magnificent iron bridge, most-high above water, to be finished next June. The traject is now performed by a substantial temporary bridge and temporary deviation of the line at that point.

The Victor Emmanuel Railway purposes completing its junction across the Rhone next summer, at Calor.

It is not true that the Seville and Cordova line has been finished, as reported lately in some papers: 11 kilometres only are contracted for, viz. from Lova to Pensador. The whole line is expected to be opened in the beginning of 1859.

The works of the Königsberg line to the Russian frontier are to be commenced before this winter.

Mons and Hamont Railway works very actively carried on. To be open in six weeks.

The prolongation of the Munich line from Rosenheim to Salzbögen will not be authorised until the line from Linz to Passau is seriously put into hands.

In Denmark the Glückstadt and Itzehoe line is to be open in a few days.

The Duke of Rinzars has obtained the concession for the Lisbon and Cintra line.

The French Government, to conciliate the wishes of the interested, will give approval to prolongation direct of the Burgundy line to the Sardinian frontier, near Chambéry.

The Northern Railway has ordered for its numerous new concessions 30,000 tons of rails, and 10,000 tons of chains.

Great activity on the Caen and Cherbourg works.

The marshes of Cotentin present some difficulty, the embankments subsiding rapidly by their own weight into the soft ground; but the contractor hopes, by continued filling, to gain solidity at the end.

A French engineer proposes to run tramways for horses from the Provence lines to the favourite resorts of strangers, &c. Hyères and Cannes, &c.

#### THE IMPROVEMENT OF THE CONDITION OF THE ENGLISH WORKMAN.

CONSIDERING the enormous wealth of this country, viewing accumulated property in a mass, as well as the huge fortunes which have been gathered up by individuals, it would seem that we are a thrifty nation. Unfortunately, nevertheless, in many points we are both careless and extravagant. It would be easy to give a long list of particulars which would explain our meaning, and show that in many instances those who had the means of preventing it have wasted human life by not making certain necessary provisions; and that the industrious class, the mainstay of the prosperity and strength of England, have not been sufficiently careful of themselves.

A change is coming over the management of our workshops and manufactories: the introduction of steam power, and the subdivision of labour, which has, in a great measure, been the result, have caused colossal establishments to rise up which are really wonderful to behold. Fifty years ago, a manufactory which employed 100 men was an establishment worthy of notice: now we may travel over this land and see it thickly studded with works where from 1,000 to 2,000 hands are busily employed. Whether this concentration of human power will be eventually better for the working classes, or otherwise, is a question worthy of the most careful consideration, but which we will not now attempt to discuss. One thing, however, is certain, that some of these manufactories, including the men employed and their families, have a population of 8,000 or 4,000, enough living people to occupy a small town. Amongst such important bodies of the English people, there should be provisions made of extent in proportion to the magnitude of the subject. If local government is found useful in towns, would not a system of management in these large communities be equally valuable?

We are induced to bring this matter before our readers, in consequence of various conversations with both the managers and workmen of several large manufactories. In most cases the masters are most anxious to do all in their power for the benefit and improvement of the social position of the men, but there seems to be a fear on their part of being intrusive: the operatives are similarly sensitive, and so it is that little in comparison with what might be done is effected. It is a pleasant circumstance, that in Lancashire and elsewhere, the masters and the workpeople have, in some instances, acted together in that kindly and wise way which is to the advantage of all parties; but in the great majority of cases this has not been done, and there can be no doubt that many means of saving money, and also adding to the comfort of the employed, is lost by the want of agreement between the great body of the men and their employers.

In many very important establishments, no provision is made for sickness or accidents; and yet how easy it would be to devote a few pence weekly to a fund for that purpose. At Stephenson's (Newcastle), each workman pays a penny weekly, and with part of this sum adonation is made to the town infirmary, which gives the means of admission for a certain number to that institution, and the remainder of the money is distributed in weekly sums to those who require

aid. In other places, where large numbers of persons are employed, some have moved in the right direction; but nothing in proportion to the importance of the subject, has yet been carried out; and believing firmly that, by system, the English workman may be able to provide for himself and family in an independent manner, a cheap and wholesome dwelling, provision in sickness, cheap and good education, and medical advice, we invite consideration to the subject.

It is worthy of note that the ribbon weavers of Coventry are, to a considerable extent, their own masters. A large number possess looms which are worth 40*l.* and upwards. The purchase of such expensive matters by workers who, on the average, earn not much more than twenty shillings a week, is a remarkable instance of both thrift and industry. Many of these looms are placed in various parts of the town, in rooms in the upper stories of the houses, and during the last few years steam power has been applied to many of them by placing steam engines in central situations, and then laying on the steam power as the water companies do water to the various houses. It is evident that some difficulty must be felt in adapting many parts of the ancient city of Coventry to the purpose above mentioned. It is customary for the ribbon weavers and their families to live in the rooms which contain the looms, and it is certain that some of these are not well situated. In order to remedy the evil complained of, the Messrs. Cash (we are told by Mr. Cooper, in a contemporary) are erecting a block of 300 houses, in a pleasant neighbourhood outside the city. The looms in all these houses are to be turned by one huge steam engine, and the tenants of the houses are to have the enjoyment of gardens. This is a step in the right direction which is worthy of the greatest praise.

Mr. Cooper states that out of between 8,000 and 4,000 looms which are at work in Coventry, fully three-fourths are the property of "men who have had to practise hard saving and self-denial." In some instances schemes of union and mutual assistance, similar to the frechold land and building societies, have been resorted to, and we are told that the value of looms alone which are the property of the workmen amounts to 120,000*l.*; and to this 10,000*l.* or upwards must be added for winding-engines, filling-wheels, jacks, &c. We should be glad to find them extending their views to the purchase of dwellings.

#### IRON TRAMWAYS IN LONDON THOROUGHFARES.

AN improvement for which we have long contended is now about to be begun by the General Omnibus Company, or rather by a special company, already registered as the London Omnibus Tramway Company, and which has been originated by the management of the General Omnibus Company, whose constituents have authorised its formation, and voted the requisite supplies out of their surplus funds. The subject was brought before the General Omnibus Company in the reports of the Gérants and Council of Supervision at an extraordinary general meeting held on the 10th inst. From these reports it appears that the line of tramway to be first formed (under approval yet to be obtained from Parliament) will traverse the New-road, beginning at Notting-hill-gate, and running *via* Great Junction-road, New-road, City-road, and Moor-gate-street, to the Bank, with branches to the Great Western and North-Western railway stations, and to Fleet-street *via* Baginbge Wells-road. The estimate of capital required is 50,000*l.* The new tramway omnibuses, according to the report of the engineer, Mr. James Samuel, will weigh about 2 tons instead of 2½ cwt. and carry sixty passengers instead of twenty-one, at a speed of 8 miles an hour instead of 6. The fares will be lower than at present, and the traffic, it is estimated, will probably be doubled. The new break is considered to be of special importance in the stopping and starting of these tramway omnibuses. It has not been decided whether they will stop only at fixed stations, or wherever called upon by passengers to do so. The engineer's estimate of cost is as follows:—

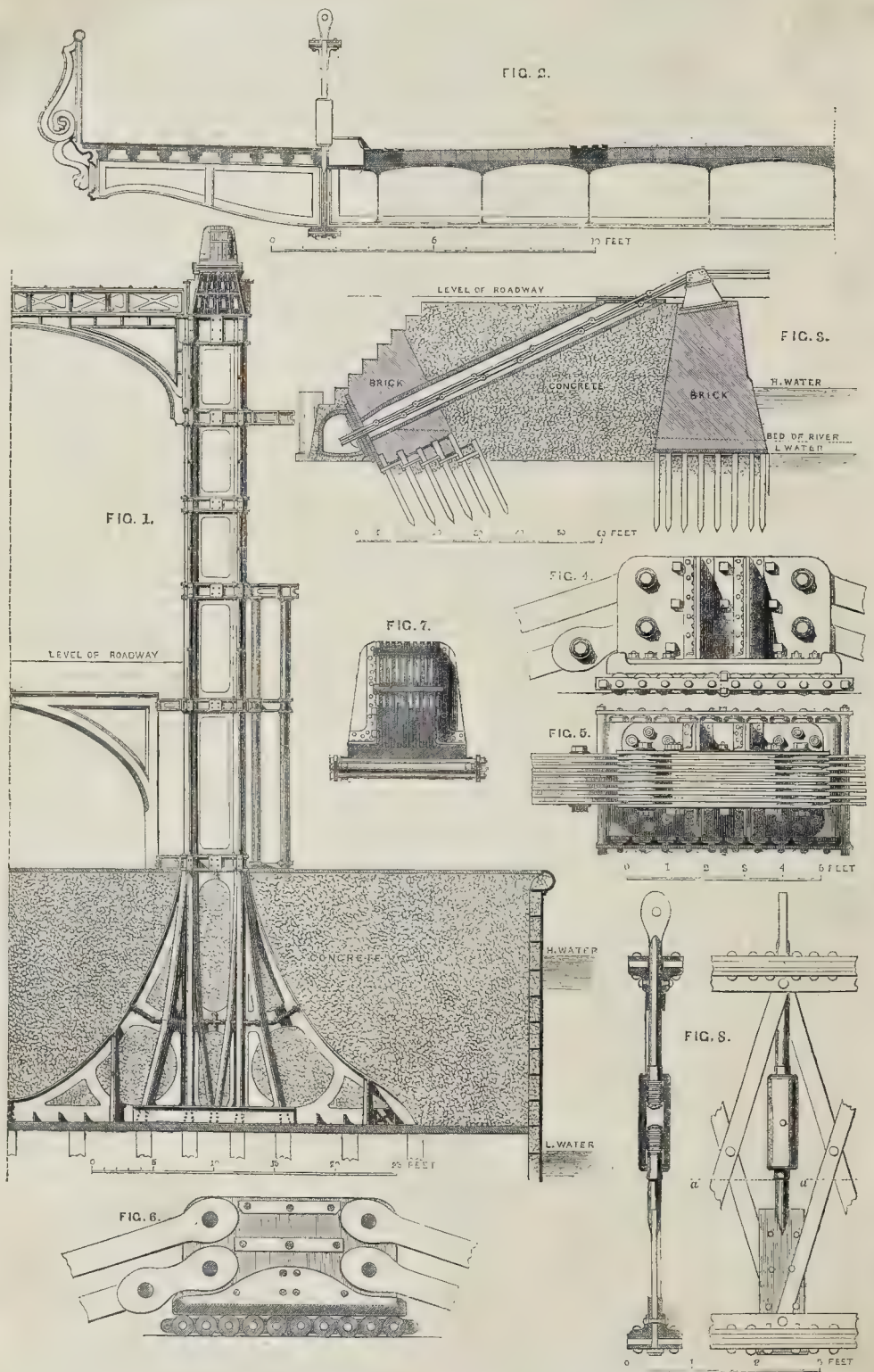
8½ Miles of double tramway (including sidings) at 8,000 <i>l.</i> per mile .....	£25,000
34 Omnibuses, at 220 <i>l.</i> each .....	7,480
320 Horses, at 26 <i>l.</i> each .....	8,320
Law, Pa.liamentary, engineering, and preliminary expenses .....	5,000

The tramway will be double, and flush with the surface. It will occupy the middle of the road, and will be of hammered iron, on longitudinal bearings.

#### ALLOWAY NEW KIRK AND BURNS'S MONUMENT.

—The higher the walls of the new church at Alloway-ryse, says the *Advertiser*, the more evident appears the accuracy of our first impression, that it all but ruins Burns's monument. The expression of regret and indignation, instead of passing away, as Mr. Baird might imagine, is deepening and spreading.





CHELSEA SUSPENSION-BRIDGE: DETAILS.





CHELSEA SUSPENSION-BRIDGE.—MR THOMAS PAGE, ENGINEER.







## CHELSEA SUSPENSION-BRIDGE.

In a previous volume (XII. p. 186), we gave a view of the Suspension-bridge, then in course of construction over the Thames at Chelsea, together with descriptive particulars of the foundations and superstructure. The bridge is approaching completion: January is to see it opened; the approaches are formed, and the embankment of the Thames adjoining it, on the Middlesex side, is completed, and we now therefore add to the previous illustration a view at large of one of the piers, with the east-iron columnar towers which carry the chains, and various details of parts of the construction. A comparison with the previous view shows that some few alterations in form have been made: for example, the towers are now in one story, up to the bearing point, instead of two; and the pointed shape of the arch over the roadway and below it has given place to the semi-circular and elliptical form. The dimensions have been but slightly altered. The total length between the abutments is 705 feet; and including the abutments, 915 feet; the centre span at point of suspension is 347 feet; the side spans, 185 feet; the deflection of chains at centre is 29 feet; and at the sides, 30 feet 6 inches; the height of the roadway at towers above Trinity high-water mark is 24 feet 2 inches; the height in centre is 24 feet 6 inches; and at the abutments, 23 feet; the clear headway above Trinity high-water mark is 21 feet 8 inches; at the abutments it is 20 feet 2 inches.

The piers upon which the towers are built are each 56 feet in length and 19 feet 3 inches in width, and terminate in curved cutwaters 7 feet 6 inches above the level of high-water mark. The foundations of these piers are similar to those which are being formed for the arches of new Westminster-bridge, and which were described very fully and defended by us at a time when opinion was running adverse.\* They consist of timber piles driven into the London clay below the bed of the river at intervals of 3 feet over the entire area of the piers, and cut off at nearly low-water level. The outside of the piers is formed by east-iron piles of 12 inches diameter and 27 feet long, driven 20 feet below low-water mark, and, between these, east-iron plates are driven so as to protect on all sides the bearing piles by a metallic casing. The space thus enclosed is then dredged to the hard stratum of gravel above the clay, filled in with concrete, and the whole secured by wrought-iron tie-bars. On the bearing piles is a flooring of solid stone bedded on the concrete. All the caisson above low water is lined with brickwork, and the cutwaters at each end, where exposed to constant shocks from drifting vessels, are built of solid brickwork.

Each tower is formed of eight east-iron hollow columns, 1 inch thick, connected by cross-frames, as shown in fig. 1. These columns, with spreading feet, go down to within 2 feet of low-water mark. The height from high-water mark to the point of suspension of the lower chain is 59 feet 6 inches, namely, 7 feet 6 inches from high-water mark to the platform, and 52 feet from the platform to the underside of the lower chain.

The sectional area of the chains at the centre of the bridge is 212 square inches, which gradually increases in proportion to the strain, towards the towers, where it is 226. The suspension rods passing from the chains to the roadway of the bridge are 2 inches in diameter, and placed 8 feet apart. They have a joint at each extremity, the upper one allowing a motion parallel with the chains, and the lower a transverse motion. The roadway has a rise of 18 inches from the land moorings to the centre. Two wrought-iron longitudinal lattice girders (as described in our first account) extend the entire length of the bridge, and are secured to the suspension-rods to which the transverse girders supporting the carriage-way are also bolted. These girders are eighty-seven in number. They are formed of boiler-plate, strengthened with angle iron, and are 52 feet long by 2 feet 8 inches deep, and weigh 32 cwt. each. Between these girders pass wrought-iron bearings, to which are bolted plates of iron of the same material which forms the roadway. On the upper surface these plates are covered with bitumen, over which are laid compressed slabs of asphalt and cork cuttings. This forms the bed for a wood pavement of blocks of ash oak, which are again coated over with asphalt and the paved surface of the road completed.

The bridge was designed and is being carried out by Mr. Thomas Page. Mr. R. A. Rumble is the resident inspector; Messrs. Young and Co. are the contractors.

We may add, that Messrs. Howard and Ravenhill, of Rotherhithe, have executed all the chains, suspending-rods, and plates, and that these have borne the severe test of a tensile strain of 13½ tons per inch, without yielding  $\frac{1}{16}$ th of an inch to a foot, and that the work is very satisfactory.

So far as respects the design, artistically considered, we must confess to having no admiration for the termination of the piers, although the globe, we are told, is to be of glass; and as to the toll-houses, now nearly finished, we should seriously advise an alteration: they are not worthy of the important construction to which they are the preface.

The annexed details will make our account clearer.

Fig. 1 is a section through pier, showing the foundation of the iron columns.

Fig. 2, section of half the roadway.

Fig. 3 shows the anchorage of the suspending-chains.

Figs. 4, 5, 6, and 7, show the arrangements of the chains at the point of suspension, with the rollers beneath.

Fig. 8, the joint of the suspension-rods.

## OLD SEWERS A LATENT SOURCE OF DISEASE.

ALL modern houses are built upon a system, which by a little precaution, and a scarcely appreciable expense, affords at the same time health and comfort to the occupant. A very few years back, no provision whatever was made to guard against the absorption of moisture in the foundation walls of a house; later, every working bricklayer knows, that by the use of a single layer of slate (fixed in cement), ever so little above the ground range of a foundation, the rise of damp in walls is repressed.

What a catalogue of evils is avoided by this simple provision! The servants of an establishment are saved from all the penalties which damp walls are sure to entail upon the occupant of a basement story; all the aches to which the human constitution is subject are at once obviated; and apartments which, built on the surface, were formerly damp some 2 or 3 feet upward; or if sunken only 4 feet below the level, were damp to the ceiling, are now perfectly dry, and fit for sleeping-rooms.

The evil of damp walls is, however, but a small matter when contrasted with other abominations, relics—no, we cannot say of barbarous times,—but of the little regard which was paid by builders of only twenty years back to the easements required for every human habitation. The most important consideration in founding a structure, after the general plans are decided, is the proper disposition, arrangement, and formation of the sewers: the first postulate is a sufficient fall; the second, the due allocation of sinks and traps; the third, the proper and solid construction of the duct whereby the sewage is conveyed to the main or public sewer.

Until very recently, the house-drain was constructed in 4-inch brickwork, carried out throughout the whole covered area, the arch or covering was the same gauge, formed of bats or place bricks, packed loosely together with just as much mortar as might keep the whole mass in position, and then the whole system of house-drainage was covered in.

In process of time those drains, if well filled in with water, become solid, and as the phrase runs, water bound; in fact, the mortar of an old sewer is invariably harder than the brick—but there is an agency ever at work below the surface, against which it never entered into the heads of speculative builders to provide. The rats of London number millions, and their domain is the sewers; they occupy the street lines in strong colonies, and they make discursive visits into the tributaries; seeking their sustenance from the larders and waste of the circumjacent domiciles. They invade every house, and whilst the mortar is wet or green, they permeate the thin context of 4-inch brickwork; burrowing into every apartment, and making apertures through which the malignant and suppressed vapours of compound ordure ascend, and fill the mansion to the roof with the seeds of cholera. As water gravitates downward, those subtle vapours tend upwards; the pent-up malignities of 100 miles of sewer, being in a state of perpetual agitation to find vent upwards, thus fill with malarial the chambers which they were formed to disinfect.

In many, not very old secesses, and even in good squares, the stench emanating from the sewers, is at times so rank, so overpowering, and so lethal, that the tenant would be justified in throwing up his occupancy, on the plea of danger to the health of his family. To tamper with such imperfect drains, or to endeavour to cobbles them up, is wholly useless. You may find out a dozen rat-holes, and cement them; you may open out the external areas, and clear the traps; but all is in vain. The entire system is diseased, and pregnant with infection—it is open at every chink; therefore the only remedy is to clear away the whole original system, and to lay down in place thereof non-absorbent tubular drain-pipes, well luted together at the joints with properly attamped mortar. The confined and sublimated vapours ooze

through the brickwork, but drain-pipes are impermeable.

By thus providing for security against damp in basement walls, and by simply using the proper conduit for house sewage, every ground or sunken floor of the metropolis may be rendered wholesome, comfortable, and clean.

Meanwhile, a visitation from house to house, to look after these matters, is seriously incumbent on parish authorities. Whilst they inspect external sewers, decayed house-drains are in equal need of revision.

## HARROW REVISITED.

It is gratifying to find that the authorities of all our public schools do not stand stock still. It is wise to advance with the times, and keep pace with the progress of the age. Harrow is in the hands of improvers: the builders have been busy, and are busy now; and, what is more, they have contrived to mix the useful with the ornamental. As usual in all such cases, a critic might find food for his maimable allowance of grumbling,—to show his learning; for critics always assume to themselves the privilege of knowing more than anybody else. Stark criticism is not my business: it is simply to describe what I saw of the actual state of things in the famous village,—such an odd, quaint, dear little up and down, in and out village, as it is, with its queer nooks and corners, little houses, and wire-clad windows.

The old village is getting quite juvenile, quite fresh and perky, and, like ladies past a certain age, has begun to smarten itself up, and disguise its many cracks and wrinkles. What with additions and demolitions, it has become more smart, more gay and jaunty, than it used to be,—in my juvenile days. A few years have made many changes, and certainly for the better: much has been done, but not too much, in the way of alteration. After a few years' rambling over many strange lands, we find great changes when we return to our old haunts. Whole generations of juveniles have come and gone, passed through the dingy portals of the old school, and entered into the rough and stormy paths of life; but the weather-beaten school-house stands bravely where it did, and the old church—such a rare old church,—still crowns the hill,—with a new face to be sure, but proud of its hoar antiquity, and, may be, proud of its smart new dressing.

The old turpitude-house has gone,—clean disappeared, with its odd chimney and queer quaint gables: although it may be missed, it is no loss; but yet it is an ancient landmark swept away, and more than one weather-beaten wooden house has followed in its wake, by this time burnt for firewood: peace to their ashes. The old sign at the "King's Head" still swings in its gibbet, and creaks as shrill as ever on its rusty hinges. The house itself has been smitten with the prevailing taste for change: the two queer little parlours have been knocked into one—actually into one room,—smartened up with new sashes, and squares of coloured glass, the artistic production of the most eminent glazier of the village.

Mine host and his artist friend, the glazier, are proud of the effect of their joint labours. They have put in new glass, but knocked out many a reminiscence by so doing: many a well-remembered name scrawled on the ancient squares has gone for ever,—like the noble fellows who scratched them on the frail and brittle glass.

A few, very few days since, I read in the melancholy columns of our Indian news the death of as fine a fellow as ever drew sabre in defence of the honour of our brave old flag. I searched for the well-remembered square where I saw him scratch his name, but alas! like himself, it has gone. Oh, mine host of the old "King's Head," may the gods forgive you, for I cannot.

And why has mine host thrown these two old rooms of his into one? Because the master of the school was going to give a dinner to the inhabitants of the village, in commemoration of the erection of new school-rooms and the new memorial chapel. Good,—the occasion is good, the cause is good; but, master landlord and glazier, you have demolished what you can never replace. Give your sign a new face, repaint "bluff Hall," if you will; but you should have left these scribbled squares of glass for the sake of the names they bore, and for the men who scratched them there. Time-honoured names of brave men were on those squares of thine, mine host; but they are gone. The old church has been smartened up, the time-eaten walls covered with a new coat, not of "rough cast," thank goodness: let us hope the church menders have for once done what they ought to have done, although perhaps they may also have done what they ought not to have done. They have improved the church inside and out, therefore let us give them thanks; for it is not one of the usual churchwarden's blotches,—it will pass muster very well; and, as I am not critically disposed, I will not write a critique.

There is one "restoration" in the church which

\* For diagrams see vol. xiv. p. 498.



gladdened my eyes: it was to see the time-worn monumental brass of the founder of the school rescued from its old position, saved from the nailed boots of the villagers, and now fixed in a pillar in a conspicuous part of the church. It was grievous to see the brazen effigy of the generous founder of the noble school so utterly disregarded as to form part of the pavement of a pew, daily trampled underfoot, and effaced by the feet of our village friends, who owe everything to the man whose monument they so scurvily treated.

Surely this is a sign we live in better times. The monumental brass of the founder of Harrow School has at length been thought worthy of a place of safety in the church where he so often worshipped. Romans, countrymen, and friends, I thank you for your justice, though 'tis but tardy and long withheld.

The old font too,—what strange vicissitudes it has seen: once the ornament of the church; then the ornament of a little garden; then the receptacle for boots and shoes, blacking-brushes, and rubbish of that kind,—to say nothing of bath bricks and hearth-stones. It is strange, but true, that this venerable piece of antiquity—a quaint old font of Purbeck marble—was turned out of the church, vilely abused for many years, and at last re-polished and restored to its proper place in the old church, from which it had been removed, doubtless, by the hands of some long since defunct improving churchwarden.

It used to grieve me much to see this old font filled with dirty boots and shoes instead of holy water. I often raised my voice, but in vain. I have at last had the satisfaction to see the font restored, as well as the founder's brass; so let us hope that the worthy people of the village have satisfied their consciences, and done at last what ought to have been done many years ago.

They did well when they saved this venerable font; and so did I; for when it was in the course of restoration I preserved a chip to convert into a seal, which has travelled many a weary mile with me over sea and land in many and varied climes.

It will be gratifying to all true Harrovians to know that the monumental brass of old Lyon, the founder of the school, has, after many years of vile abuse and shameful neglect, been carefully preserved in a slab on one of the pillars of the church. Could old Lyon have risen from his grave, he would have shaken his bonny fist in the pale faces of the authorities of the school for their neglect of his monument, and he would have said, in a voice of thunder—

*"Exegi monumentum are penitus,  
Regale sit pyramidum altius:  
Quod non venter e'as, non Aquilo impotens  
Fossit diruere, aut insuperabilis  
Anorum series, est fuga temporum."*

Of the old school-house nothing need be said here; as it remains much the same, untouched by any one, and gently used by Time himself. It looks down complacently on the new wonders springing up at its feet, and long may it do so.

The school chapel has been pulled down—quite a recent building—to make room for the new memorial chapel now in course of completion, and but recently consecrated.

Side by side with the new chapel is also a new school-house, built entirely of very red bricks, to correspond in some measure with the venerable front of the old school.

These new class-rooms are a great addition, not only to the architectural appearance of the village, but to the convenience of any one connected with the school. It is a simple, unpretending building, not at all burdened with decorations, being evidently built more for use than ornament: it has a quaint air of douce utility, more formal than elegant; and, if not picturesque, it has the merit of being neither out of character nor unsightly—negative virtues, but virtues after all.

If it claim the merit of harmonising with the old school, and being in character with the head-master's residence, it has at the same time the privilege of being in rather violent contrast with the florid ornamentation, and white stone dressings of the new Memorial Chapel—however, variety is pleasing—and here, certainly, we have both variety and contrasting offices, placed side by side to claim attention from those who are critically disposed, which I am not.

The new chapel is totally different in style, character, and general feature, from anything else in the old village, and bids fair to be one more lion added to the rustic wonders of the place. It is a building of considerable size for a school chapel, and of considerable pretension as well,—as, indeed, it ought to be under the circumstances of its erection.

It has been raised for a twofold purpose, as a school chapel for the boys, and to commemorate the memory of those gallant Harrovians who perished in the Crimean war.

It has ornamented seats, brass lamps, and will, it is hoped, be filled with stained-glass windows; one of which is already in its place, and others are in pre-

paration. The steeple is not yet complete, nor indeed are all the external or internal decorations.

It is a great addition to the architectural features of the little village, and will, undoubtedly, be a centre of attraction for the numerous visitors to Harrow. It might have been placed in a better position; but then it might have been placed in a worse—so we are quits with criticism on this head.

The names of those heroic Harrovians who fell in the Crimean war will be emblazoned in a conspicuous place in the chapel—the last tribute which the living can pay to the dead—there, let us hope, to remain, not only in memory of the fallen brave, who nobly did their duty in the hour of need, but at the same time to set an example of courage and devotion, of deeds nobly dared, and victories won, to the numerous generation of young and generous hearts, having this memorial constantly before them while enjoying the sunny morn of life, and passing through the school—to fit themselves for similar honours, when they may pass away—for it is something, after all, to leave an honoured name behind.

But let us descend the hill and cross a noble meadow down to Duck Puddle—"Oh Phœbus, what a name!"—and cast a glance at the grand improvements effected in the bathing-place. A few years back this was a mere muddy pond, good enough for pigs to wallow in, but scarcely adapted for the purpose for which it was intended; for, *certainly*, the bathers often came out more like "little pigs than gentlemen." Now, however, all is changed. The bathing-place has been paved, bricked, and slated, lined round with dressing sheds, and what is of more consequence, supplied with a running stream of clear water. This improvement is a decided step in the right direction, and if the water is not exactly equal to the limp stream of Bandusia, or Father Thames at Eton, it is clear and wholesome, and of inestimable value to the boys. It is an improvement which merits notice and deserves our warmest approbation, for it has been the means of giving to Harrow School what Harrovians much wanted, a place where they can bathe in clean water. The boys are proud of "Duck Puddle" now, and so they ought to be, for the cost is money really well spent.

Besides these alterations and improvements the new racquet-grounds must not be overlooked. They are conveniently placed, and are a useful addition to the necessary equipments of a great public school, where ample accommodation is required for all kinds of manly games.

While on the subject of these improvements, it has occurred to us that something not only might be done, but ought really to be done, to improve the little dingy room dignified with the name of the Library. A great public school like Harrow ought to have not only a better room but a better library than it has at present. In this respect Harrow is far behind its rival, Eton; and now that the school is well up in numbers as well as in reputation, we hope the "Harrow gentlemen" of the present and future generations will put their shoulders to the wheel and make a stir, not only to moot the question of a better library and more suitable room, but will set to work in earnest, and at least take one step more in the right direction and get up a library worthy of the name and reputation of the brave old school. It would soon be furnished by presents from "old fellows," and in a few years would assume proportions worthy of the standing which Harrow has acquired in the list of our public schools.

This hasty and rambling sketch might be much extended, the subject being anything but exhausted; and, before closing, it may be well to add that the authorities have shown great wisdom, and some liberality, in providing a suitable place for the children of the inhabitants of the old village. This is wise, for they have great and undoubted claims to share the benefits of Lyon's noble legacy to the inhabitants of Harrow.

What changes we find after a few years' absence from any place! Here at Harrow is the "old pike" demolished, the old church restored inside and out, the founder's old monumental brass carefully restored, the new chapel pulled down to make room for a newer, and dearer old Duck Puddle is a puddle no longer. Old houses knocked down and new ones run up, old faces gone, and old friends after them, and so on to the end of the chapter, a clear and convincing proof, ye gentlemen of Harrow, that the longer we live the older we get. Amen.

MR. OTTLEY'S LECTURES ON PAINTERS AND PAINTING.—On Wednesday last, Mr. Ottley, formerly art critic on the *Morning Chronicle*, delivered the second of a series of Lectures on Painters and Painting, as illustrated in the works of Michelangelo, Titian, Raffaele, and Corregio, &c. The Lecture, which was delivered in an interesting and masterly manner, commanded the applause of those present.

# PROVINCIAL NEWS.

**Ipswich.**—Mr. Bruff's plan for the complete sewerage of this town has been brought under the special consideration of the town council. The plan recommended, instead of the concentrated pumping system before proposed, the use of the river as the natural outfall, by constructing a sewer on each bank, to be discharged at certain points below the town, the mouth of each sewer being tide-flapped, so as to discharge the sewage freely for eight hours, and partially for five hours each day, and to store it during the remainder of the day. The total estimated cost was 30,000*l.* which the committee recommended should be raised in eight years by rates. The recommendation of the committee was adopted by sixteen to eight.

**Misterton (Leicestershire).**—The esquire of this place, with his brother, the Rev. G. H. Franks, rector, are erecting schools at their own cost. They consist of a boys' and girls' school, with residence attached, and an infant school, with class-rooms to each school, porches, lavatory, and out-buildings, the whole forming one group, situated in a pleasant meadow, well backed with woodland. The buildings are erecting in the native material, red brick being varied with grey-ened bricks, the windows all of stone; the style that of the fourteenth century, but very simple. The work is proceeding under the superintendence of Mr. Teulon. Messrs. Laws, of Lutterworth, are the contractors.

**Guildford.**—The alterations and additions to the union workhouse, commenced last autumn, are now completed. The new buildings comprise schools for 150 children, a fever hospital, additional wards for male and female paupers, alterations to the old infirmary, a new lying-in ward, &c. The school buildings contain two large school-rooms, two dining-halls, dormitories, sitting-rooms and bed-rooms for the schoolmaster and schoolmistress, with lavatories, bath-rooms, &c. On the boys' side are two work-rooms for industrial training, and on the girls' a laundry. All the rooms are lofty, and well lighted and ventilated. The schools and playgrounds are detached from the main building, with the view of separating the children from the adult paupers. The new hospital, which is also placed at some distance from the other buildings, in order to prevent infection, contains three wards for male patients, and the same number for female patients, with nurse's room, bath-rooms, &c. Great pains have been taken to secure perfect ventilation in the wards of the new hospital, and to improve the ventilation in the old infirmary, which originally was extremely defective. A new workroom has been erected for dissolute women, and new rooms provided for the aged and able-bodied men and women. The works have been executed by Mr. O. S. Ellis, from the designs and under the superintendence of the architect, Mr. C. H. Howell. The amount of the contract was 5,947*l.* and the actual cost of the works 5,938*l.*

**Tewkesbury.**—The Corn Exchange at Tewkesbury has been inaugurated. The new building has been erected on the vacant space in front of the Townhall, and forms part of it. The front, which is of stone, is of the Doric order. The plinth is of Stanway Hill stone, forming a contrast in colour to the Bath stone above. Two three-quarter columns and two antæ divide the front, between which are placed two windows and the door. The roof is of wood and iron, in three spans, the centre being of glass, supported by trussed girders. The contractors were Messrs. Collins and Knight. The front shows some sculpture designed and executed by Mr. H. Frith, of Gloucester. The total cost of the building is about 700*l.*

**Tenbury.**—The first stone of a Corn Exchange and public building has been laid at Tenbury, in Worcestershire.

**Swansea.**—New schools are being erected at the Cockitt, Swansea. Plans being prepared by Mr. R. Kyrie Penon, the diocesan architect, application was made to the Educational Board of the Privy Council, who made a grant of 350*l.* towards defraying the cost. The remainder is private subscriptions, partly obtained. The committee having advertised for tenders, several were sent in, and the tender of Messrs. David Evans and William Roberts, being the lowest, was accepted. The building will consist of two school-rooms, one for boys and one for girls, with separate entrances and lobbies, a class-room, and a residence for the master. The size of each school-room is 27 feet by 18 feet, and the class-room 15 feet by 16 feet. There will thus be afforded accommodation for 150 children. The cost of schools, residence, boundary-walls, &c. will be about 700*l.* The building will of necessity be plain in character, but so far corresponding in appearance with the recently-erected church for the vicar.

**Preston.**—Messrs. Cooper and Tullis, masons and builders, of this town, says the *Preston Guardian*, have just completed the construction of a new wing at Fulwood barracks, which is designed for the accom-



modation of married soldiers and their wives. The site is at the north-east end of the cavalry barracks, at the extreme end, the dwellings in front facing the exercise-ground. The entire range of tenements is 111 yards long, and 33 feet wide, with a flagged parapet all round, three yards in width. There are ten divisions, eight dwellings or compartments in each; and thus accommodation is provided for eighty soldiers and their wives. There is no attempt at ornamentation in the architecture. The walls inside are of brick, and externally the building is constructed of hammer-dressed Longridge stone. The building is two stories in height. Behind and in a line with the dwellings are a wash-house, drying-room, laundry, and other necessary appendances, all of stone. The stairs are of oak, and the floors of Baltic timber an inch and a half thick, with oak joists. Mr. J. Whitehead executed the ironwork, and Messrs. Wilding and Watson the plumbing, glazing, and painting. The cost has been £5,200. The entire amount expended in the barracks at Fulwood is 145,520*l*.

#### CHURCH-BUILDING NEWS.

**Little Addington.**—The church of Little Addington has been restored and re-opened. The roofing has been renewed, and the church re-seated. The tower, which is at the west end of the nave, and within the body of the church, was originally open on the north, south, and east sides. For many years the arches and piers which supported those three sides were hidden from view by being built up, and an unsightly gallery placed at the west end of the church. This gallery has been removed, and the three arches opened and restored. A groined ceiling in the north porch has been restored, and the plastering removed. The old oak pulpit and the chancel screen have been preserved and restored, these being the only two specimens of ancient woodwork in the church. It is to be hoped the chancel will soon be new roofed and restored. The restorations have been executed under the superintendence of Mr. E. F. Law, of Northampton, architect.

**Harrogate.**—St. John's church and burial-ground, Bilton, near High Harrogate, have been consecrated. Except the spire, which still remains unfinished, the church was completed in 1855, from the designs of Mr. Scott, since which time it has been used as a chapel of ease. It is built of dressed stone, and is covered in with blue slate. The style is Early English, and the site commands an extensive and picturesque view of the valley of the Nidd and the surrounding country. The interior is divided into nave, side aisles, and chancel, the aisles being separated from the nave by five arches, supported by clustered columns, the capitals of which are richly decorated with vine-leaves and fruit. The windows are lancet-shaped, the lower tier in the aisles being single lights, and the upper tier in the nave double lights, the whole being glazed with glass of a slightly green colour. In addition to the east window, with three lights, the chancel is lighted by two single-light windows on the north, and two on the south side, the whole being stained. The east window is from the atelier of Mr. Crace, of London, the subject including the principal events in the life of Christ. The north windows, representing events in the ministration of Christ, are from the works of Mr. Ward, of London; and the south are by Mr. Clutterbuck, the subjects being St. John the Baptist and St. John the Evangelist. The timbers of the roof are varnished. The church has been erected, at a cost to Mr. Sheepshanks, of Leeds, of between 9,000*l*. and 10,000*l*.

**Dorchester.**—The Congregational church in South-street has been opened. In style it is Decorated Gothic, executed from a design by Messrs. Poulton and Woodman, of Reading, in random walling of Ridgway stone, with Bath stone dressings. The front is ornamental, with a tracery window and gable, with finial over it. On each side is a porch, the south forming the base of the spire. This latter is of Bath stone, springing from light open tracery work. The dimensions of the body of the church are 76 feet by 37 feet, and the form is a parallelogram, with vestries and a school-house in the rear. The school-house is about 40 feet by 32 feet. The church, in the interior, is ceiled, but in the open timbered roof form. The seats are low, and of stained deal, and will accommodate 600 persons. The floor is of Poole Pottery tiles. The window at the rear is of stained glass, by Mr. Lavers, of London. The pulpit platform is of Caen stone, and is surrounded with ornamental ironwork, decorated with gold and ultramarine. The edifice is warmed by Hayden's hot-air apparatus, and lighted at night by two gasaliers. Mr. Wellspring, of Dorchester, was the contractor.

**Brighton.**—The enlargement of London-road chapel, and the schools adjoining it, undertaken at a cost of 1,500*l*., has been completed. The size of the chapel is doubled: it now holds 1,000 persons. No

alteration has been made in the style of the edifice. The roof has been raised, and left open. A gallery now runs entirely round the chapel, supported on slight iron pillars. The pews are low benches. The architect for the alterations was Mr. Simpson, of Brighton; the contractors, Messrs. Wisden and Auscombe. In close proximity with the chapel a new Sunday-school, unpretending in character, has sprung up, built by Messrs. Goddard and Blaker. This holds 300 children. It opens into the infant school, held daily, for 260 children. A sum of 800*l*. has been subscribed, leaving 700*l*. still due.

**Goldsborough.**—The rector has uncovered some recesses of architectural work in the chancel of Goldsborough church, which had been plastered over for ages. Goldsborough church is called a specimen of the early Norman style, and contains two effigies of Crusaders in full panoply, said to have been the companions of Robert Curthose, in fighting the Paynim host on the plains of the East. Their descendants are labourers in the village at the present day.

#### THE STAINED GLASS FOR GLASGOW CATHEDRAL.

I AM very glad to observe, from the *Builder*, that the decoration of Glasgow Cathedral with stained glass is now exciting some degree of interest in England, and that it has recently formed the subject of discussion at the meeting of two architectural societies. I am also happy to observe that on both these occasions the decision of the committee was condemned. It has all along been consistently and vigorously opposed by the architects of Glasgow, who have taken active, and, I believe, effectual measures to prevent the resolution of the committee from being carried into effect.

The power of the committee to determine anything at all is not recognised by Government; and I am quite convinced that Sir Benjamin Hall is by no means satisfied with the result of their deliberations, and that he will never consent to the course they recommend or sanction such a ridiculous libel on British art: so that, upon the whole, the probability is, that the resolution of the committee will become a dead letter.

I trust, however, that the matter will yet be more generally taken up by architectural societies throughout the country. Here, unfortunately, we are in a very bad position for bringing anything of the kind before the public. We have no such thing as a professional organ in Scotland. Moreover, our architectural society—the Institute—is virtually defunct here: only two meetings were attempted last session, and they were both miserable failures. This is owing to a misunderstanding with our Edinburgh brethren.

As to the removal of the stained glass windows from the crypt: the windows—specimens of the Munich school—are unsuited for the position they occupy, and, in my humble opinion, the sooner they are out of it the better.

GLASGOW.

#### STAINED GLASS.

**St. Mark's Church, Whitechapel.**—Five lofty lancets, subscribed for by the congregation, have just been erected in the chancel. They are geometrical, and contain eight medallions of subjects from the life of our Lord. Mr. Warrington was the artist.

**St. Nicholas's Church, Liverpool.**—The same artist has recently done for this edifice four north aisle windows, Perpendicular pictorial. Two of them are Crimean memorials to the rector's son, one a memorial to a late rector, the other to a merchant.

**Childwall Church, near Liverpool.**—A window has also been put up by Mr. Warrington in the north transept of this church. It is decorated, and is a memorial subject window to a Liverpool merchant's wife. This makes, with the east window, the fourth window the artist has done in this church, and he is now about decorating the entire transept for the same gentleman, and also painting a mural memorial in a window, of which the blank tracery is inside, for the vicar.

**St. Matthew's, Stoke Newington.**—A memorial window was erected on the eve of All Saints, in the south side of the aisle of St. Matthew's Church, Stoke Newington, consisting, in its stonework, of three main lights, and a large quadrifoliate centre one of the three lights filled with grisaille diaper painted glass, with bands of colour, and coloured centre bosses: in the upper parts of the two side lights are figures of SS. Peter and Paul; beneath these are panels of diapered glass, having in their centres medallions, into which are worked the initials of those by whom the memorial has been erected. The large upper quadrifoliate has a picture of the subject of "Our Lord's Agony in the Garden," and "The Sleeping Apostles." The window was designed and executed by Messrs. M. and A. O'Connor.

**St. Michael's, Coventry.**—The memorial window

to the late Colonel the Hon. F. G. Hood, in this church, has just been completed. Beneath the window is engraved the following inscription:—"To the honour and glory of God, and in memory of Colonel the Hon. Francis Grosvenor Hood, who commanded the Grenadier Guards at the battle of the Alma, September 20, 1854, and fell in the trenches before Sebastopol, October 18, 1854, aged 45;—this window was erected by the inhabitants of this city and neighbourhood."

**St. Mary's, Bury.**—A new painted window has been put into the east end of the north aisle of this church, by Mr. Edward Greene, to the memory of the late Mrs. Greene. The window consists of three lights, each of which contains two subjects, the upper one being the Old Testament type of the Gospel incident portrayed on the lower. The subjects are:—1. "The Gathering of the Manna," with the legend, "Your fathers did eat manna, and are dead;" and below, "The Last Supper," with, "I am the living bread which cometh down from Heaven." 2. "The Serpent in the Wilderness;"—"As Moses lifted up the serpent in the wilderness," the lower subject representing, "Our Lord and Nicodemus," with the inscription, "So must the Son of Man be lifted up." And, 3. "The Dividing of the Waters of the Red Sea;"—"The fathers were baptized unto Moses in the sea;" below which is "The Baptism of Christ," with legend, "As many as have been baptized into Christ have put on Christ." The small lights in the tracery at the top of the window contain angels holding scrolls and the sacred monogram; and the spaces between the upper and lower line of subjects contain the symbolical pelican, the Alpha and Omega, and the Agnus Dei. The rest of the window is filled in with diaper and border work of leaves and flowers. The work has been executed by Messrs. Heaton and Butler, to whose hands the west window of the nave has been entrusted.

#### LONDON SEWAGE CONVEYED BY HYDROSTATIC PRESSURE.

I WAS greatly pleased with the short notice of Mr. Lipscombe's proposal for conveying sewage to the sea, which appeared in your number of the 7th inst. If I do not greatly mistake, he has hit upon the solution of one of the great questions of the day; and I have the more confidence in the success of his plans because (though I do not mean to dispute his patent, as I confess I never thought of applying the principle on a large scale) your account of them immediately reminded me of an application of his method which I had in operation for some years at a former residence of my own.

I was an ardent agriculturist, and therefore determined not to waste the sewage from my house; but as it was built in a low situation,—so much so that in time of flood the stream which ran through the grounds came almost into the back premises,—I had to devise a method for conveying the precious fluid to a tank sufficiently distant not to be offensive, and to be near the land to which I wished to apply it. After counting over the want of fall, which precluded any ordinary method of proceeding, it struck me that I had a head of water at an elevation of some 12 or 14 feet in the upstairs closets. I therefore determined to have a tank made, lined with brick set in cement, from the upper margin of which I carried a line of clay-pipes, well socketed into each other, for some hundreds of yards, beneath buildings, &c. till they terminated at the bottom of the disused soil-pipe of the closets, which was of lead, and which was well secured into the end of the line of horizontal clay-pipes.

My proceedings were openly ridiculed by the workmen employed. They wanted to build a great barrel drain of a foot in diameter, which would inevitably have been clogged up with the stagnant filth, whereas my pipes were only 3 inches (I think) in diameter! When all was ready, and to see if any leakage occurred at the joints: all prophesied that such small pipes would be sure to be choked up, and the stuff would never reach the outfall into the tank, &c. which was on a dead level, and I believe actually rather up-hill. However, I had confidence in the pressure of fluids equally in all directions; and it was not belied; for, after repeatedly emptying the pans of the closets, and having all the stops poured down, at last I had the gratification of seeing the fluid begin to discharge itself into the tank. After a few trifling defects in some of the joints had been repaired with Roman cement, all was covered with earth, and for years a perfect drainage into my tank went on without disturbance from rats or any symptoms of choking; though other larger drains, from the scullery, &c. had repeatedly to be repaired.

Now, this little experiment really was a trial on a very small scale of the plan by which, as I understand it, Mr. Lipscombe proposes to do what so many long



heads have been puzzling over these several years, in reference to the drainage of the metropolis; and, as far as those parts are concerned situated at a certain elevation above the sea level, I have the greatest confidence in the idea. As to those parts at a very low level, I presume he would raise the sewage by steam power to reservoirs at a sufficient elevation; or perhaps force it at once through the pipes, as Mr. Mechi does at his farm, by forcing pumps.

Should means of profitably affording sewage on a large scale to agriculture be devised, it is evident that, by ramifications of pipes in all directions from the mains, it may be conveyed to a large extent of country, just as a water company supplies houses and streets from its mains under hydrostatic pressure. Depend upon it, sir, it is a fertile principle.

HYDRODYNAMICS.

#### THE BRAINTREE CEMETERY CASE.

##### ERRONEOUS QUANTITIES.

THE following was received from the contractor before the appearance of our last number:—

With regard to the matter of the Board identifying themselves with the sale of the bills of quantities, I have to say that I bought my copy of Mr. Cunningham, the clerk of the Board, and paid him one guinea for it. Further, on there being an alteration in the plans to reduce the first estimates, I received a written copy of altered quantities from the clerk of the Board, which was accompanied by the following letter:—

"I am directed by the Baintree Burial Board to inform you that they have determined upon certain alterations in the work tendered for by you on the 24th September, 1855, and that their architect has prepared a new bill of quantities (of which I enclose a copy), consequent on such alterations." \* \* \*

This letter having been sent to each party originally tendering, shows that the Board ordered the architect to prepare the quantities; that the clerk (the Board's servant) sold them; and also it recognises that all our estimates were based upon these bills of quantities.

By your quotations from the letter of S. Courtald, esq. (chairman of the vestry meeting), you have fully shown the ground upon which the Board deny the power of the architect to certify, viz.—that they have not attached their official seal to the contract, which the clerk of the Board induced me to sign. At this very time he was acting as solicitor between myself and the Board; and having signed the contract, I trusted him to affix their seal, thinking of course that as an honest lawyer he would see them do it. Had I not implicitly left it to him, I should not have been duped by signing what the other party did not sign, nor should I have thus placed myself in a legally worse position to obtain ready payment for that part of the debt which they all admit to be just.

As to my being aware that the risk of the quantities was mine, you will see by the architect's letter that he was positive they were correct, while I only suspected they were not. Besides, it was because I had done two hundred pounds' worth of work, and the clerk asserted I should have no claim for it till the contract was executed, that I signed it. I preferred to risk the lesser amount to the greater; but the Board has almost reversed my choice by deliberately refusing to pay that part of my bill which they confess to owe. \* \* \*

As you correctly observe, the strong point in my case is that the architect has certified the correctness of my claim, and has even explained the different items of my bill to the Board. But the solicitors to the Board exclaim, "We do not recognise an architect, for our seal is not upon the contract, which makes him umpire and his decision final without appeal."

Perhaps it is not for me to comment on the moral rectitude of such a defence. I only aver that I trusted the Board as a body of honourable men, and therefore, at the suggestion of the chairman and the clerk of the Board, agreed to try the claim for the 60*l.* for extra stone, as a friendly suit, in the County Court, never expecting to be entrapped into the unpleasant position of plaintiff in an action where legal technicalities were allowed to outweigh justice, and where gentlemen would undertake to defend that part of a debt (96*l.*) which, out of court, and even before the whole parish in vestry assembled, they acknowledged to be righteous.

November 9th.

JAMES BROWN.

In consequence of a letter appearing in your publication of Saturday last (page 662), signed "A. Cunningham," I beg the favour of a small portion of your valuable space in reply to a statement in that letter. I allude to that part where he says "the Board contends that the bills of quantities were prepared by the architect, and sold by him for his own profit." This I deny. The quantities were prepared by me in consequence of having a direct order from

the Board to do so, and who also authorised them to be sold at one guinea a copy; two copies were sold by the Board or their representative (one of which copies Mr. Brown had), and three by myself; the total proceeds of the sale being five guineas. The lowest tender delivered for the works was 1,160*l.* upon which the usual per centage, if it be charged, would be about 17*l.* The time of myself and clerk in preparing the quantities was five days (they being executed in anæsthetic printing), besides paying for printing and carriage, 2*l.*; but, instead of my charging the Board upon either of the above principles, which I should be justified in doing, I am content to take the proceeds of the sale as remuneration for my trouble and money out of pocket. It will, therefore, be seen that the words, "sold by him for his own profit," is not a fact, and might very well have been left out of Mr. Cunningham's communication.

Nov. 16.

J. JOHNSON, Architect.

#### METROPOLITAN BOARD OF WORKS.

##### THE MAIN DRAINAGE.

At a meeting of the Board held on Monday last, 16th, Mr. Thwaites in the chair, it was resolved, by twenty-eight to three, on the motion of Mr. Bristow, seconded by Mr. Carpmel,—

"That this Board, having taken into consideration the interview between its chairman and officers and Her Majesty's First Commissioner of Works and his referees on the 5th of November inst., reiterates its conviction that to extend the point of outfall from B<sup>3</sup> to Sea Reach at the cost of the metropolitan ratepayers would be unjust, and in direct contravention of the principles of the Metropolitan Local Management Act."

The discussion displayed considerable ability and common sense, and would serve to give a better impression as to the character of the Board than is entertained by some.

#### INSTITUTION OF CIVIL ENGINEERS.

##### LIGHTING MINES BY GAS.

THE first meeting of the new session, held on the 10th inst. Mr. Robert Stephenson, M.P. president, in the chair, was occupied by receiving a paper "On Lighting Mines by Gas," by Mr. Alexander Wright.

The paper commenced by noticing the almost universal introduction of gas for the purpose of illumination, and the causes of the attention of the author being turned to its adaptation to the lighting of mines, where the present mode of employing tallow-candles, or oil-lamps, was found to be prejudicial to the health of the miners, whilst the light afforded was so inadequate, that men could not perform their duty properly. It was stated, that the expenditure of oil and tallow in the mines of England might be roughly estimated at 500,000*l.* per annum.

In Cornwall and Devon alone there were about 30,000 men employed underground, who were lighted at an annual expense of 90,000*l.* per annum; and in one of the large mines the annual expenditure for candles had reached as high as 7,000*l.*

A general review of the state of lighting and ventilation of the Cornish mines induced the attention of the author to the introduction of gas for superseding candles and oil-lamps. An attempt had been previously made at the Tresevean mine in Gwennap, but it was abandoned. He concurred that it was preferable to make the trial upon a mine where explosive gases were not given off, as in coal-mines; and where the work was closer, and did not extend so rapidly.

The mine selected for the experiment was the Balleswidwen mine: the depth of the shaft was described as being about 780 feet, whence there branched out several levels and tramways, at various depths, and in numerous directions. About 340 miners were employed underground, in two changes, or shifts, each of about eight hours' duration. Each man worked about five days during the week underground, and one day aboveground.

In the ordinary mode of lighting, each miner burned four candles in eight hours, obtaining only an inadequate light for the expense incurred.

The gas which was introduced to this mine was manufactured at the surface, and was forced by a pump into a heavy gas-holder, composed of cast-iron plates, whence it issued by a descending pipe into the mine, under a pressure equal to 18·7 inches of water. The shafts and levels were fitted with wrought-iron tubes, proved by high-pressure steam, and from the branches, flexible tubes and burners were carried into the pitches and chambers for the miners, and to the floors for picking the ore. The tramways, also, had a sufficient number of burners, to preclude the necessity for using any candles or lamps in the mine.

The quantity of gas consumed was about 4,000 cubic feet per day, of two shifts of miners.

The comparative expense of the two systems of

lighting was stated to be much in favour of gas;—as the annual cost of candles was 834*l.* 3*s.* 4*d.*—whereas that of gas was 487*l.* 2*s.* including interest on plant, wear and tear, and all expenses.

It was stated that the sanitary condition of the mine was visibly improved: the ventilation was better, and there was an entire absence of the sickening smoke and bad odour, previously pervading the mine, which the author believed to arise from some particular compounds of hydrogen and carbon, given off during the imperfect combustion of the candles.\*

#### THE VACANT SPACE NEAR ST. PAUL'S CATHEDRAL.

THE subject of the appropriation of this piece of ground was a few days since brought under the consideration of the corporation of the City of London; and, so far as might be gathered from the reports published in the morning papers, an evident desire seemed to be shown to preserve the space, which enables us to take the finest view that is to be had of this glorious structure—the "Pearl of the City." But then this peculiar spot of land, which, uncovered, displays so fine a picture, is worth 50,000*l.*—a large sum undoubtedly, but not more than the worth of the view which, by means of this opening, is offered to both foreign visitors and the people at home.

Some small paintings, by Correggio, and other famed artists, are worth from 10,000*l.* to 15,000*l.* each, and private individuals of taste are delighted to be in the possession of such treasures. If a single effort of the gifted pencil is worth about the quarter of fifty thousand pounds, how can we feel that this price is too much for the picture which is offered to the sight of the passer-by, from the eastern part of this opening? Moreover, it would be only doing a tardy act of justice to Sir Christopher Wren, now that an opportunity offers of displaying to some extent a work which is not only a credit to the architect, but to the nation. This noble building has been surrounded in all directions in a manner which must cause every one of sufficient knowledge to regret the taste of our forefathers.

Sir Christopher Wren hoped, when the City was in ruins, that he might have been permitted to remodel it—to make a terrace along the banks of "Father Thames," to form a magnificent flight of steps from the cathedral to the river, and to plan the streets of the new city in intersecting straight lines, which would have added not only to the health of the heart of the metropolis, but would have also given us the means of appreciating the merits of the exterior design of our chief cathedral. Unfortunately, however, pounds, shillings, and pence, and a strange perversity, caused the City to rise from the ashes in all the crooked and narrow ways which had been formed by circumstances, and under the necessity consequent with a large population lodged within defensive walls.

At the recent meeting at which this subject was considered, many strong arguments were used in favour of preserving the land, and but few on the contrary, except the bare money value of the property. With the large revenues of the corporation, although at present overdrawn by the expense of various important alterations, the sum above stated might be spared, and the next generation, and those that follow, will appreciate the taste and public spirit which caused the City authorities to leave them a fine view of St. Paul's.

It is to be hoped that those who have so ably advocated the preservation of this space, which is of such great value to the public, will make renewed exertions; and that at the next meeting we shall be told that the corporation have declined building here. Independently of other advantages, it would be a famous site for important public monuments.

#### GRAVEYARD SCULPTURE AND FUNERAL POMP.

SOME months ago you kindly gave space in your columns to some remarks of mine, on the gross errors committed in a grammatical sense, or rather an orthographical one, by our sculptors of the various *mementos-mori* which disgrace and disfigure our cemeteries. To thank you for that favour is to acknowledge my obligations to you, for the public press, through you, multiplies the writer's views ten thousand fold.

Allow me, then, once again to refer to our "graveyards," now called "cemeteries." Generally they are placed in picturesque situations—they have all that the poetry of isolation, of green fields, and babbling brooks, or sunny hill sides, and extensive prospects, o'er hill and dale, can give to render such localities at once the fitting places for solitary grief.

\* A paper was read at the meeting of Tuesday last, the 17th inst. "On the Conversion of Wood by Machinery," by Mr. G. L. Moleworth.



or of saddened and hallowing reflection. Why, then, it may be asked, are these sacred repositories shunned by the man of taste, the reflective, the pensive mind? Why? Because every feeling is offended, and every insult offered to the eye and the imagination. Under the garb of humility, you have the pompous slab of "departed greatness," all the virtues are enrolled to tell how a man discharged the duties of life, whilst the notorious fact is concealed, that intoxication sapped, madness primed, and death fired the train, which resulted in an end rejoiced over by all, especially by "the sorrowing widow, and her weeping fatherless children." In more than one instance could I point out, in every suburban cemetery, cases where such inscriptions would show that—

"The funeral baked meats  
Did joyfully furnish forth the marriage tables;"  
and all the grief that was real was displayed in plying—

"The hearse, the coach, the panoply of pride,  
The graveyard sculptor,—would that he had died,  
Ere such a bill as this was shown!"

Ay, and so say I, for I have come to the conclusion that epitaphs and all the parade of woe are a mockery, a delusion, and a snare. A poor family loses a relative, near, dear, distant, or uncared for; a pompous funeral is determined upon; the "Gothic" hearse is bespoke, the feathers and "all the mockeries of grief" are there. All wonder, admire, and in the end imitate, never reflecting on the cost,—never asking how the "fatherless" will be pinched to pay for the black plumes,—how many an empty stomach will protest against—

"The swilling Bacchanals, who drink success  
To trade,"

and show the only sign of weeping in the drink-glazed eye.

I would ask of the *Builder* to denounce the whole of our existing system of burials and the after-death perpetuations. Do, pray, condemn the New-road style of mourning: let us, when we take a walk in our "graveyards" cease to be reminded that we are in the workshop of "Fitz-Humbag," or "Pretentious Brainsless."

Departed greatness sleeps in modest rest. A horse-slaughterer, or a quack doctor, or any other sepulchral advertising knave, blazons fabulous qualities, and calls them virtues, and boasts of goodness where only hypocrisy, imposition, and impudence, deluded ignorance and enriched themselves on the follies of a generation. "Sufficient for their day was the evil thereof," why are their heirs and successors to reap another harvest? is the question of your inquirer. Let the present generation show by their practice how they discountenance such pretensions, absurdities, and gross impositions.

#### A WALKER AMONG THE TOMBS.

#### FASHION IN THE WEST.

THERE are many strange phases of this metropolis, which strike the attentive observer, and few are more curious than the regular changes and observances which take place periodically in different neighbourhoods. Amongst these, it may be mentioned, that almost as soon as the primrose and wallflowers have superseded the crocuses, a change comes over the appearance of the London buildings. In squares and streets numerous bodies of painters are at work, and iron work and stucco are freed from the town smoke, and clad in hues more in contrast with the budding shrubs and trees. At that time the large extent of the western fashionable neighbourhood is deserted of its population, and many places are as quiet as a country village. At the doors of large mansions, trusty porters and housekeepers loiter, undecked with plush or powder,—the window-shutters of dining and drawing rooms are closed,—the assistants of the west-end tradesmen have an easy time of it, and in many instances the principals are looking as anxiously for the return of summer as school-boys do for the arrival of the swallows.

It seems a strange inconsistency, and yet so custom wills it, that when the buds open in youngest and freshest beauty, and when bright greenery begins to clothe the fine form of nature in the country, it is the time for its volatiles to rush from these sweet retreats, and seek shelter in the town. It is a Quixotic measure, however, to criticize fashion. As the painters and decorators complete their work, a busy scene of industry commences in the dwellings. The windows and shutters are opened to admit the fresh spring air—upholsterers are busy, and soon the balconies and windows become gay with choice flowers and plants, which perfume the air, and afford a pleasure to the pent-up Londoner which it is difficult to describe. As the spring advances, one by one the families reach the town; the sound of carriages begins to waken the quiet streets; and, by a gradual increase of arrivals, the "west-end," before

the hawthorn-blossoms have blown off, becomes as noisy in its particular way as Whitechapel, or parts of the Borough. Now come forth your dealers in wonderful news, with loud voices, announcing third editions of the *Times*, *Post*, and *Standard*. German bands, which have been travelling in the provinces, "discourse" very decent music. The butcher, the poulterer, and fishmonger are roused from their few months of torpor, and the sound of rolling wheels scarcely ceases from midday till the approach of early dawn. The porter has now assumed his chair of state and dignity of costume: the halls are lined with stalwart attendants, clad in their peculiar costume.\*

As the trees in the squares get thick with leaves, the bustle in the west increases; and long after the other districts have been in as quiet a state of repose as can be expected in this vast metropolis, the humming sound of the neighbourhoods of fashion may be distinctly heard in the suburbs. Hearing these and other voices of this city, in the gloom of night, thoughts arise of the many sad phases of the huge population which is here congregated, and hope is felt for the time when there may be a better understanding between the west and the east, and when the energy which is used in following the round of fashionable life may be, to a considerable extent, directed towards raising up and improving those thousands of human beings who are, now, even worse, than lost.

#### A PROTECTIVE COVERING FOR LEAD.

WILL you permit me, in answer to "Subscriber," to say I have found upon several occasions two coatings, of "equal proportion," of *dry white lead* and *red lead*, ground "by hand with stone and muller," in turpentine, and then thinned up with gold size and turpentine to the consistency of ordinary paint, not only render an old cistern sound, *provided there are no cracks in it*, but also prevent a new one, or lead pipe, for years, from being destroyed. I can speak from several years' experience, and would gladly give you, in my rough way (upon your promise to shield me from the ire of my brother plumbers, the anger of Mr. Zinman, the wrath of Master Slate-worker, and the venom of Gutta-percha and Co.) the result as follows:—

No. 1. A draught-pipe of pump was eaten through in twelve months: a second one was laid down with the same result: a third one was fixed with the above coating, and, for aught I know, remains there at work now: it is from four to five years since it was laid down.

No. 2. In a cistern supplied with pump or spring water, the bottom was entirely eaten through in a very short time: a second one was soldered in, and I believe to be at work, and has no sign of imperfection: it had three coats of the above composition nearly three years ago.

No. 3. A very large cistern was "fixed in *such a place* as none but a surveyor can direct" (and did Nena Sahib only know of it, he would use his utmost to get there).—"supplied with river water," quite new seven or eight years: after drying it thoroughly two years since, I painted it three times with the foregoing composition, and last week examined it, and found it perfect.

AN ARTIZAN.

#### NUMBERING AND NAMING THE STREETS.

I PERCEIVE the Board of Works have commenced a very necessary reform, by amalgamating the "terraces," "rows," &c. of the New-road into the "Euston-road" and "Marylebone-road," with consecutive numberings from end to end. I see, also, that they have judiciously placed the odd and even numbers on opposite sides, but a great improvement in the matter would have been to have made them run with the course of the river, and it would be well in future numbers to do so in those streets which run parallel with the river; and in such as run at angles from the river, to cause them to commence from the river, and proceed northward or southward as they are north or south of it.

In re-naming the streets, I perceive, from the list recently given, that no definite philosophic plan has been attempted, but that a purely arbitrary nomenclature has been adopted.

The various congeries of streets and squares ought to have been arranged in groups, and appropriate names given in each locality. For instance, something of the following system should have been adopted:—in the City we should have the names of Glasgow, Manchester, Birmingham, Lyons, Ham-burgh, &c.

Near the Docks—Liverpool, Bristol, Hull, Southampton, &c.

\* Horace Walpole, who was considered the man of taste of his generation, only wore hair powdered in the winter months: in summer he had his plain wig carefully brushed. Night it must not be worth while to consider the footmen in this respect?

Coveat-garden and Drury-lane—Shakespeare, Mas-singer, Ben Jonson, Knowles, Talfourd, Garrick, Macready, Kemble, Siddons, &c.

Lincoln's-inn, Gray's-inn, and the Temple—the names of eminent lawyers.

Near the hospitals—those of distinguished sons of Gales.

The termini of the railways—the towns through which these railways pass.

Plinico might rejoice in the titles borne by the Royal Family and the aristocracy.

Near the Palace of Parliament, the names of senators; and around the Government Offices, diplo-matists.

About the Tower, and other military buildings, might be grouped the names of warriors and noted battles.

Near the Tunnel and bridges, those of engineers; in Lambeth, of archbishops of Canterbury, &c.\*

In new localities, where there are no associations to suggest names, the main street or square might bear the name of some distinguished author or philosopher, or warrior, and the subordinate streets those of their works; as for instance—Sir Walter Scott's-square; Waverley-street, Rob Roy-terrace, Lammer-moor-crescent; or, Wellington-square; Talavera-street, St. Sebastian-row, Badajos-crescent, Waterloo-terrace.

Were this system adopted and carried out, as it might be, the facilities for ascertaining the locality of any place would be considerably increased; whilst the plan suggested in the Board of Works Report would only tend for a time to mystify and puzzle the wenders of the huge metropolis, and never be clear and comprehensible.

FRED. ROSS.

#### COVERING FOR GREENHOUSE FLUES.

IN reply to "C. H. K."—First. The best description of covering is the 12 or 14-inch square paving tiles or bricks: between each joint of the tiles lay a piece of iron hoop, an inch and a half wide, and use for the joints of the tiles a fine close joint of mortar, composed of lime, loam, and fine pounded brickdust, the inside of the flues being first wetted.

Second. That the first eight or ten feet are likely to suffer from the heat is true, and the application of cast-iron plates, say a quarter of an inch thick, as a first covering, is desirable, with the tile above, in manner as described, leaving a space of an inch and a half or two inches filled nearly in with sand: thus the iron will have room to expand (or a covering of Welch fire-lumps may be employed).

Third. To the inquiry if the flues in their course may descend as well as ascend—Yes, and without detriment, if proper judgment be exercised in the formation of the same.

#### A BRICKLAYER OF EXPERIENCE.

#### THE JOINTING OF MASONRY.

WORKS IN EXETER.

IT is to be hoped that the attention your correspondent has lately called to the compo-work recently done in Exeter will not be without its good effects. The restorations, too, for ever going on about the cathedral—to the credit of the Chapter be it spoken—would, no doubt, be all the better done under the eye of an architect; but a practice prevails in that city and neighbourhood which is almost worse than the continuation of plaster and slapdash—which needs the voice of *Punch* or your own good-natured strictures to discourage—and that is the unscientific and dishonest way in which the walls—whether of squared ashlar, or of rough or irregular range—are pointed: it is regular tuck and point of the bricklayers dabbed on—sometimes half a foot wide, projecting about half as much where there are joints, and sometimes where there are none at all; no matter, so that regularity and squareness be produced; and what is worse, the coarse joints, most of which are all the coarser from having the corners and strises on the face broken off, are filled and brought level with common mortar, on the surface of which, white green, some fine rubble is scattered, to complete the sham, and then over all is dabbed on the tuck and point!

There are architects in Exeter of reputed celebrity who must know a better way of doing such work, unless they consider such practical details beneath their notice, and leave it all to the mason; just as a celebrated civil engineer once told the House, in reply to a question put to him about some iron-work, that "the blacksmith would attend to that."

In your number, 176 (1846), your friend "X" well describes the pointing of ancient masonry, "All must be real." Pray tell the ecclesiastical mason in *Semper Fidelis*, that in pointing no mortar should ever project beyond the surface of the work; nay,

\* It must be understood that we continue to protest against any but the most absolutely required changes in the names of old streets. These have associations which compensate a thousand-fold for an occasional inconvenience.—Ed.



that it should be rather a trifle within it, and formed with a weathered or sloping surface, allowing the bed of the ashlar course above it to protect it rather; and that every joint should tell its own tale honestly, and mark distinctly the form of every irregularity, whether natural or rough from the hammer, of every stone. The Church of St. Lawrence, which has called forth these remarks, is a sad specimen of the mode of pointing prevailing in the locality: it is well to know that no architect has been employed about the work. At the Training College near the city, built a few years ago, the architect has set an example how pointing should be done where the stone-work is irregular. At Plymouth they understand the thing well, and at other places in the county; but in Exeter and its neighbourhood tuck and point seems to be the way thought necessary in all work of restoration where the walls are built of hewn ashlar. Much of it is discoloured by the first frost, and none can last many years; and so the last state of a renovated building becomes almost worse than it was before it was touched. X. Y. Z.

#### RECENT PATENTS.\*

W. CLARK.—*Improvements in Air and Water-proof Coatings, and in their Applications.* (A communication.) Dated Dec. 26, 1856.—This relates to coatings to be employed particularly in dyeing and painting, in the preservation of moulded plasters, porous stones, and organic pervious alterable substances. It is a kind of artificial leather composed of gelatine and tannin. The patentee imprints or coats the objects to be treated with gelatine, isinglass, or glue, and after drying soaks them in a solution of tannin, or of matters containing tannic acid, such as nutgall, sumach, boblah, or oak bark.

F. WALTON.—*An Improved Plastic Composition, and in the Application of Machinery for Manufacturing the same.* Dated January 20, 1857.—This consists in an improved plastic composition made of lacs or other resins possessing properties combined with fibrous substances for imparting tenacity and strength, and if requisite with colouring matter to improve the appearance. Also, in the application of masticating machinery, and of a heated cylinder, furnished with a piston rod and screw for preparing the composition, and keeping it in proper condition for working. Also in the application of ornamental forms with the composition.

L. W. WATKINS.—*The Manufacture of a Putty to be used in Glazing, &c.* Dated January 8, 1857.—The improved putty is a composition of two parts of an oil obtained in the refining of rape and lioseed oils, and commonly known as black acid oil, from its containing sulphuric acid, which acid is used in the refining of the said oils, added to one part of any alkali in solution, and mixed with it in a vessel, until, by continual stirring, it assumes a creamy or soapy appearance. It is then mixed by hand labour, or any other mechanical force, with a sufficient quantity of whiting, until it attains the consistency of dough, when it is termed putty.

WILLIAM EDWARD NEWTON, Chancery-lane, London.—*Tracing Cloth.* (A communication.) Dated March 5, 1857.—The improved process of manufacture is as follows:—The patentee first prepares a composition of the following materials, although not confining himself to the exact proportions named. Eight parts by weight spirits of turpentine or camphine, eight parts castor oil, two parts Canada balsam, one part balsam copaiva. This combination, when well mixed, is to be applied to the tracing muslin as by means of a sponge, spreading it evenly over the surface. The sheet is rolled up and allowed to stand for thirty-six hours or so; it is then unrolled, and any excess of composition is to be rubbed off. It is then to be again rolled up for a like period, when, if on unrolling it the surface does not appear to be dry, it must be further rubbed or wiped. It is then to be rolled again, and in two weeks thereafter will have become fit for use.

M. TRAYLES.—*Improvements in Tools for Cutting Cylindrical and Conical Forms.* Dated January 6, 1857.—For long cylindrical articles the patentee avails himself of a lathe; but for smaller the tool is rotated by hand. The mandril is hollow, to receive the wood to be cut, and the front end of the central opening is bell-mouthed. In the side of the mandril is a diagonal recess, deep enough to expose the interior of the mandril, and to permit of the edge of a flat blade projecting therein. These blades are secured by clamping screws, which permit of their adjustment or removal for sharpening. Rotary motion being given to the mandril, the wood is rapidly reduced.

JOHN WHEATMAN and JOHN SMITH, Sheffield.—*Grinding Circular Saws.* Dated March 14, 1857.—This invention consists in substituting for the grinding body at present in use a common sand or grinding

stone in saw grinding machines, in which the edge or periphery of the grinding body acts directly upon the saw secured to a table or bed-plate.

GEORGE MARSHALL, Morpeth, Northumberland.—*Saw-setting Apparatus.* Dated March 16, 1857.—In carrying out this invention, the apparatus is constructed with a novel arrangement of fence and spring or a lever to answer the same purpose. The fence has two or more set screws to move it backwards and forwards, or to secure it when adjusted to suit the setting of saws, and has also a rest for the saw-plate. The spring used in one mode of constructing the said apparatus is made so that when the punch is struck it operates to press the saw-plate firm on the rest, and at the same time is so arranged as to force the punch up after each stroke. The fence may be variously worked, and the apparatus may be modified to suit frame, large, and different kinds of saws.

J. WILSON.—*Improvements in the Manufacture of Steel.* Dated Jan. 2, 1857.—These consist in roasting or calcining granulated cast iron, and afterwards melting the roasted metal to obtain cast steel. Also in obtaining steel from rich iron ores by substituting such ores in place of bar iron in the usual process of cementation to obtain steel, and in melting the product so obtained with from 6 to 8 per cent. of oxide of manganese to obtain cast steel.

EDWARD MANICO, Bucklebury, London.—*Obtaining Foundations for Marine or other Structures.* Dated April 24, 1857.—The patentee terms his invention a "Caisson de fer." It is a hollow fabric of iron, its shape may be diamond or square, &c. He confines himself to no size. A caisson of a cubic yard in capacity (to the description of which he confines himself in this specification) will contain about one ton of stones, and when bedded in sand or shingle, the interstices between the uneven sided stones will receive from ten to twelve hundred weight of sand or shingle, which will work into the caisson, and form a solid mass, which, with the iron of which the cradle or caisson is made, will, when in position, weigh upwards of four tons.

#### PROVINCIAL PORTRAIT GALLERIES.

WHILST appreciating fully the attempts in the metropolis to establish schools and galleries of art, we have long been most earnestly impressed with the necessity which exists for fostering similar institutions in the large towns throughout the country. In Birmingham, Glasgow, Manchester, Edinburgh, and a few other places, there are periodical exhibitions of pictures by living artists, which are not only beneficial to the public taste of these spots, but are also of great benefit to the rising artists, who have in many instances been indebted to these local exhibitions for gaining that knowledge of their powers which has induced them, often with the best effects, to try their fortunes in the metropolis.

We have now, however, more particularly in mind the collection of portraits of our eminent men, which it is proposed to form in London, and feel regret that it does not make so much progress as the importance of the idea deserves. Valuable as such a collection of the portraits of the great and noble men of the whole land will be in this centre of our population, it should not prevent the formation of local collections. Much good might be done in such large towns, for example, as Manchester, Birmingham, &c. by collecting into one place the portraits of the chief men who have distinguished themselves in literature, science, or art, and have been instrumental in advancing the condition of their own district, or the country at large.

In other instances, the chief town of a county might be selected for this purpose; and many will be surprised, when they think on the subject, to find what a large number of worthies their neighbourhood can boast of, who might be usefully placed as patterns before the rising generation. Many of the town-halls throughout the country are bare of pictorial decoration, and nothing could be more appropriate than the hanging of these public buildings with portraits of eminent townsmen. Supposing this principle to be acknowledged, care would be taken in the building of future town-halls to render them fit for this purpose. These local collections should, in all instances, be as complete as possible, and easy of access.

Some neighbourhoods are more abundant than others in the production of remarkable men, and some seem to grow geniuses of a peculiar description: for instance, some famous painters have been reared in Devonshire. From Ipswich and the neighbourhood several men of note in both art and literature have proceeded. The city of Bristol might collect a goodly company of celebrated persons. Without, however, mentioning a long list of places, it is evident that few, if any, of the least note, would be unable to get together a gallery which would be an inducement and an encouragement to the rising generation.

The writer of this particularly noticed the need of

such local exhibitions during a visit to Northumberland, which can boast of a long array of famous characters. On the banks of the Tyne, in comparatively recent times, the two Bewicks, John Martin, the painter, George and Robert Stephenson, &c. were born. Lord Collingwood first saw the light near North Shields. Gardener, the author of "England's Grievances," was born at the same place. The two great lawyers, Lords Eldon and Stowell, were born in a narrow lane leading from the Quay-side, Newcastle. Hutton, the mathematician, who was at an alum-pit, received some education and kept a school in the town previous to his promotion to London. Morrison, the Chinese scholar, was a native of this place. The unfortunate Luke Clennel, with some companions who did not arrive at the same eminence, studied the art of painting in a garret near the Black Gate. Akenside, the poet, was born in a picturesque house in the Butcher-bank, which still exists. Peter Nicholson, who has done so much to spread knowledge amongst the artisans of this country; Fairbairn, the engineer; and a large number of others less generally known to fame, have been connected with the ancient borough; and in different places there are fine portraits and busts of most of these men, which are scattered about to little purpose, for they are but little seen. This matter has been before referred to in the *Builder*, but we deem it advisable to bring it again before our readers.

#### NOTES UPON IRON.

THE iron trade has experienced a convulsion since our last, for which few persons out of South Staffordshire, and not a large number in it, were prepared. Several firms had severely suffered by the failure of Glasgow and Liverpool, superadded as they were to the shutting off of all remittances from America. This latter circumstance had occasioned a somewhat heavy drain to be made upon the resources of the Wolverhampton and Staffordshire Bank, whose directors in consequence began on Wednesday last week to refuse the customary accommodation for paper taken by their customers in the ordinary course of business. The effects which followed were of the most serious character. Ironmasters who had been trading largely with bills were brought to a stand, and by Monday last three firms had issued circulars announcing that they should be compelled to call their creditors together. The Bank opened on Monday with assistance from the Bank of England to the extent of 50,000*l.* So heavy a call, however, was made upon them during that day that in the night the directors determined to suspend payment. The announcement to this effect, placed upon the doors on Tuesday morning, was received with the utmost consternation throughout the town and district, accompanied, as it was, with the receipt by creditors of circulars from two other iron-making firms. The panic which, however, had set in was allayed by the publicly-expressed assurance of the mayor of Wolverhampton that the notes would be paid in full, and by the expressed readiness of the merchants to receive them. Wednesday broke with the announcement of another iron firm being about to call together their creditors; thus making a total of six firms so circumstanced. There is no business doing that can be noticed, and prices nominal; makers, if for cash, accepting a surprisingly low figure. The workpeople at nearly all the works have only partial employment.

#### Books Received.

*Remarks on Secular and Domestic Architecture, Present and Future.* By G. G. SCOTT, A.R.A. London: John Murray. 1857.

WE must content ourselves on the present occasion with mentioning the publication of Mr. Scott's book, under the above title, containing an elaboration of those views which have been set forth in the author's own words in our pages, and have excited the ire of some correspondents. It consists of 285 pages, and is dedicated to Mr. Beresford Hope. In his preface the writer sets forth his motive and his desire. He says:—

"I want to call attention to the meanness of our vernacular architecture, and to the very partial success which has hitherto attended the attempts at its improvement: I want to point out the absurdity of the theory that one style is suited to churches and another to houses, and of the consequent divorce between ecclesiastical and secular architecture; to press upon architects who are engaged in the Gothic revival the paramount duty of rendering it consistent by perfecting it, and that on a systematic principle, in its domestic and secular branches; and, finally, to show to the public that we aim not at a dead antiquarian revival, but at developing upon the basis of the indigenous architecture of our own country, a style which will be pre-eminently that of our own age, and will

\* From the lists published in the *Mechanics' Magazine* and other journals.



naturally, readily, and with right good-will and heartiness, meet all its requirements, and embrace all its arts, improvements, and inventions."

This is exactly what we want, and have always worked for. There are plenty of strong words for opponents to cavil at: thus plaster is "an accursed thing," and there are many excellent observations for friends to quote. "Anon, anon, sir."

*Essays upon Educational Subjects, read at the Educational Conference of June 1857; with a short Account of the Object and Proceedings of the Meeting.* Edited by ALFRED HILL, Barrister-at-law, one of the Honorary Secretaries. London: Longman and Co. 1857.

THESE are important essays, and although they, doubtless, will not of themselves fairly settle the moot question, already so much discussed, and still as far as ever from a settlement, still there has been much valuable practical information elicited at the Educational Conference, as is testified by the papers now published. The book is divided into six parts. The first contains papers chiefly on the fact of the non-attendance and early removal of children from school in this country; the second, papers on the attendance, &c. at schools on the Continent; the third, papers chiefly on prize and certificate schemes; the fourth, on half-time schemes, and evening and factory schools; and the fifth, papers not falling under the preceding heads. Part sixth is an account of the proceedings at the meetings. Among the authors of the papers are many names well known in connection with educational subjects, including Government school and factory inspectors, and others officially and practically acquainted with the statistics and the routine of schools.

*A Hundred Years ago: an Historical Sketch.* 1755 to 1756. By JAMES HUTTON. London: Longman and Co. 1857.

THIS is an interesting and amusing *olla podrida* collected by a single dip, as it were, into the life-current of the England of the last century. The miscellaneous and more amusing shreds and anecdotes of the latter portion of the volume are preceded by an historical sketch of the political bearings of the time selected for illustration. There is then given some account of the men of the day, and what they were doing; anecdotes of the dark side of society, such as the press-gang, the foot-pads, suicides, &c.; a chapter or two on the frivolous classes, and their frivolities; others on the amusements and pastimes; and these are followed up at the close by a few glimpses of society in general, and its modes of progression and of intercommunication without either steam or rail, electric telegraphs, or universal penny-postages.

This volume affords an excellent example of what may be done in our own more especial province towards the enlightenment and instruction of the present by means of reviews of the past.

## Miscellanea.

**BRIDWELL HOSPITAL FOR THE CITY CASTAL POOR.**—Within these few weeks Bridwell Hospital—at present untenanted, except by officials, and a large portion of its revenues altogether unappropriated, except to an ever-increasing reserve fund—has been prominently brought under the notice of the perplexed guardians of the London City Unions, as a desirable building for the housing of the casual poor, if it could be obtained for such a purpose. By diligent research into the original charter of Edward VI. and subsequent ordinances, this would appear to be only the revival of one of the legitimate purposes of the City Bridewell. A joint committee from the City unions has been appointed to confer with the governors of Bridewell, or the Charity Commissioners, as to its appropriation. Meantime, a memorial on the subject has been submitted to the governors.

**ESSEX-STREET PIER, LONDON.**—A correspondent states that five tenders were received, ranging from 850*l.* to 561*l.*, and that the tender of Mr. J. H. Ball, 650*l.* was accepted.

**BELPER CEMETERY COMPETITION.**—Sir: The Belper Burial Board advertised a short time ago for designs for certain works proposed to be done at their new cemetery, to be sent in on November 6th. According to a circular just issued to the competitors, there were "upwards of 100 designs received, and carefully examined by the Burial Board," and returned to the authors within the short space of four or five days. I send you this information for the benefit of your numerous readers, that such a feat of agility and despatch may not pass unnoticed, but may receive that publicity which it deserves, and which your journal can so well give it.

**PHILOFAIRPLAY.**—Two other competitors complain that their drawings have been returned to them spoilt,—by the packing-paper pasted all over them.

**BEDFORDSHIRE ARCHITECTURAL SOCIETY.**—The tenth annual meeting of this Society was held in the Bedford General Library on the 10th inst. The attendance was larger than usual. On the table were coins and various other objects of interest. After the reading of the usual report, and the election of officers, the Rev. H. J. Williams read a paper entitled, "Notices connected with the History, Architecture, and Antiquities of Glastonbury Abbey;" the Rev. W. Airey by the Rev. J. Taddy on the etymology of the word "Bury;" and Mr. Monkhouse one on "Recent Discoveries at Biddenham." A shaft or well, 37 feet deep, has been found, in a gravel pit. The well was contracted by a most expensive shaft into a diameter of 2 ft. 9 in. and has no marks of abrasure, as if from any use, upon it. The contents will appear from the following quotation from the paper as reported in the *Bedford Times*:—"It may seem strange to us that the Romans should have bestowed so much cost and labour in sinking a shaft 37 ft. deep to receive the remains of one individual; but there is the shaft and there is the skeleton, there are all the paraphernalia of sepulture, the altar, the statue of the deity to whom it was dedicated, and the remains of the victims offered in sacrifice: so we must seek for an explanation of what appears to us so absurd and paradoxical in the character and customs of the Roman people. He then pointed out the points of resemblance between the pit at Biddenham and those at Ewell, Stone, and on Mount Aventine. Mr. Akerman, who was present on its being opened, remarks that this mode of interment was practised by the Romans in Britain, and was calculated to protect the remains of the dead from insult and desecration. The shaft on Mount Aventine, at the very gates of the Imperial City, was 51 ft. deep and about 3 ft. in diameter, and at the bottom was a vault or columbarium, with niches in the side for receiving cinerary urns: the chamber also is stuccoed and painted with the greatest care; so that a clear identity of purpose is shown between these three pits and the one at Biddenham. They were all Roman and all sepulchral.

**STRIKES, &c.**—While thousands are being thrown out of employment from failures and sheer want of work at Glasgow, the journeymen joiners in that city (1428 in number) are out on strike on a question of wages. We are glad to hear, however, that there is a prospect of a compromise with the masters, who have met their men half way by offering 5*d.* an hour, or 0*d.* 4 less than the men contend for. Meantime a committee is arranging as to the relief to be given to the unemployed at Glasgow, and it has been resolved to provide work in return for relief, and to give food rather than money for such work as can be given. At Belfast numbers of skilled tradesmen are walking the streets without employment, and others are proceeding by every steamer to England and Scotland, where their prospects of work at present are by no means encouraging.

**OLD HACKNEY CHURCH TOWER.**—Few who travel along the line of the North London Railway omit to notice the picturesque grey tower of old Hackney Church. It is an object amongst the masses of modern buildings which is not only pleasant to the eye, but gives rise to thoughts of progress and other times. The body of the old church was removed, but persons of taste in the parish determined to save the tower, which stands amongst trees in the churchyard. We heard with regret a short time ago that this venerable remnant of suburban antiquity had fallen so much out of repair, that the police surveyor had condemned it as being dangerous. It appears, however, that the body of the building is sound enough, but that parts require care. A meeting has been held with a view of saving the tower, and the lord of the manor has pledged his word that funds shall be forthcoming for the necessary restoration.

**THE ADELPHI THEATRE.**—Some romantic scenery has been painted by Mr. Pitt and Mr. Brew, for a piece of glamour, called "The Legend of the Headless Man," wherein Mr. B. Webster plays with his usual power. Some of the effects are very well managed.

**DUDLEY DRAINAGE PLANS.**—The plans and specifications for the drainage of Dudley being completed by Mr. William Lee (but not yet carried out), the Board of Health applied for his account up to the present time. The summary is as follows:—

"Self, 312 days, at 6 <i>s.</i> .....	£282 16 0
Assistants, 657 days, at 16 <i>s.</i> .....	526 0 0
Clerks, 1,234½ days, at 8 <i>s.</i> .....	493 18 0
Clerks, 27 days, at 5 <i>s.</i> .....	6 15 0
Cash paid for travelling expenses	83 17 10
Ditto for stationery .....	63 10 7
Ditto for parcels and postage.....	0 13 9

Total.....£2,157 11 2"

The estimated cost of the sewerage is 40,000*l.* The account was referred to a committee of the whole Board.

**THE BELLS AT WESTMINSTER AND ST. PAUL'S.**—It is a curious coincidence that the great bell at St. Paul's appears to have met with a disaster like that which has befallen the modern monster bell at Westminster, before the building was completed. Allan Cunningham, in his *Life of Wren* (Lives of English Architects, Painters, and Sculptors), alluded to it, vol. iv. p. 234, as being one of the charges brought against Wren by the Commissioners of St. Paul's, as a fraud from bad workmanship, to which, with other alleged frauds and abuses, Wren most satisfactorily replied (see pamphlets on this controversy), showing that the authorities had allowed the great bell to be improperly struck with a hammer by the public for a money consideration!—C. C. N.

**FATAL EFFECTS OF IMPURE AIR.**—On a coroner's inquest on a child, at Bedford, according to the local *Times*, it appeared that the room in which the parents and child slept was very small, being only seven feet by six feet, and that the chimney was stopped up, and there was no opening whatever for ventilation. Some of the jurymen who visited the house were unable to stand the fetid atmosphere of the room. The jury returned the following verdict:—Death from convulsions, caused by inhaling impure air in the room in which the deceased slept.

**PRINTING FROM VENEERS.**—A process of veneration by transfer is mentioned with approval in the French journals. The sheet of veneer or inlaying to be copied is to be exposed for a few minutes to the vapour of hydrochloric acid. This novel plate is then laid upon calico or paper, and impressions struck off with a printing-press. Heat is to be applied immediately after the sheet is printed, when a perfect impression of all the marks, figures, and convoluted lines of the veneer is said to be instantaneously produced. The process, it is affirmed, may be repeated for an almost indefinite number of times. The designs thus produced are said all to exhibit a general wood-like tint most natural when oak, walnut, maple, and the light-coloured woods have been employed.

**STEEL.**—Messrs. Galloway, of Manchester, are said to have joined Mr. Bessemer, and are constructing extensive works at Sheffield, for the manufacture of steel, under the provisions of his several patents. Mr. Bessemer has also the works of an eminent manufacturer in Glasgow placed at his disposal, for the purpose of carrying out his improvements,— "which," says the *Mining Journal*, "we are glad to learn, have now proved of practical value. The question of steel-making," it adds, "has now assumed an importance that must arouse the trade to inquiry; Mr. Bessemer being enabled to manufacture plates of any diameter, according to the length and breadth of the rolls employed, and at a reduction of cost calculated eventually at 10*l.* to 8*l.* per ton,—dependent, in fact, on competition, as the best steel can be produced at the same cost as common iron. The whole of the tools used in the extensive works of Messrs. Galloway, Manchester, are manufactured from 'Bessemer steel,' and we believe are examples of excellence."

**FIRE AT WORSLEY-HALL.**—A fire broke out at Worsley-hall, near Manchester, the seat of the earl of Ellesmere, on Friday evening, in last week, and destroyed four servants' bedrooms surrounding the apartment in which it is supposed to have originated. A great amount of damage, however, was caused by the water which was thrown upon the house, and which penetrated through every room from the roof to the entrance-hall. The amount of damage is estimated at 3,000*l.* to 4,000*l.* A view of this mansion, some of our readers may recollect, was given in *The Builder* a few years since.

**WIMBLEDON, SURREY.**—It is arranged, we are told, to erect at this place a village Club-room, with reading and lecture rooms and library. A residence forms one angle of these, and at the opposite extremity, projecting from a large oriel in the reading-room, there is to be a Church-service room. The designs for these buildings are in the hands of Mr. Toulon, who is appointed the architect. The whole will be in brick, varied; the style is rather Early Decorated. There is a distinction in the Church-service room from the other buildings: it has a semi-ecclesiastical character. It is expected that the work will shortly be commenced.

**A SANITARY COMMISSION FOR THE ARMY IN INDIA.**—I have read with much interest your remarks on the important matter of preserving the health of our soldiers in India. Should you have time to look into the late Mr. Buckingham's pamphlet, published by Partridge and Okey, in 1853, entitled "The Coming Era," you would be additionally assured of the great importance of your suggestions.

S. E. M.

\* We are confidently informed that our observations have not been useless, and that the Government is at this moment discussing the necessity of following the course we have urged. We have to add, that the design selected is by Mr. Edward Holmes, of Birmingham.



**T**HE Advertiser, who has had seven years' experience, is desirous of an ENGAGEMENT, with an Architect—Address J. W. 3 Bernard-street, Regent's-park.



# The Builder.

Vol. XV.—No. 773.

**I**N impression, we apprehend, still prevails in the manufacturing districts, that they are not properly appreciated in the metropolis. So far, at least, as the *Builder* is concerned, the idea can have, indeed, no foundation: of the works in our art, which during late years some of the northern towns have produced, the importance has been often recognised, and attention has been recently called to the locality referred to, as to its capabilities for influence in the future. That the impression, however, exists, and that the Lancashire people, in particular, are "touchy" on the subject, we have had many opportunities for observing. Lately, as the world knows, a strong and well-grounded claim has been put forth by Manchester, to be considered as holding that there are pursuits of interest and value, which may not immediately appear connected with the production of "twist" and calicoes, and the amassing of wealth. Not only in art, but in structural and sanitary matters allied to architecture and building, progress has been made; whilst much has been done that would be useful in a comparison between the north and the south, from which the rectification of the course on either side might be effected. Much is to be learned on both sides. Whilst it is essential in a national point of view, and important to the south to cultivate a better acquaintance with the manufacturing districts, it is equally the case that there is much that could be derived with advantage in the other direction. During a sojourn in Manchester, or perhaps more so in the thickly-populated country which surrounds it, a stranger observant and unprejudiced, may discover many things that will excite alternately his surprise, or his admiration.

Fresh from the experiences of London, one most remarkable feature of the district is the comparative ease of life of the "operative classes." In the metropolis, the working man finds every addition to his family a painful tax upon his labour and his endurance, and a sore trial to his ingenuity in the matters of home comfort and provision of suitable employment for his sons and daughters. In some of the Lancashire towns, the case is obviously different. In Ashton-under-Lyne, every member of a family seems to be readily disposed of,—so that it is rather an advantage to have many children, as in the prosperous colonies;—every family may have a house, and the due complement of bed-rooms; each one is well clothed and well fed; and in the majority of cases, the cleanliness and the comfort of the habitations, in spite of an unfavourable atmosphere, and various non-sanitary conditions, is very remarkable. Many of the houses are rented from the millowners—who, it is right to say, have a somewhat higher sense of their duties and interests in relation to those whom they employ, than has commonly been attributed to them—and many are owned by the people themselves. Towards the latter position of affairs, the building societies are said to have efficiently contributed: these societies being, we are told, generally well managed as to the advances, without much professional assistance.

But it is even more worthy of observation, and more gratifying to notice, that the female sex is universally provided for: that great

problem, as we have ourselves regarded it, the employment of women, seems to receive, in one grade of society at least, in these districts, complete solution. Doubtless the market for labour here has led to the neglect of children, and, in some cases, even to their destruction by narcotics. On the other hand it has obviated consequences such as have followed from the condition in London lately, as to the employment, and existing at this time. We ought, perhaps, to quote the evidence of Mr. Schofield, given in the course of the inquiry in November, 1856, before Mr. Ranger, preliminary to the application of the Public Health Act to the township of Dukinfield,\* in which he attributes a "large amount of convulsive disease of a fatal character among children," to "the fact that mothers go early in the morning to the mills, putting their children out to nurse, paying from 2s. 6d. to 4s. per week per child," and adds that the practice is "quite general." But this sad condition of things must be altered by the dissemination of knowledge—not by the interdiction of female employment. It may, indeed, well appear that the girls who are employed in factories, should not be so withdrawn from domestic avocations as to become disqualified for the management of a home; as it has appeared that the removal of children from school at the early age at which their labour can be turned into money, is not desirable. But, penetrated with the impression of the alternative in the deficiency of employment, such as we have alluded to, we must regard that which provides the employment as, on the whole, a favourable condition. The majority of the women who are at work in weaving sheds and factories, have an appearance of health and comeliness which would imply no privations, and no laborious drudgery. There is no corresponding class in London. The class striving for a miserable existence by the needle, is in a worse position than its corresponding class in Lancashire, or than the workers in factories, both in every comfort of life, and every matter of appearance—unless fashion of dress. At some of the factories at Ashton, the employment of a considerable number of married women, having families, becomes indeed matter for regret. To the inquiry,—*"What became of the children?"* it was answered that they were generally left in the care of their *grandmothers*; a reply which itself might be taken as indicating the existence of a better condition of the working classes than usually is found elsewhere. In one of the mills, that of Messrs. Thomas Mason and Sons, which is exceedingly well managed by Mr. Hugh Mason, the employment of mothers of families is, on the other hand, discouraged; whilst exertion is made, by attention to the dwellings, and interest taken in the condition of the workpeople—shown by the donation of publications such as the "British Workman" and the "Cottage Economist"—to contribute to the moral and social welfare. The usual wages of the women, are ten or eleven shillings the week; but some very good hands will receive thirteen shillings: better wages—the cost of a dwelling being considered—we fear, than are to be got by the work of the needle in London.† It must also be considered—taking the general rule—that such wages are those of one member of a family.

Of course there are seasons of depression, when the mills work "*half-time*," and when the earnings of a family may be diminished a pound

a-week. A continuance of such circumstances, and time to spare, usually bring political agitators upon the scene,—some well-meaning, some who are in the right, and some who find in a particular exercise of industry their chief income and most genial occupation. Then the *rights of labour*, and many other troublesome questions, are debated; and, if the commercial stagnation continues, great excitement may ensue, and occasional riot. Short periods of half-time working, it is believed by persons who are familiar with the condition of the people, though not by us, need produce only a deprivation of luxuries, or slight temporary inconvenience; but they are felt by the shopkeepers. The chance of recurrence of these occasions, however, makes it very desirable to inculcate saving habits, and the provision of facilities for small investments. Such a period of depression has recently commenced.

Nevertheless, as we observed, the condition of the Lancashire workpeople is one which contrasts favourably with that of almost every class of artisans in London. In a parliamentary return, just issued, we find some "industrial and pauper statistics of Lancashire Unions," from which we can deduce that, in the area of the Liverpool Union, in which employment in manufactures is small in comparison with that in other industrial occupations, the proportion of paupers to the population is about one-twentieth part of the latter; whilst in Bolton, which may be considered a manufacturing district, the proportion is about a twenty-eighth part; in Bury it is less than a twenty-seventh part; in the unions of Barton-on-Irwell, Chorlton, Salford, Manchester, and Prestwich, added together, it is a thirty-fourth part; and in Ashton it does not amount to even a sixty-second part. The depression which now exists is attributed to the recent scarcity and high price of cotton, and the present dearth of money. But, in a speech by Mr. J. R. Coulthart, late the mayor of the manor of Ashton, lately, he mentioned new factories which had been erected during the last twelve months, viz. Mr. Josiah Harrop's, at Bardsley; Mr. George Taylor's, at Leesfield; Mr. Peter Seville's, at Rhodeshill; Mr. James Adsheds, at Souracre; Messrs. Thomas Nield and Sons', at Coe's Gardens; and Messrs. Thomas Mellor and Sons', at Sharp's Shrubberies. Besides these, there had been, according to returns of the rate-collectors, fourteen new extensions of factories; seventeen new warehouses, workshops, and sheds; one new gas-work, nine new shops, four new villa residences, and 116 new cottages. The marriages had increased in an unusually large ratio, and so had deposits in the savings banks; whilst, although the whole rates had increased to 3s. 1d. in the pound on the assessed property, they were still much below those of other places.

The impression produced by a visit to this locality, and other portions of the manufacturing districts, after an absence of some years, is a very telling one. It is stated in Bradshaw's lately published "Guide to Manchester," that there are within that city, without numbering some buildings in different parts of its suburbs, 96 cotton-mills, 1 worsted-mill, 10 silk-mills, 6 calico-printing works, besides a large number in the outskirts; 16 manufactories of small-ware, 33 dye-works, 11 hat-manufactories, 61 establishments for the construction of machinery, besides 55 foundries, 4 lead-works, 4 paper-works, 52 saw-mills, 12 corn-mills, and 1,214 works or factories designated "miscellaneous." The aggregate power of the steam-engines is said to exceed that of 12,000 horses, and the goods produced are stored in 1,743 warehouses. In the town of Stockport, there are said to be forty-nine mills, usually giving employment to more than 16,000 workpeople. The establishments enumerated as belonging to two of the towns, however, form a small pro-

\* The Report and Appendix (printed by Eyre and Spottiswoode), contain some valuable parts, especially in the "Statement" and Mortuary Returns, by Mr. A. Agland.

† The hours of work are from six o'clock to six o'clock, allowing one and a half hour for meals, and giving up at two o'clock on Saturdays. The legislative enactments provide as to time required for education in the case of children.



portion of those which are attendant upon the staple trade of the district. Oldham, Rochdale, Preston, Wigan, and many other populous places in Lancashire, besides towns in Yorkshire, would have to be taken into account, in statistics; and the importance of that part of the kingdom in any view of national prosperity, or of progress in science, or art, would still be left inadequately expressed. In 1785, the import of American cotton into Liverpool was five bags; in 1787, it was 108 bags; and in 1856, it was 1,714,201 bags. According to Mr. T. Bazley, there are not fewer than three-and-a-half millions of our fellow-subjects, or one-eighth of the population of the United Kingdom, dependent for subsistence upon the cotton manufacture. We thus see the reason of the interest which is taken in the discoveries of Dr. Livingstone: the supply of cotton is the supply of food. It is found profitable to convey the raw material to considerable distances, where labour is comparatively cheap, rather than to convert it into thread and cloth within the chief town: and it is one of the remarkable characteristics of the district, that many of the factories are situated in no close vicinity to railroad stations, and are even placed on steep acclivities, where the difficulty of cartage must be great. Manchester itself seems tending to become more and more a busy place of exchange, and the general capital and mart for the population in the manufacturing towns which surround it. Liverpool is the port of the district. Manchester has now gained the chief characteristics of a metropolis, and truly, in many respects, the management of its municipal affairs contrasts with that which prevails in London, to the disadvantage of the latter. Railroads of course form the veins and pulsation of the district; and, not to mention the Manchester and Liverpool line, many of the achievements, financial and structural, by which the country has reaped the benefit in a new mode of conveyance, date their accomplishment from the requirements of the cotton manufacture. The factories in the district are seen on all sides: their numbers and their dimensions fill the mind with wonder at the immensity of the interests which have accumulated. A visit to the city of Manchester gives a very limited notion of the circumstances which we refer to. Looking out from some of the railways, or lines of road, the factories, with their lofty chimneys, seem to absorb the field of view; and the stranger hardly detects the houses required for the large number of workpeople that have to be accommodated. This effect results as well from the smallness of the houses as from the dimensions of the factories. The former are built with better regard for the occupation of a family than are the houses of London,—where, from very different reasons, it is difficult at first to see where the poor or the industrious classes live. The effect referred to is, perhaps, most remarkable at Stockport,—or along the branch of the Manchester, Sheffield, and Lincolnshire Railway, that connects Ashton, Dukinfield, and Guide Bridge,—especially in the dusk of evening, or at the time when the thousands of windows are brilliant with light. Factories, however, are seen not only about the towns, but amidst the hills and vales of Saddleworth, Longendale, and Glossop,—amidst scenery as enchanting and grand as any in England; along the line of the East Lancashire Railway; and, indeed, in every direction far and wide. In the towns, where brick is used, it cannot be said that the proportions and character of the buildings are what they might be. Professional architects do not seem to be usually employed; and the general uniformity of the many stories and numerous window openings, and the common absence of all cornice, or other decoration, are unfavourable to the effect. We do not think this character is rendered necessary, even by the requirements of uniformity in the iron-founder's work, or ample area of window opening. In stone districts the effect is better; but, probably, chiefly so, from that association with natural scenery which has heretofore been a subject of inquiry in these pages. The districts to which we have referred, about the junction of the counties of Lancashire, Yorkshire, Cheshire, and Derbyshire, are of this description, as are also the most beautiful localities on the other side of Manchester, which we have also alluded to. In such cases, the factory—having sometimes an adjacent residence—combines with the scenery to make a pleasing picture. And in other cases, some attention to the grouping in plan, and to the prominence of the angles and the entrance-way, shows what might be realised with the aid of art.

The chimney-shafts form a branch of practical architecture in which our Lancashire friends excel. However these erections may have become vulgarized, in the perception of many persons, from their number, and the delinquent and opaque mass which some of them emit, they are in numerous instances beautiful objects,—not less so than the Egyptian obelisk. They are usually octagonal in plan, rising directly from the ground with rapidly-diminishing sides, and are terminated by a neck-moulding and cornice; and what is required in them for the due effect, is a somewhat better character about the base, and careful proportion in the details at the summit. The construction and the materials are generally, as they are required to be, of the first order.

As regards the dimensions of mills, and the quantity of machinery they contain, the facts are marvellous. Take that of Mr. Wood, at Glossop,—a connected series of buildings, extended from time to time, which must now reach to a length equal to that of Waterloo-bridge. A further addition is being made to it. Amongst the machinery are 2,584 looms; and the engine power is that of 528 horses. Referring to Glossop, the cleanliness of the town, with the well-built and tidy appearance of the houses of the workpeople, again form matter for remark, accustomed as we are to notice the dwellings of a very different character in other parts of the kingdom, where houses are built by grasping speculators, or are rented of middlemen landlords. Stone is the general material. At Mottram, in Longendale, a similar character, though in a somewhat less degree, prevails. The church here, which is of late date, was partly restored a short time since, under the direction of the late John E. Grogan, of Manchester. From the lofty eminence on which the building stands, the view is of surpassing beauty.\* Not far off is the Dinting Viaduct of the Sheffield line. The effects produced by the proportions of its stone piers, and the shadows which they cast across the vale, when the sun is low down, are worth seeing. The superstructure is of timber, with arches of bent plank, in thicknesses. All along the same line, the scenery is of wild and beautiful character; and at Broadbottom, in Cheshire, from the viaduct where the recent accident happened, the view of the vale, far beneath, is remarkable. But, perhaps the most interesting scenery is found beyond Mossley in Saddleworth, where the road passes at a great elevation, and discloses at frequent distances new prospects of hills and long-extending valleys, from which, with all the beauty of nature, the industrial element, is never absent. The picturesque features of the locality, however, are little known, even in Manchester.

In the more populous parts of the manufacturing district, which rank as towns, there is a sad obstacle to the effect of all architectural or natural beauty. The smoke- nuisance prevails to an extent which must be beyond the conception of any inhabitant of London. It seems to be due not to mere number of houses, as with us, and not even to the factory chimneys; for, much attention seems to be now given to the prevention of excessive smoke from these last. It is due, apparently, to some distinguishing character of the area about Manchester, in the atmospheric conditions—which seem to operate in beating down and intensifying whatever element of nuisance may exist. The causes of the quantity of rain in the district may have some relation to it. A paper by Dr. Angus Smith, in the "Memoirs of the Literary and Philosophical Society of

Manchester," would, we believe, be found, giving information on the subject. It is said everywhere, as a subject of congratulation, that the smokiness of the town is greatly diminished; the corporation have at least the power to interfere, and have, perhaps, used it to some effect. Looking at the majority of the chimneys, opaque smoke—whatever other noxious exhalation there may be—is certainly not observable generally and for long periods: yet the atmosphere itself seems offensive as ever,—charged with "blacks," and beclouding to the vision to all architectural beauty. The basins on the Infirmary area are covered with a thick scum of soot, far worse than we have ever seen in Trafalgar-square. The particles of cotton which are floating in the air are also a source of annoyance. At many of the principal factories, mechanical contrivances to assist the consumption of the smoke, have fallen into disuse; and, beyond the now well-known construction of the first-place, and the provision of air-holes about the furnace-door, and of a chamber within the latter, to allow the air to be warmed before admission, dependence is placed only upon the manner of feeding with coal, and upon the provision of boilers of ample number, and steam-productiveness. An attentive fireman need make very little smoke. The two-flued boiler is in general use: but to this form it has lately been objected, that, from the flues being low down, the resistance to the expansion is unequal over the area of the ends; and other inconveniences tending to danger are discovered. The smokiness, however, remains the blot on the face of Manchester. The exertion of all her energy in practical science, should be brought to investigate the true causes and means of prevention of what must for the present, render the appearance of the city distasteful in the eyes of strangers, and quite negative the merit of many of her best works in architectural art.

One subject which has still to be attended to in the district, is that of ventilation of the factories. Mr. R. Wood, in the course of the inquiry at Dukinfield, already adverted to, stated that he "knows of no mill ventilated at all. There are windows; they are made to open, but are kept closed. There are no means taken to change the air of these rooms. The temperature is often over 90 degrees." The results from such circumstances must of course tend to ill-health in the work-people, and adversely to the favourable conditions which we have remarked upon. Much might be effected simply by providing ventilation to the gas-burners, which are, as now arranged, really the chief occasion of injury. In most of the public rooms in Manchester, indeed, this point is particularly attended to: no similar care is taken in places of resort in the metropolis. Mr. Ranger well remarks on the necessity of "attention to the fact, that it is not sufficient that persons be aware of the causes which tend to impair vitality; but that individuals having authority over others, should be impressed with a knowledge of the fact, that by their care or negligence, the sanitary condition of those under them may be improved or injured;" whilst, however, the neglect or attention to the admission and change of air, in the case of our dwelling-houses, "is generally attributable to ourselves alone," in manufactures the case is very different; "in these, both temperature and atmosphere are under the control of the overseer, not the workmen, and the latter must be content to inhale the air, however vitiated it may be, which the former admits for his breathing." As to most of the houses in Dukinfield,—a place which, we fear, must be taken as an example of what occurs elsewhere,—he states that most of the windows he has seen "are sufficiently large, but those of the ground-floor are, as a general rule, not even made to open, whilst those to the sleeping-rooms, though they seem made to open," he has found "universally closed." "In street after street, and court after court," he has "looked in vain for an open window." We can testify to the correctness of this representation, if applied to the dwellings of the upper classes, where the now general use of gas—and unventilated,—and the practice of keeping up excessive heat of rooms by large fires, tend to the injury of the health of the inhabitants. The condition of public places and private houses

\* In the churchyard are some curious epitaphs. One of them records of a certain Joseph Cash, that

"He was much respected  
While here on earth he drew his breath,  
And greatly lamented  
Both before and after death;"  
and another is said to exist, commemorating the virtues of one who grew fine onions.



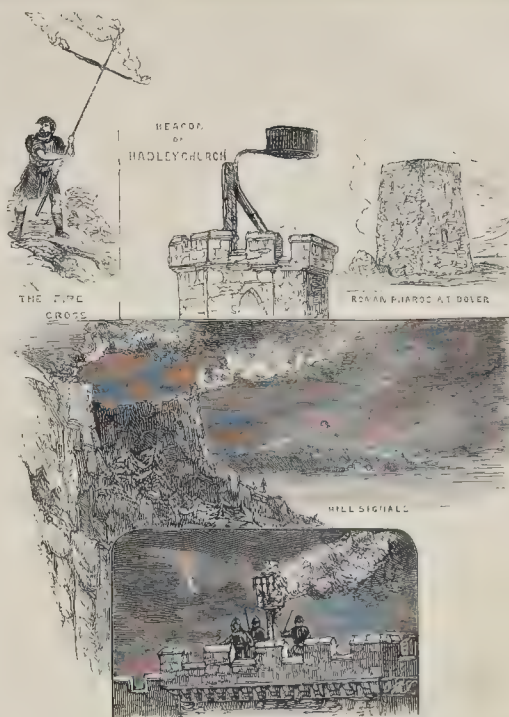
which prevails in London in this respect, is in Manchester reversed. The difficulty of combining the mechanical contrivances for conduction, with ornamental character, has not been overcome in all cases; but in many cases in Manchester, the lighting, by rose lights in the ceiling, is managed with considerable skill, and we should think with economy, and becomes an important aid to the effect of interiors.

The large lamp-pillars at the principal open spaces and crossings in the city, are anything but favourable specimens of the taste of the district. We may mention one at the end of Mosley-street, near the Infirmary. There is still existent, a very curious propensity to select the ugly form, where two patterns of opposite characters are offered. The point deserves a little investigation from "deep thinkers," metaphysicians, and psychologists. In a certain district, where two specimen patterns, costing each the same sum, were sent for selection—one being of rather superior character,—the preference for the general order was given to the lamp-post of the unsightly form.

Let it not be supposed,—it surely will not by any of our ordinary readers,—that a regard in every district for the tasteful appearance of the prominent objects, is unimportant. Every work of art—every beautiful thing in nature—goes to elevate the character of the people,—to render them happier and better, and more worthy members of the social fabric. We care not now to mark the incidence and course, and give the *rationale* of the influence: we have before this, attempted to do so, and are prepared, on some other occasion, to offer reasons why the beautiful must ever tend to higher benefit than mere temporary emotion. Claiming none of the extraordinary results hoped for from the particular works which formed the Exhibition of Art-Treasures—results on a class lowest in the intellectual scale—we yet believe that the subject is worth pursuing, especially by the employers of labour and the educated residents of the manufacturing districts. People are not aware of the development which is necessary to the simple use of the organs of sight: men do not necessarily see everything that is before them. We are here leaving the intellectual aspect of the question mainly out of consideration. Healthful occupation for the eye and mind, however, must be provided. How great is the sum of this which even yet has to be furnished in many localities in the districts under notice! The new supply required has not kept pace with the deterioration that has been going on, in the absorption and extinguishment of nature's beauty,—by the growth of building-area, and the accumulation of soot and suffusion of smoke. To all these points, then, let attention be given. Oh! men of Lancashire! for the same reasons that you provide the intellectual food by cheap literature, and your noble deeds in the establishment of free libraries,—albeit for a class by whom you expect not to be appreciated the higher flights of poetry or reasonings of philosophy,—recognise the fact that the aliment requires equally to be supplied,—though in several forms, for different powers of digestion: but, go on providing it largely amid any discouragement, and sedulously remove every obstacle to the perception or use of what is offered. The cultivation of such latent powers—the spread of such education—the provision of such beautiful objects—will render the relations of employers and employed, easy and pleasurable ones, and make impossible those social outbreaks which, from time to time, occur, and produce terror and alarm. Such provisions will do something towards extinguishing the vice of drunkenness, still too obviously prevalent in Lancashire, and which is the result, we believe, chiefly of the vacuum in the mind, that intellectual food and harmless pleasurable excitement could fill. Says Cowley:—

"Ah! wretched and too solitary he  
Who loves not his own company!  
He'll feel the weight of it, many a day,  
Unless he call in sin, or vanity,  
To help to bear 't away."

Let it be understood that we are throughout referring, not to Manchester merely, but to the manufacturing districts of England. In Manchester what has now been done, calls for warmest commendation; but more is needed—at



THE HERALDS OF THE ELECTRIC TELEGRAPH.

least in the adjacent districts. The use of the wealth realised by employers of labour, it is on every ground to be hoped, is such as will advance the general intellectual and moral standard, and the condition of those about them. And it is equally to be hoped that the operative class are mindful of the singular advantages they possess.

Considering the known facts in the prosperity which mainly there has been during sixty or seventy years, we have been anxious to learn how the duties referred to had been performed. After a tea-party of the Ashton and Dukinfield Mechanics' Institution, on the 5th of November, at the Town-hall, the Mayor in the chair, and when prizes were distributed, complaint was made, that though the support to the institution had largely increased amongst the working classes, many of the employers had withdrawn their countenance from it.

Portions of the gains are spent in the erection of large residences, in costly entertainments, and in sumptuous furniture: often the wealth goes on expanding and accumulating in the erection of new factories, or further extensions. One wealthy person, in pure want of objects, left his money—amounting to more than a quarter of a million—towards the payment of the national debt. Many of the number, however, are munificent patrons of art, or assiduous supporters of educational and benevolent movements. One cotton-spinner, indeed, the employer of a large number of workpeople, and who is just now building for himself a house which, we suppose, from a distant view of it, may cost such a sum as 10,000*l.* was lately heard to complain that his son was getting too much education at the superior school at which he had been placed; and that he must remove him before he, the son, had acquired tastes of a literary, or otherwise objectionable character. So that the very requirements which are the safeguard of many a man from debasing courses are, according to this authority, to be shunned and tabooed. But these are exceptional cases: they are matters of history and anecdote, handed about in all good humour, and laid to the door of one or other of

the towns in the neighbourhood of Manchester against which the jest may happen to tell the most. In no part of the country has the influence of the female character and society been more apparent in a beneficial direction. In Manchester certainly it has done much to remove many of the habits current in society—which were possibly not seen and admitted by residents, but were once noticeable by strangers.

Much, however, remains to be effected in extension of the course, in relation to art, sanitary science, and education, on which Manchester has entered: the people of the town may be warmly congratulated on the possession of institutions which we have not, and might be proud of, in London, and on the disposition which there is to forward every object of educational and social advancement. Can we be wrong in expecting further results from the progress which is commenced?

#### THE HERALDS OF THE ELECTRIC TELEGRAPH.

OLD "POSTS," ROADS, SIGNALS, AND NEWS.

Now that a letter of goodly size can be conveyed from "Land's-end" to "John O'Groat's" with extraordinary swiftness, and at the cost of only one penny, we can scarcely understand how the people of former days managed to get forward with the imperfect conveyances which they could then command.

From the most ancient times the rapid conveyance of intelligence seems to have been an important consideration. In the sacred writings we find the expression "swift as a post" used, to give an idea of great rapidity: slow, however, in comparison with the present were those posts, and it is curious to reflect that centuries passed over—notwithstanding the evident wish for improvement—without any material difference in the method of conveying information to and from places at a distance. For many ages the swift postman preceded on foot or on horseback, and express indeed must have been the business which caused the risk of crossing the roadless tracks.

In the days of Joseph, we find that Jacob, his father, heard truly that there was corn in Egypt, and sent the brethren in search of it to a considerable dis-



tance. The joyful news of corn must have passed orally from neighbourhood to neighbourhood until it reached the ears of the patriarch. It seems tolerably certain that, in arranging the late outbreak in India, a cake was used as the medium of communication. In the civilized nations of ancient times a somewhat similar method of conveying news was no doubt practised. In some instances "the post" carried his message rudely cut on stones. At other times the letter was written on some firmer material, and at others the communication was verbally given to a messenger, he being entrusted at the same time with a seal, ring, or other object which might be recognized by the parties. In the Roman times letter-writing became somewhat common, and that great people, by their road-making and improvements in navigation, set the world a good example by opening a comparatively ready means of communication between nations. To pass to more recent times, the messengers of kings and nobles began to be considered sacred and important personages, and, sheltered by their office, they were free to pass through hostile armies and troubled lands.

The necessity for the privileges of accredited heralds is evident when we consider even the state of this country thirteen or fourteen hundred years ago, when the land of England was divided into numerous kingdoms, which from time to time were fiercely arrayed against each other.

The making of roads and the facilitating of transit were the chief means of stopping these sanguinary contests. In like manner the progress of civilization rather than weapons of warfare effected the union of Wales, Scotland, and Ireland.

The Pharos at Dover, although showing alterations made at various periods, still retains such distinctive evidence of its original features that we may consider it the most ancient architectural signal existing in England. In other places along the coast (Tynemouth, for instance) there were in all probability similar warnings to mariners raised; but these seem to have disappeared. After the departure of the Romans, fortresses and castles increased in number, and formed centres to which the forces of a district might be collected by the feudal superiors, and this was effected by means of various signals. In times of peace the friendly beacons blazed upon the battlements to show where the retainers and wanderers might find shelter. Sir Walter Scott, in "Peveril of the Peak," refers to this custom, and mentions that on the death of the baron the light was put out until after his funeral: a varied fire would call the neighbourhood to arms. In some cases a cross painted red by day, or one of fire by night, was speedily borne through the district as a signal for rising, and in other instances the red cross was fixed in the market-places for a similar purpose. Many rare pictures must have occurred in those old times when the fiery cross reached the towns and villages, and the strong men swiftly armed, and departed from the groups of the aged, women, and children.

In addition to the castle signals of the olden time, there were those which hospitaliers displayed from the churches and religious establishments. In Durham Cathedral the sanctuary knocker at the chief entrance is curiously shaped, and has evidently been intended for the collection of lights. The effect of this grim face, with glimmering rays from eyes and mouth at night-time, must have been very hideous, though reassuring to the culprit. A cast of this curious relic may be seen in the Architectural Museum, at Brompton.

In places along the coast, in the most unsheltered spots, religious men established themselves in rude hermitages, having for a chief object the succour of the shipwrecked.

St. Cuthbert, centuries ago, placed himself on the island of Lindisfarne, and afterwards removed to the more solitary Farne Island. Wandering in these and similar places, it is not difficult to picture the monks, by some primitive beacon-lights, on the steep cliffs overlooking the raging storm. In many instances the hermit's cell gave place to a building, which often, when blazing with light at Christmas time and other festivals, offered a welcome sight to weary sailors.

We ought perhaps to have noticed the mountain signals of the most ancient. This description of beacon-light has been a favourite subject for the poets, and dire misadventure has been the confusion when these had ingress of grief and death were excited upon the hills. Cany bell sing,  
"Why flames you far summit?  
Why shut to the east  
Those embers like stars  
To the firmament cast?"

Sir Walter Scott's gathering of the clans is too familiar to readers to require repetition.

In addition to these means of communication, as trade, roads, and civilization increased, the merchants and chapmen who visited the fairs, which began to be held in all parts of the country, added to the means of spreading information; and many a message of

varied import has been borne by these missionaries of progress.

In addition to these, the wandering minstrels did good service by their rounds of visits—by making distant people acquainted, and drawing them mentally closer together.

In ancient times the state of the roads prevented any other means of conveyance for merchandise than mules and pack-horses; however, as roads improved, rule wagons and other carriages came gradually into use, and something like a regular traffic began to be formed. It is curious now to glance back to those days when a journey of from twelve to fifteen miles was a matter not to be undertaken with impunity. As time passed on, the holding of the Court and assembling of Parliament in different cities did much to improve the highways. These movements of royalty were important affairs, the long cavalcades of horse and foot-men, presenting the appearance of a considerable army. In old manuscripts, the particulars given of the extensive provisions required for the feeding of those large bodies contrast curiously with the simple arrangements required by her Majesty during her progress from London to the Highlands of Scotland. The barons and the dignitaries of the church also moved from their districts with long trains of followers; and in course of time the majority of English people would begin to know that such places as Newcastle, York, and Canterbury existed. Then swift posts, some on foot and others on horseback, became more common, and the friendly missives of that time were endorsed with instructions to the messengers to "run, run; for your lives run."

Stage-wagons began to be familiar objects on the roads, and suggested the stage-coach the next step towards the rapid locomotive post. Stowe says, "that the first stage-coach started from London from the Cook Inn, situated not far from Westminster Abbey." These stage-coaches, which were, no doubt, the wonder and pride of that age, were lumbering and unwieldy conveyances; and they improved but very slowly from the time of Stowe to the beginning of the reign of George III. We have just now before us a print of one of these old mails, which present as great a contrast with the famous coaches which were once on the Dover and other roads, as does George Stephenson's first locomotive with the compact engines now in use. Of the old-fashioned stage-coaches, the "basket," a wicker-work projection, behind, which afforded accommodation to about half a dozen persons, was an important feature. Each improvement in the roads and the vehicles united the people of the various parts of the nation more closely together. Canals and increased strength of our shipping also tended to promote more frequent and rapid communication, the rate of speedy travelling on the canals being about as great as that which could have been achieved during the royal progress above alluded to.

In the improvements of more recent times it is impossible to over-estimate the services of the Mac Adams, under whose skilful management the public roads were greatly improved: our royal mails began to be enabled to keep up a rate of ten miles an hour throughout the chief districts of England, and every one wondered at the "swiftness of the post." While this extraordinary progress was going forward, a system of communication, by telegraphs and other signal-givers, had come into use: we even convey news around the coast, from the North to the Admiralty, quick as sight; but the particulars of this introduction, the formation of the system of the Post-office, and some other advances, may afford matter for another paper.

## ART IN ARCHITECTURE.

(A DIALOGUE.)

*Dramatis Personæ.*

*Aristides*..... A distinguished Professor.  
*Timmins*..... An Amateur.  
*Rufskinius*... A great Critic.  
*Donaldo*..... Another Professor.  
*Scotinius*... A successful Gothicist.  
*Gothblomus*.. A Disciple of Rufskinius.  
*Acknowledges*.. An Engineer.

"If by correctness be meant the conforming to rules purely arbitrary, correctness may be another name for dullness and stupidity."—*Macready.*

*Aristides*.—If you had said a correct taste and judgment are necessary for the perfect realization of beauty by the architect, I could not have dissented; but to require a young architect to be possessed of a perfect taste before he begins to design, is simply absurd. He must first make himself acquainted with the principles of art; and by practice learn to appreciate them. No one who has not exercised thought himself can feel the merit of originality, for he knows not how difficult it is to produce, and if he takes his taste at second-hand his mind will become a dead flat. He may be taught taste to serve the fashion of the

hour, but perfect taste only comes by years of experience and practice.

*Timmins*.—What you advance in explanation of the difficulty of acquiring a correct taste, seems certainly at first sight to have much truth in it; but permit me to call your attention to the fact that a person may possess correct taste, and not be capable of inventing any combinations of beauty.

*Aristides*.—True; a person of some taste may not be capable of putting on paper a single new idea, or even of conceiving an originality in imagination; but that is a merely negative taste. To acquire a positive taste, which is the one the architect requires, it is not sufficient for him to compare examples; he must practise design. A knowledge sufficient for a small critic may be obtained by comparing examples; but the creative power must have repeated trials before it can summon up consistent images. To put together those images requires judgment; and the process of forming a taste before practising design is more likely to bias the judgment than correct it; for becoming prepossessed in favour of some peculiarity, he will insensibly draw his images from that source, and become, if not a copyist, yet certainly not an original thinker.

*Timmins*.—Then am I to understand that you do not consider it impossible, but inexpedient, to give an architect correctness of taste, before allowing him to design, by reason of the length of time it would take him to acquire it?

*Aristides*. Certainly not. He can only have his taste improved, but between improvement and correctness there is a wide margin. It takes a lifetime of practice to acquire a correct taste; and though by mere study and comparison he may approach nearer to correctness, he will never arrive at it till he has practised design. He will then gradually possess himself of such an intimate knowledge of the relation of parts to the general effect, as only trial and experiment can give. While he is exercising his imagination and invention, he will be improving in manipulative dexterity. There are also so many points to be considered in architecture, especially connected with utility and construction, all of which are necessary for the formation of correct taste, that it is impossible to arrive at it in tolerable perfection without going through a process of design.

*Timmins*.—I fear you have as yet the best of the argument; but you are a professional man,—I am only an amateur. Are you, however, quite sure that prejudice against the would-be critics has not some connection with your opinions? And, on second thought, I almost think you misunderstood my meaning when I said an architect should first be possessed of correct taste; for I only intended that he should be taught from what source it would be best for him to draw his ideas; whether from the pure Greek, the Gothic, or the Italian; or should the rules of correct taste allow him to choose from any style, to know what examples he should try to imitate, or what forms are the most beautiful.

*Rufskinius*.—Italian Gothic is the style that should be chosen for a groundwork; none other is so fitted for sculptural treatment.

*Donaldo*.—Nay; Greek art is the most perfect; the mind should first be imbued with a love of the most perfect of styles.

*Scotinius*.—I disagree with both of you. Fourteenth-century Gothic should be chosen as the *point de départ*. Revive Classic art,—what will be the effect? A resurrection of the dry bones of antiquity, without one spark of vitality. Gothic art is the only one that reflects, even at this day, the living sentiments of the homely English mind.

*Aristides*.—Not so fast, gentlemen; not so fast. What you propose to do is to prejudice the mind in favour of that style of art which best reflects the predominant sentiments or idiosyncrasies of your own brains. (Warning.) Of professional prejudices, I think I have as little as most men. Criticism often is not taste, but the art of finding fault. It is an easy thing to say, "I don't like this picture, or I prefer that; but before a man can become an 'authority,' he must be initiated into the mysteries of composition, and must have a practical acquaintance with the difficulties which have to be surmounted. It is quite possible for a person so to cultivate his perception of the beautiful by comparison and analysis, as to be capable of selecting the good from the bad in general effect; but in matters of detail he will be ignorant, and be liable to fall into the reticent errors, which a few months' practice with the pencil would have served to show the fallacy of. Far be it from me to deprecate the utility of even amateur criticism. There are often suggestions thrown out which are of great value to practical men, and serve to keep them in the right track, for being more free from technical prejudices than we are, they can often look at the subject through a less contracted medium. That is the province of amateur criticism, but no one would be guilty of trying to make a critic in order to make



a painter, for he would be as far off being a painter after attaining to critical knowledge, as he was before he began. (Dismustically.) No, depend upon it, you only prejudice the mind when you attempt to make a man of taste before you allow the young mind to exercise its own invention.

*Archimedes*.—Sir, taste is all stuff: what we want is, good, cheap, utilitarian architecture, and good work, both of which are, I am ashamed to say, now very scarce.

*Gambertum* (sternly).—Sir, we want *politeness* in architecture as well as in speech. I would recommend you to read my treatise on the principles of design in architecture, and give up all your five-per-cent. notions.

*Aristides* (abstractedly).—Politeness! Yes, true; but it is rather an affected phrase: what a pity it is there is so much of the advertising spirit shown in architectural criticisms.

*Donaldo*.—It is certainly very amusing when one thinks of the number of books which have been written to set up a standard of taste, for all to measure by. Even Hogarth was foolish enough to write a book, the professed object of which was to enable everybody to agree in matters of taste. I think we are quite as far from agreeing now as ever we were; and I hope, *Aristides*, that you are not going to fall into Hogarth's error, by attempting to point out how we may agree.

*Aristides*.—Certainly not! nor yet Burke's, whose great fault lay in not defining the meaning of the term beauty; for he evidently thought only of one kind, when he said that smoothness and smallness were essential to it. That is a specimen of the vagaries people are led into when they study art in theory only. Read "Oersted's Soul in Nature," and there you will get so out of your depth in considering the origin of beauty, that it will be a miracle if your tastes are not swamped for ever.

*Timmins*.—Let us return to our first topic: what has led you to form so strong an opinion against cultivating and training a pupil's taste, before permitting him to design?

*Aristides*.—Who is to judge for you? who is to show him what is correct taste, and what is incorrect taste? It is in a great measure an arbitrary distinction. As many a sceptic says, it is what I prefer, not what you prefer. All that can be done is to put what are universally considered to be good examples of the various styles before him: let him copy them, and when he has made himself acquainted with their various characters and lines of expression, let him design in each style: he will then, if he possess the proper genius, discover the key-note of each style; or else he will, from the prevailing sentiment of his mind, take a partiality for one style above the others: let him practise that style; it is better that he should design well in one style than badly in all! But above all things impress upon his mind the necessity of thinking for himself, and not copying all the minute peculiarities of the style he adopts, with the fervour of an archaeologist, a method too much in vogue at the present time. He should be taught to feel that art is a living essence, not a dead reality.

*Timmins*.—Then you are of opinion that the possession of correct taste is not incompatible with a wide divergence of opinion and preferences?

*Aristides*.—You express my views exactly: and to illustrate my meaning, there are now present several of my distinguished friends, each able in the walk of art he has sketched out for himself. It would certainly become me to say Ru'skinus is a man of correct taste, therefore Donaldo is not, or vice versa. No, gentlemen, you are all men of taste. Though you may differ in opinion as to the style best fitted for our adoption, or even in the character of the beauty you each worship.

*Timmins*.—You are of opinion then that a design is in good taste if the style chosen is fitted for the purpose, and the several parts unite in a consistent manner, forming a pleasing ensemble; or otherwise, as you express it, if the key-note of the style has been struck?

*Aristides*.—Yes. That is the usual meaning; and totally irrespective of originality, which, at the same time, should be our aim. "Correct taste," has, after all, been a very insipid young lady, and twin sister to Purity, the fear of whose rebuke has deprived of energy many an ardent mind, which, with proper exercise, would have developed much freshness of thought. We must, for the future, try and brush a little of their prudery out of these young ladies; indeed, I see signs of improvement already, for our young gentlemen, neglecting to pay them the attention they have hitherto demanded, they will, to prevent themselves being forsaken, become more moderate in their demands.

*Timmins*.—My mind begins to open as to the meaning you attach to the phrase "correct taste." Your object is to show that there are no men of taste out of the profession: but that the aims of art have

been cramped up in the very narrow enclosure representing the domain of correct taste.

*Aristides*.—Exactly, sir. It is not necessary that there should be invention, imagination, or sentiment displayed, to satisfy those self-constituted judges of art: in truth, the less thought bestowed on the design, provided it harmonizes with its adjuncts, the more correct the taste. The better the details of the style are preserved in their original integrity, even to the adoption of a complete order, the more pleased they are, and will exclaim, "How pure!" forgetting that a style is dependent for its vivifying element upon the introduction of fresh matter and fresh thought. Therefore I hold, in opposition to all purists, that if the various parts of a design are well adapted to their purpose, and there is a freshness of thought displayed in the details, with due prominence given to the main features of the edifice, those features not being merely ornamental appendages, but real and required, and if the whole details of the design fall together in an harmonious ensemble, every part having been conceived in relation to its fellows, and to the general effect; and lastly, if due regard has been given to proportion, not only of linear dimension, but of light and shade, of mass, of plain surface compared to that which is ornamented, of openings to wall surface, and of strength compared to the weight to be supported; that design, even if no style has been strictly adhered to,—or even if there have been importations from another style,—that design, I say, will be in correct taste.

*Timmins*.—It seems to me now, that so far from the mixture of styles creating impurity, it is the only way of developing a new one.

*Aristides*.—Your suggestion is very correct; the leading styles of art have resulted from the fusion of opposite elements; it is only when the combination has been sudden, that what are called impure styles have been produced; and these, from the quaintness with which the combinations are clothed, and the great latitude allowable in them, are eminently suited for picturesque architecture, such as the Elizabethan. Of course the purists despise such styles, though I think, with little reason, for each has its beauties, which may be much more appropriate in some situations than those of any other style.

*Timmins*.—Each style expresses some sentiment, then?

*Aristides*.—Still more correct; and it is of the greatest importance that the style which best expresses the sentiment most appropriate to the place and purpose, should be the one selected for an intended edifice. Of course each style will express, in greater or less degree, most of the sentiment common to the mind of man; but that which expresses it best should be the one chosen. As to this or that style not being adaptable to modern purposes, it is a mere fear; every style in proper hands is capable of doing that.

*Timmins*.—Then you think that the claim put forward by the advocates for the employment of only one style universally, is not in the best taste?

*All*.—Come, *Aristides*, enlighten our darkness on that point: we wish you to give your reasons, *pro* and *con*.

*Aristides*.—As I have written a paper explaining my views of the subject, I think I cannot do better than read it. So, with your kind permission, gentlemen, I will now begin, pausing between each division of my paper to hear your comments.\*

#### CONSTRUCTION OF PICTURE GALLERIES. LECTURES AT THE BROMPTON MUSEUM.

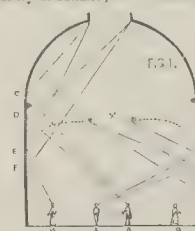
The second of the introductory course of lectures now in progress of delivery at the Brompton Museum, was delivered on Monday evening, the 23rd instant, by Mr. R. Redgrave, R.A. and was "On the Gift of the Sheepshanks Collection," with a view to the formation of a National Gallery of British Art. Pointing out how recently it was that a National Gallery of pictures had been provided in this country for the instruction and gratification of the people generally, the lecturer traced the rise of the English school, and then reviewed, pleasantly, some of the principal pictures in the Sheepshanks Collection. He urged that these works, which appealed to the affections and home feelings of the people, were more likely to touch their minds than the works of the old masters. After a warm eulogium of our great artist Turner, and urging the desirability of making a national collection of works in water colours, the lecturer proceeded to speak of the construction of picture galleries, and this portion of the lecture we give in our own words:—

It is well known that the varnished surface of an oil picture forms a sort of imperfect mirror, and unless the light is arranged with proper reference to the position of the spectator in viewing the picture,

he is prevented seeing the painting by an unpleasant glitter formed by the imperfect reflection of the source of light upon its surface, as the window or the gas-jet, for instance. This would be made quite clear to any one who, standing before a picture where this glitter obtrudes itself, would take down the work and substitute a true mirror in its stead, when he would at once see a perfect reflection of the window or other source of light. Now, the first question to be considered is, how to place the source of light so that the spectator when at a convenient point for viewing the picture is not annoyed with this imperfect reflection on its surface; and when a gallery is to be built for the reception of works of art, this should be one of the paramount considerations. This would appear to be an abstruse question, since we so seldom see a thoroughly well-lighted gallery; it is, however, by no means the case: the laws of vision are absolute, and are clearly defined, and the exact places where all these reflections will be troublesome can as easily be laid down by lines, as the plans and dimensions of the galleries themselves.

But there is another condition to which it is necessary to refer in galleries which, like the Sheepshanks Gallery, are lighted from the top (the most usual method, from the much greater hanging space obtained). One of the first requisites is sufficiency of light, but as the simplest way to remedy the evil of reflection is to diminish the size of the opening for the admission of light, and raise the roof, this expedient is often resorted to (the more that it accords well with the grandiose views of the architect). It thus happens that in shutting one evil we fall into another; by raising the roof, it is true that the place of the reflection is raised above the usual hanging line of the pictures, but, alas! they are as in a wall where but few rays of light can penetrate. I will illustrate this by reference to one of the most celebrated galleries of modern Europe, which I have lately carefully studied.

Fig. 1 gives you the section of Baron Klenze's famous gallery at Munich, the Pinacothek (you will



find the lines in his evidence in the Report on Fine Arts, in 1836). Now if a spectator stands in the middle of the gallery of A so as to see the upper pictures, the window light would be reflected, if the wall were a polished surface, between C and D: if he removes to B to see the lower pictures nearer the eye, the reflection would be found between E and F, but still above the pictures which are within his line of vision; if, however, the skylight were lowered to half the height, as at X, the reflections, when the spectator is at A or B respectively, would be lowered to within the lines G and H, I and J respectively, and would become troublesome to the spectator.

Now, on examining this gallery, I made a note of the extreme want of light to see the pictures. In the room containing those of the Early Flemish school (a school of extreme finish, and which is first entered), it was impossible to see the works at all; when the sun was shining, it was necessary to draw the blinds to prevent the admission of its direct rays, and the advantage of a bright day was lost; and, on a cloudy day, the light was wholly insufficient. Yet Murray, who somehow or other is a great authority with travellers, says that Klenze, "in addition to the praise of having constructed a beautiful edifice, deserves also that of having formed the most convenient and appropriate receptacle for paintings in Europe." On my return, I examined the proportion of light in the Sheepshanks Gallery in relation to the rooms of the Pinacothek, and found them as follows:—namely, the proportion of the opening for light in the Pinacothek to the square surface of the floor I found to be about 1-13th, or as 178 feet to 2,310 feet; while that of the new gallery for our pictures is as 482 feet to 964 feet, or more than one half. This is sufficiently different; but when, in addition to this, it is stated, that the light itself is nearly three times nearer the floor in our gallery than at Munich, viz. as 20 feet 9 inches to 52 feet, it will be seen that we have nearly fifteen times as much volume of light on our pictures. By means of blinds we are enabled to regulate the light as we please in sunny weather when the glare might be too great, and have amply sufficient in cloudy weather. &c. et with

\* To be continued.



all this, the glitter point is so managed as to be (at all convenient points for viewing the pictures) quite above them and out of the way. Moreover, by a nice calculation we have been able so to adjust the gas-lighting, that the angle of incidence falls within the same plane of reflection as the daylight, and is equally removed from the surface of the pictures. One of the causes of the greater abundance of the light in the gallery here arises from the skylight being carried quite through, and the coving of the ceiling being only from the sides towards the centre, and not from the ends also. Thus a far greater volume of light is admitted, and the pictures in the corners of the rooms are not sacrificed; for, of course, in the Munich gallery, the pictures in the corners are much farther removed from the light, on account of the covings, than even those in the centres of the sides and ends. It must be observed, however, that the smallness of our pictures prevented their being hung much above the eye. The average hanging is 9 feet 6 inches, while at Munich the gallery was expressly constructed to hang to the height of 29 feet. This is far too high. I think no picture (unless its own size exceeds these dimensions, or it has been composed for a high point of view) should be hung much higher than 15 feet to the top of the frame. And one fault of the Munich gallery is, that a construction suitable in some degree for such large pictures as "The Last Judgment" by Rubens, though even these are not abundantly lighted, is carried throughout, and is the same for rooms in which pictures of minute finish are hung: some of these to the height I have named (and, as the arrangement is chronological, of these, perchance, some of the best), while, as I have shown, all are ill and insufficiently lighted.

The Salon Carré in the Louvre, is another example of insufficient lighting; the source of light in this noble room being far too much removed from the pictures to light the smaller works properly when the day is the least cloudy. I have not the measurements of this gallery, but I believe it to be little less than 60 feet from the floor to the glass. The evil is increased by hanging the pictures out at the top (which is not the case at Munich, where they are fixed to the wall upright). From this hanging forward only a part of the light reaches the surface of the pictures, on some of which I have seen several inches of shadow thrown by the frames; and where the surface of the picture is uneven a new source of annoyance is developed from this practice.

This leads me to remark on this mode of hanging pictures as another great obstruction to their proper lighting. Although by this means also the glitter of their surface may be wholly obviated, and in hanging high it is almost a necessity thus to bring the surface of the picture at right angles with the line of view of the spectator; yet if the light is high, hanging a picture forward at top deprives it of much of the light from above. Pictures, if they are worth preserving in a national gallery at all, are well worth the wall space to admit of their being seen properly; and I again repeat that works should not be hung much more than half the height of those in the Pinacothek, and thus much of the necessity for hanging forward obviated.

The Sheepshanks Gallery is provided with an outer skylight on the roof, and an inner light of ground glass below it. This obviates all danger from leakages, affords ample opportunity for abundant ventilation, and screens the pictures from the direct rays of the sun, so that it is only in the extreme brightness and heat of summer that the blinds need be used.

The gallery at Munich consists of a succession of galleries lighted from the top, such as I have described, and communicating with a succession of small low cabinets lighted from the side. An opportunity was thus afforded me of seeing how unsuitable are such side-lighted rooms for the reception of pictures. Much of each side wall, where the light is good, is necessarily lost in the openings communicating from cabinet to cabinet. The side on which the window is placed is wholly useless, and on the side opposite the window the pictures are seen under the most unfavourable conditions possible, the spectator not only standing in his own light, but also having the reflection of the window glittering on every picture near the eye. If this is the case in the smaller cabinets lighted by one opening, how much more is it in the large room at the end of the galleries, lighted at the side by four large windows? On the wall opposite these windows numerous important pictures are hung, and it is wholly impossible to take up any position in the room from which you can see them. Moreover, the plan

of the building—a succession of cabinets parallel with the main galleries—is a very bad one, for openings into each cabinet from the main galleries (as, I believe, was the intention of the architect) would have led to the loss of a large amount of valuable wall space, for

I think there are twenty-three cabinets, wanting, therefore, twenty-three openings. As at present in the middle, you have constantly to return through many cabinets to gain the principal gallery, if you wish to study the works of a master or of a school in their entirety, since the plan of arrangement has been to put the large works of a school in the galleries, the small ones in the cabinets, thus widely separated from each other. From what I have said, you will infer, what is indeed the truth, that I do not concur in Murray's praise of this gallery. I think it a very handsome architectural erection, but it is very inconvenient and bad as a picture gallery, and I hope will not be made the model for anything done in this country, as it already has been at Dresden. Though some of the defects have been there modified, yet the faultiness of the original plan of necessity remains.

I must, however, be understood to speak only of the arrangements for the display of the treasures of art in these galleries. As to their architectural features, they are, as all well know, extremely grand and noble structures.

There is another mode of lighting picture galleries from the top to which it is desirable to refer. I mean that wherein a lantern treatment of the ceiling is adopted, instead of by means of flat skylights, as in the Sheepshanks Gallery.

This method of lighting has been followed in our own National Gallery, as well as in that of the Bourgeois Collection at Dulwich. Where only the perpendicular sides of the lantern are glazed, there is often a great deficiency of light by this mode, since in a long gallery the pictures on each side only receive the advantage of half the light admitted into the room, and that the farthest removed from them, namely, from the opposite side of the lantern. When the whole or part of the top is glazed also, as is the case in some of the rooms at Trafalgar-square, the only advantage is a cumbersome architectural structure, impeding a certain proportion of light, instead of the simpler one of flat lights.

There is no doubt that the immense improvement in the manufacture of sheet glass, which we owe partly to the removal of the duties, and partly to the efforts made to meet the wants of the Great Exhibition building of 1851, has enabled us safely to adopt a construction which was hardly available when the Dulwich or the present National Gallery was built;—I mean, by permitting the use of very large sheets of glass without laps. When the Dulwich Gallery was first erected, it used to be quoted as a well-lighted gallery. On a late visit, however, I could not but feel that it was far too dark, taking into consideration the gloominess of our atmosphere, and the obscurity of the pictures by the old masters for which it was intended. These have been so lowered in tone by time that they demand the fullest amount of light that can be admitted, while their highly-polished surfaces, arising from continuous varnishing, requires that all reflections should be carefully avoided, much more so, indeed, than in modern pictures, which are many of them unvarnished, and their scale of colour much brighter. I may here advert to the management of the Dulwich Collection as a type of the anti-public feeling that was current half a century ago, when its regulations were first framed. No one is admitted without a ticket. These tickets are only obtainable at a distance, in one or two places, and by particular application. Thus it happens, as it ever does under such arrangements, that the visits are at the lowest rate, and the public obtain hardly any advantage from what was intended solely for their benefit.

It may be said that it is quite possible to arrange a small gallery such as this for the Sheepshanks pictures, and to gain sufficient light, while avoiding any reflections, but that far greater difficulties have to be overcome in planning a gallery of greater width and height suitable for large pictures. But by careful attention to the laws of reflection, and to the fullest admission of light in the right situation, I do not think that increased size necessarily implies increased difficulties. It may be asked, what then is the cause that galleries for the reception of pictures have been so frequently failures as to the proper display of the works they contain? I believe it to be simply this. The architect is too often more intent on displaying himself, and what he improperly considers his art, than the works for which the structure is intended. Thus a noble façade, a handsome portico, a range of columns, a splendid elevation of the exterior, outweighs all consideration of that which the building is to contain; while even within everything must be sacrificed to classical examples, to Vitruvian proportions, to lofty vaultings, to cornices and covings,

which leave the pictures to the accident of being seen well or ill, as the chances arising out of the other contingencies may determine. The shrine is elegant, but the pictures are entombed.

But is this to be permitted in any buildings that the nation may erect? Are the gems to be lost in the costliness of their setting? Is it right to sacrifice our national pictures to a showy outside or to a palatial elevation? Think of the tens of thousands our national pictures have cost us; think of the value of such noble gifts as this of Mr. Sheepshanks, and the others I have already noticed, and say if we are to be thus deprived of their enjoyment.

The first thing to be demanded in a National Gallery of Art, whether of foreign or British pictures, should be the perfect adaptation of the place to their arrangement and display. This is hardly the work of an architect. It should be determined by a painter. The necessary proportions, the height and situation of the lights, the widths, the heights to which the pictures should be hung, the proportions of different compartments or cabinets as adapted to the pictures they are to contain, should be settled first, and by or in conjunction with the painter, and the block, thus absolutely and unchangeably determined, may then be given up to the architect to treat in conformity with the rules of his art. There can be no doubt that by such means a nobler, because more characteristic, structure would arise, than by the usual method of neglecting the utilities and considering the elevation and decoration before the purpose. And if not, are not the pictures the object, to which architecture is wholly secondary. In building a palace, exterior grandeur and interior magnificence are as much requisites as its uses for habitation or residence: such may be given up wholly to the architect: here he may revel in the display of his art, and carry the decoration to any extent that is not inconsistent with requisite amount of contrast: but in a gallery for art, the art is the one thing to which all should be subservient: the pictures, in this case, are not meant to serve as subsidiary decorations to the architecture, but are themselves the jewels for which the building forms only a fitting and suitable casket.

#### BAPTIST CHAPEL, PRESTON.

The Baptist congregations have recently in many places emerged from the small chapels in which they had previously met, and erected structures of size and cost, affording more fitting accommodation for the performance of their religious services. The body in Preston have not been behindhand. For some time they sought for land, and ultimately they purchased extensive premises fronting Fishergate, at the corner of Charley-street, and having pulled these down, are now building for themselves on that site the chapel represented by our engraving. The exterior, with the exception of the upper part of the tower, is now completed. It is wholly of Longridge stone.

The architects for the new edifice are Messrs. Hibbert and Rainford. The contracts for the masons', joiners', and carpenters', plasterers', and ironfounders' work, were intrusted to Messrs. Cooper and Tullis, and Mr. Richard Aughton. The total cost of the chapel, when completed, will be upwards of 2,500*l*. The entrance to the chapel is from Fishergate by a flight of stone steps, with palisading in front. The ground-floor of the chapel will seat 400 persons. It is proposed to have a gallery for the choir only. In the rear of the chapel will be vestries, and a staircase to the organ-gallery. The seats will be open, and the roof will have open framing, consisting of rafters with curved ribs and spandrels, filled in with decorated iron castings. Beneath the chapel will be boys' and girls' schools, with separate entrances from Charley-street, and divided from each other by a moveable screen.

The interior dimensions of the chapel are 40 feet by 72 feet. The style of architecture may be termed "Eclectic," but at the same time it has many features in common with the Romanesque. The tower at the corner of Fishergate and Charley-street will be 110 feet in height to the top of the tiled roof, which will cover it. In this tower provision will be made for a clock, which it is hoped will be placed therein by the public, and illuminated at night for the benefit of the town at large.

In the carving throughout, which is naturalistic, an attempt has been made to elicit such skill and ingenuity as the workmen possessed. On a future occasion we shall engrave some of the capitals. Mr. M. Stedman, of Preston, is the carver, and he has been assisted in the work by William Holden.

INSTITUTE OF ARCHITECTS.—At the next meeting to be held on Monday evening, the 30th of November, a paper will be read, "On the Foundations of some of the Metropolitan Bridges in the River Thames," by Mr. W. A. Boulton, Associate. The ballot will be taken for nine applicants for admission.





BAPTIST CHAPEL, PRESTON.—MESSRS. HIBBERT AND RAINFORD, ARCHITECTS.



## POINTED ARCHITECTURE AND ITS WORST ENEMIES.

SIR,—Few persons have a more ardent admiration for Gothic architecture than myself, and fewer have made it a closer object of study practically as well as theoretically; and it is with surprise and pain I have heard and read what has lately been promulgated by some who call themselves its peculiar advocates. A body of men, styling themselves followers of Pugin, have lately thought proper to lay down the most startling and contradictory dogmas on the subject; to vilify every one who is master of any other branch of art; and to arrogate to themselves not only the sole knowledge and understanding of Pointed architecture, but even its resuscitation. Well may one say, "Save me from my friends." The Puginites are doing more harm to Medieval art than all its direct opponents. Reckless assertion, transparent sophisms, and palpable falsehoods are soon discovered, the public are disgusted, and the result is, that the excellences and beauties the subject really possesses, are neglected and disregarded. Men feel with the poet, after detecting several fallacies, that they can believe nothing from such sources:—

"Quodcumque ostendit mihi sic, incredulus odi."

Let us examine a few of the dogmas lately put forth by the Puginites, and see how far their remarks are just. The first is, that Pointed architecture is "Christian art *par excellence*," and yet it is conceded that it never existed in the very heart and centre of the Christianity of that period; and, there is something more, it was not the art of the early Christians. The form and type, and the whole symbolism of the Christian church, are derived from the basilica, and if men, half a century back, were so wrong-headed or so ignorant as to copy temples instead, and put up ox-kulls over church porticos, it does not alter the question in the least. But, says one writer, it is "Christian *par excellence*," because it was early developed under "the influences of Christianity." Why, two-thirds of the Christian era had rolled away, twelve long centuries had past before there was a vestige of Pointed art in Europe; and when it did take root, it lasted in all its phases little more than three centuries, or one-sixth of the time in which Christianity has blessed the earth; and, of that period, how short a time was it in its pride. Its rise, as Mr. Sharpe has shown, in an admirable article in the *Journal of the British Archaeological Association* (vol. v. p. 311), occupied about half a century; it was in its glory, as the geometrical decorated, not quite three-quarters of a century; as the curvilinear, it began to show symptoms of decline through another half century; and it struggled on, degraded and debased, during a century and a half more. So that for only seventy years, only the twenty-sixth portion of the existence of Christianity, was Pointed architecture in its glory. Surely, after these considerations, we can never call it "Christian *par excellence*," on account of its co-existence or duration.

Nor was the world in that state of Christian excellence as to stamp that character on the contemporary arts. First, as regards the church: it was torn to pieces by contending factions; the monks hated and attacked the parochial clergy; and were themselves the victims of the unsparring enmity of the friars. These last were broken up into two great parties, the Dominicans and Franciscans, and at no time in the history of the world was there such intestine warfare between the religious. Abroad things were worse. There were two, and sometimes three, infallible heads of the church at once, each excommunicating and cursing the other and his adherents. Nor was the state of the laity any more "Christian *par excellence*," than that of the clerics. The madness of the crusades had exhausted all the resources of Europe; the victorious Turks were about to seize on the fair Byzantine empire. There was neither learning, arts, nor commerce. The lower orders were actually slaves,—sent working with collars on their necks. There was no law but the will of the strong, no arbitrator but the sword. A fine condition of church and state to be called "Christian *par excellence*!"

But another writer says, "it more thoroughly carries out its tone and feeling." In what way? Is there anything particularly Christian about crockets and pinnacles, or about anything introduced by Gothic architects, which the early Christian church did not possess? The only difference that I can see, beyond that of the form of ornament, was the introduction of a number of altars and images, which last, in particular, the early church held in deserved abhorrence.

But we are now startled by being told that "modern architecture, the last new original style," in the same paragraph is commended to us as "Medieval," and in the next it is "the architecture of our forefathers." What there is "Christian *par excellence*," about it, if "modern," I cannot conceive. The "last modern architecture," and perhaps the most original of all, is that of iron and glass; yet no one calls the

Crystal Palace "Christian art." The next, and what is generally called modern, is the Italian, which is as much a development from the Roman, as the Perpendicular from the Lancel, and as original in its progress and ultimate state. The Pointed is properly called Medieval, as holding the middle place between this and the Classic styles. How, then, can that be modern which was out of use more centuries than it ever existed in its prime? If modern, why does it deserve our veneration—why commend it to our feelings as the architecture of our forefathers? But then comes something more startling still: it is "the architecture of the Germanic races." Why, Pointed architecture is no more Germanic than it is Lombardic, Venetian, French, or Spanish, in all of which countries it exists; and, if it were, in the name of common sense what is there "Christian *par excellence*," about Germany or Germanism? Ye divines of Canterbury!—ye doctors of Oxford! hear this of the land of Agriola and Kuipvalding—of Kant and of Strauss, and acknowledge there is something new under the sun.

But there is another question I would ask of the Puginites,—if it be the architecture of our forefathers, why throw it aside for continental forms? It used to be argued, and I think truly, that the most elegant and most beautiful Gothic was to be found in England: why is this now abandoned for what a factious friend calls the "straky-bacon style" of Lombardy, or Louis Quize French. A church is to be built at Constantinople by the English, to commemorate their brave countrymen who fell warring against the aggressions of the great Czar of the North, and not a vestige of English taste, nor of the architecture of our forefathers, is tolerated. Instead of this we are to have a copy from the north of Italy, and without any more so, or vestige of anything English about it than if England never had an architect. An antiquary may in a few years stand before a building which he might suppose to have been built by "blind old Dandolo," after his brilliant conquest of Byzantium; but never would he think that it was built by English hands to the memory of the brave English hearts who fell at the Alma or Inkermann. Again, there is a competition for an abbey for English statesmen, and a design is sent in under the Horatian motto "Cel brave d'America Leto." Surely here, with such a title, we should expect something domestic—something of our own—something English. Withdraw the cover, and we have a rigid copy of a Dutch market-house and exchange, redolent only to our associations with herrings, cheese, and schamp.

"Can such things be,  
And overcome us like a summer's cloud,  
Without our special wonder?"

The fact is that Pointed architecture is neither Christian, Germanic, nor anything it is said to have been. It is Moslem—it is Saracenic. This fact has been abundantly proved by two great English authorities, Sir Gardner Wilkinson and Mr. Fergusson. That it was brought over by the Crusaders is a misapprehension on the Continent, and proved by Seroux D'Agincourt, and admitted by one of the Puginite writers. The passage is as curious and as startling as any of the multifarious *tour de force* of that party. He says: "Its systematic adoption can with certainty be traced to the suggestive architecture of the East; surely this does not unchristianize the already Christian (?) architecture of the soldiers of the Cross, who brought the idea home among the spoils won from their unbelieving foes." How came it to be "already Christian?" No Christian building had been erected in any way resembling it. There is no sort of pretence that the style, which Mr. Fergusson shows to have existed in the East 400 years before any similar building was erected in Europe, was ever used for any Christian edifice. It seems to me that the dictum, "The architecture of the Saracens was already Christian," is simply an intrepid assertion, without shadow of proof. Did not Mohammed vary in every way he could from Christian habits and usages, and not only so, but from those of the Jews? His calendar, mode of fasting, the preference of the left to right, his plurality of wives, and, to multiply instances, his observance of the Sabbath,—were not every one of these a determined opposition to Christianity, in every outward as well as inward form?

But to leave this point for a moment, it is stated that Justinian was the first who began to "Christianize" architecture, by building the Santa Sophia, at Constantinople, and it is hinted that this fact may have influenced Mohammedan architecture. I have already shown that anything in Christian form was repugnant to Moslem feeling; but I would ask in what way can the Santa Sophia be considered more Christian than the Cornian arrangements which obtained for the previous six centuries? The Empress was clearly a Eutychian, the Emperor himself was anything but orthodox (see "Evagrius," 4, 38, 39), and the ill feeling was smouldering, which shortly afterwards broke out as the

great schism between the Eastern and Western Churches. The plan of Santa Sophia is not that symbolized by the Latin Church,—the long "navis," or ship, in which like that of Noah, the world is saved from the Deluge, nor the "also" or wings of the dove. The form is that of the Greek cross, and the architects are two Asiatics. A French author has just stated that he has discovered this curious fact among some of the Byzantine writers,—that the idea of Santa Sophia, which is vaunted as Justinian's own, was in reality taken from the palace of his great rival, Khosrew, or Chosroes, the king of Persia. Be this as it may, a slight glance will show its thoroughly Oriental character.

But to return: it is considered on all hands, that the Crusaders brought the Saracenic art to Europe; and that it took root and became the fashion here. It was not Christian when they found it and adopted it. Did it become so, *par excellence*, afterwards? Alas! I have shown that neither its duration nor its concomitant circumstances entitle it to this distinctive epithet. In fact, there is a most singular circumstance connected with it. As has before been stated, a short half-century brought it to perfection, and it remained so about seventy years; but during this time the intercourse with the Moslem had ceased. St. Louis had perished before Damietta, in the seventh crusade; and another short half-century had wrested the last hold of the Christians (St. Jean d'Acre) on the Holy Land. The sight of Oriental civilization and art was thus entirely severed from the Europeans; and, strange to say, shortly after this came the decline, and then the disuse and fall of Pointed architecture.

With these stated facts before us, it seems strange that the term Christian art should ever have been *par excellence* applied to Gothic. Early Christian art had never existed at Rome, and on the revival of learning and letters it had awoken such disquieting studies as amazed the world. Talk of Gothic vaults and the covering large spaces,—arches, the boldest and lightest ever seen in the world, had spanned the noblest nave, and a dome larger than that of the Pantheon, as its great architect said, had been hurled up into the air. If Justinian in his conceit had overcome Solomon, the great Michael had exceeded him four-fold in extent, and ten-fold in beauty, and without departing from the symbolism of the early Christians.

The phrase, Christian architecture, as applied to Gothic, originated with poor Pugin. With the ardent zeal of a fresh convert, he wished to do all he could for his new faith. He conceived the Middle Ages were his plenary days, and he thought if he could revive nothing else of those times, he could revive their architecture. With him for years it was a fixed idea,—so much Gothic so much Popery. How this idea has been seized and worked on by other religionists, we will not pause to inquire; suffice it to say, that it is vaunted at Rome that the Ecclesiologist has made more converts than any other means of proselytism. Not only so, but it was eagerly caught at by the young men of that time. Here was a chance,—a royal road to architecture without the labour and careful study which classic art demands. To be able to draw a few windows, and to cast about Christian art, was all that was required: with this they started into full-blown architects. In fact, it was a capital cry; and both parties—Papists and Popes—caught it up as greedily as Pugin expected they would.

But it is very touching, and very instructive to watch the later years of this talented man. The scales gradually fell from his eyes; little by little the truth dawned on him, and his honest mind could not withhold his altered convictions from the public. In his last pamphlet he narrates, in most simple and affecting language, how one by one the bright visions he had formed of medieval purity and happiness had faded on nearer examination; in other words, how his life had been spent in chasing phantoms and shadows. Think of the wear on the brain when a man's daily toil is to endeavour to persuade himself and all around him into the belief of a falsehood,—to cheat himself into what his better reason must have revolted at, and, though imposed, to feel the world silently distrust him more day by day. No wonder his mind gave way. His course was that of a bright meteor; the smaller stars paled their calm lustre as he shot by, and the bystanders thought that his aspect

"With fear of change  
Perplexed the nations."

Alas! it ended in a sad night; with broken fortune, and with shattered intellect, he sank into the tomb. May he rest in peace, and may it be a lesson to us all that the pursuit of honest truth is the sweetest and best path through life, and far to be preferred to the temporary distinction falsehood and sophism may invest us with.

His followers just now are blowing their own trumpets, and lauding themselves in great style; and what is worse, abusing and vilifying not only every one who differs from them, but every one who knows



anything besides Gothic architecture. It is a difficult thing to cope with a man who makes it his boast that he *does not know*. But it appears that even in architecture there are Tite Barnacles, who dislike those who "want to know you know;" and it has been remarked, when a man says he is thankful for his ignorance, that he has a great deal more than he is aware of to be thankful for. In my humble judgment, the best Gothic architects are those who are also good Classic architects; I could point to many instances, one of them of the very highest standing. There is generally a purity and consistency about their designs that the Puginites want. With them there is almost always a straining after effect—a trying for "something strong," some "jolly dodge," as is the usual phraseology of the anti-Classics. Let me, however, hint that a little milder language towards others, and less use of such phrases as "an accursed thing" applied to everything which displeases them, would be in better taste.

Why on earth both styles should not be studied, I cannot conceive. To narrow minds, to the half-educated, to the bigoted, I can understand why one thing, and one thing only, can meet with reception. A few years ago the pre-Haendelites worshipped Sebastian Bach, and despised Mozart. Men have been found to say Shakespeare was no poet, because Milton was; and that Claude was no painter, because Turner was. But all this (as was said one evening at the Institute) is just this argument: because turtle soup is an excellent dish, therefore a haunch of venison is not Christian food. No, sir, the true architect is bound not only to make himself strictly master of all that has gone, but to look forward to that which is coming: there is nothing like the chastened experience of the past to guide and confirm the aspirations for the future.

But there is another matter which the Puginites arrogate to themselves in a way which is ludicrous. They assert that to them, and then only, the true revival of Pointed architecture is due. They are pictured as devoted young saints, rushing over the country as a sort of architectural missionaries, sketching every church in their way, and expounding the most sound truths every evening at the inn over their cigars and whiskey-and-water. Is not the revival the work of a century and more? From the time of Horace Walpole, did Grose, and Bunsam, and Dallaway do nothing? Were there not such men as Britton, and Rickman, and Bloxam, and John Henry Parker? But I will tell the Puginites the men who at last fully and truly developed the secrets of Medieval art. It is due to those who added the quality of the scholar to that of the sketcher and architect—who not only visited the edifices whose history they wished to investigate, but who have toiled over chartularies, chronicles, ledger books, and other monastic manuscripts, who have laboured in cathedral, collegiate, and other public libraries—who have explained the change of style, the addition of ornament, the falling off of effect, the mixture of workmanship, by showing that at certain periods a fire took place, a large legacy fell in, a lawsuit was lost, a settlement in the foundation threw down some work, or that the abbey was visited by some celebrated foreign architect. It is to Professor Willis and those who have followed his path the credit is due. It is to the union of the knowledge of black-letter and of black-lead, and not to Puginism, we are debtors.

I fear, sir, I have wearied you and your readers, but permit me to make a short *résumé* of the subject. It is stated that for six centuries Christians did not know how to build a Christian church, although the buildings they erected gave origin to all Christian symbolism; that at the end of this time an unorthodox emperor, and still more unorthodox wife, just on the eve of a great schism, built a large church in the style of a Persian palace, and this was the first step to Christianize architecture: that this style crept on by degrees for two centuries more, somewhere in the East, under the patronage of Moslem-mad, where it was developed as Saracenic, or Pointed architecture: that four centuries after this the crusading Christians for the first time became acquainted with this style, and recognized that as Christian which had been, *par excellence*, Moslem for ages; and that they, poor innocents! carried it home with them in triumph as Christian, and then for the first time for twelve centuries Europe was blessed with Christian architecture: that this pure Christian architecture, accustomed to the hot-bed of Islamism, lasted scarce a century in chilly Europe, and then faded, became degraded and debased, and died. Then we are told we must admire it because it is modern, because it is mediæval, because it is the architecture of our forefathers (which architecture practically is to be actually shelved for foreign foreigners),—in fact, because it is—

"A past, young, future, new, revived, old piece."

Are these men serious, or are they laughing at our boards? If serious, what reprobation do they not

deserve. We might pass by their arrogant assumptions—the only builders of "the temple of the Lord are we,"—but they have no right to make our English school of architectural criticism a laughing-stock in the eyes of foreigners.

VERAX.

#### PROVINCIAL NEWS.

**Banbury.**—The Corn Exchange, on the Cornhill, is nearly completed. The front is of freestone, and the walls are lined with the same material. The dimensions of the interior, from front to back, are 81 feet 6 inches, at the widest point, the back forming a considerable segment of a circle; the width at the end next to the street is 65 feet. The height of the interior from the floor-line is 47 feet; the central portion of the roof, which is partly dome-shaped, being glazed with rough glass. The entire width of the façade is 71 feet 6 inches. The height of the exterior, from the paving-line of the street to the apex of the pediment, is 49 feet 8 inches. The pedestal of the statue of Ceres surmounting it, is 6 feet 7 inches; and the statue, 9 feet; the total elevation being 65 feet 3 inches. Over the central doorway are the borough arms, and on the keystones of the doorway arches are masks, Bacchus, Ceres, and Mars. Attached to the building are three waiting or committee rooms, a back lobby, and other conveniences; and beneath are two cellars, one 60 feet by 16 feet, the other 16 feet square. Mr. Hill, of Leeds, is the architect; and Mr. Albert Kimberley, of Banbury, the builder. The contract was 1,898*l*.

**Cardiff.**—The "Printer's Devil" of the *Cardiff Guardian* is of opinion that "there's not a town so full of dirt throughout the Principality" as the thriving town of Cardiff is; and in humorous rhyme points attention to the state of "Paradise." Edward-street, New-towns, St. Mary-street, and Herbert-street, as fertile sources of disease.

**Carmarvon.**—It is stated that the Woods and Forests are making various repairs and excavations with the view of beautifying and putting in better order the ruins of Carmarvon Castle.

**Nechells green (Birmingham).** The foundation-stone of St. Clement's Schools, Nechells, was laid on Tuesday before last; and Messrs. Branson and Gwyther are the contractors for the building. According to the *Journal*, out of 2,700*l*. required for the school, 2,500*l*. have already been got together; 30*l*. of it by a penny subscription amongst the artisans connected with the district. The new schools will accommodate 590 children. Mr. Chatwin is the architect.

**Liverpool.**—A new fountain, on a large scale, has been erected in the Botanic Gardens-park, from a design by Mr. T. Duncan, water engineer: Mr. Rollett was the modeller; and it has been cast and erected by Messrs. Macgregor. Mr. Wells having done the building work. The fountain, as described in the *local Journal*, consists, in the first place, of three large shells, which receive the water, as basins; and they are supported by three livers, with spread wings. They rest upon a pedestal, formed from a combination of reeds, seaweed, shells, and aquatic plants. In the centre, where the three shells join, a perpendicular mass of reeds rises like a trunk to the height of 12 or 14 feet. Above the shells, at the back, standing amongst the reeds, are three more livers, one over each shell, from the beaks of which flow a stream of water. Metal cups are provided, one chained to each liver's leg, for the convenience of the thirsty. On gala days large jets of water can be sent from the upper portions of the ornamental pillar, which will flow over a series of steps.

**Leeds.**—The Leeds board of guardians have resolved upon purchasing a site for a new workhouse, adjacent to the present Industrial School, and asking the consent of the Poor-Law Board to an expenditure of 25,000*l*. for the new edifice and lands. The latter will consist of 21 acres.

#### CHURCH-BUILDING NEWS.

**Standground.**—A painted window, erected by Mr. Wallis, of Newcastle, has been placed in the north aisle of Standground Church. The window, which is of three lights, has, in the centre one, a representation of the prophetic vision, with legend, and beneath is an angel with a scroll. On either side are figured the raising of Jesus's daughter, and Mary at the feet of Jesus, when Martha is cumbered about much serving, with inscriptions.

**Baylton.**—The London-road Chapel and adjacent schools have recently been enlarged, at a cost of 1,500*l*. The size of the chapel is doubled: it is now capable of holding 1,000 persons. No alteration has been made in the style, but it has been carried out uniformly, so as to cover a piece of ground in the rear of about the extent on which it formerly stood. The roof has been raised, and left open, so as to exhibit the osken skeleton, instead of being ceiling flat. A

gallery now runs entirely round the chapel, supported on slight iron pillars. The pews are also changed in character. The architect for the alterations was Mr. Simpson, of B-ington, the contractors, Messrs. Walsen and Anson. In close proximity with the chapel, a new Sunday school, unpretending in character, has sprung up, built by Messrs. Goddard and Blaker, Portslade. This holds 300 children. It opens into the infant school, held daily, for 260 children. Up to the present time 800*l*. have been realized by congregational and other subscriptions, leaving 700*l*. still due.

**Hereford.**—The restoration of Hereford Cathedral is to be resumed in February next.

**Chester.**—The interior of the Lady Chapel of Chester Cathedral is undergoing a restoration. The ornamental colouring is in the hands of Mr. Octavius Hudson, of the local school of art. A considerable quantity of the old colour has been found adhering to the stonework, and this, according to the *local Chronicle*, will be strictly copied in the new painting. The stonework in one of the two openings on each side of the Lady Chapel, which seems to have been cut away at the time the aisles were added, will be replaced: the other openings must remain as they are, to give access to the Lady Chapel from the aisles. The carvings and ornaments which have been broken, or have failed from the decay of the stone, will be reinstated. There will be more or less colouring given to all the vaulting, the ribs, and the mouldings, &c. so as to extend this kind of decoration over the whole interior.

**Warburton (Cheshire).**—The old wooden church of Warburton has been restored. The west-end gallery has been removed, and the plaster and whitewash have been taken off the old woodwork of the roof and oak pillars. Other alterations and restorations of a similar kind have been made, and the edifice thrown open its whole length about 50 or 60 feet. The high pews have been replaced by low open seats. Decorative improvements have been made in the little chancel or transept. At the east end of the church, a stained glass three-light window, by Mr. Wallis, has been put up,—subjects, the Epiphany, Christ's birth, and Resurrection of our Saviour. The painter of the decorations, including texts in old church characters, was Mr. Chandley, of Warrington. The floor of the chancel has been laid with Minton's coloured tiles, and the walls covered with symbolical paintings. The expense of the alterations has been defrayed by the rector and the parish.

#### SUBWAYS FOR SEWERS, RAILS, PIPES, AND WIRES.

"AN improved scheme" for the tunnelling of crowded thoroughfares or other streets and roads, and the relief of traffic and facility of pipe-laying and lifting, drainage, &c. is proposed by Mr. Charles Baylis, of the Poultry, Solicitor, from whose communication on the subject we shall give the leading features of the scheme, as far as our limits will allow.

Provision for tram or railway traffic, as well as for the laying and lifting of gas and water pipes, and telegraphic wires, and for the flow of sewage, all without interference with the usual surface traffic, are, on this scheme, made by excavating the ground to a suitable depth, and building three tunnels side by side, and parallel to each other. In the centre one is placed or constructed the main sewer for the thoroughfare, and in the two side tunnels it is proposed to place the gas and water pipes and the telegraph wires. In order to gain access to these tunnels, apertures, covered with moveable metal or other plates or covers, are made on the top of the tunnels, and if thought desirable, strong sheets or blocks of glass may be let into the tops of the tunnels at intervals, so as to admit light to the interior. Of the advantages of ready access to gas and water pipes, &c. we need not now speak, having frequently and long since drawn attention to this subject in the *Builder*.

On the top of the tunnels it is proposed to construct two, three, or more lines of railway, and immediately above the railways on the side tunnels, and at about the level of the present roads, it is proposed to build the road or way for the ordinary traffic; but instead of covering over the subterranean railway the whole width of the street, it is proposed to leave an open space about 6 feet wide, or the breadth of a cabstand, all down the centre of the thoroughfare, except at appointed crossings, but covering the space over entirely where the streets intersect each other. Light and air would thus be admitted to the railway beneath. The communication of the water and gas-pipes, telegraph wires, &c. with the streets, &c. would be by taking them through a piece of iron tube of sufficient dimensions, to be embedded in the brickwork at intervals.

Mr. Baylis considers that the return on the outlay for such a scheme would be very large from the passenger and goods traffic alone; in



addition to which, the Post-office and other Government authorities, the City Corporation, Metropolitan Board of Works, owners and occupiers of premises, water, gas, and telegraph companies, and parochial authorities, would support and largely contribute to the carrying out as well as to the profits of the project.

#### FALL OF HOUSES, CAMBERWELL. A WORD OF CAUTION.

THE disaster which occurred on the 14th inst. in De Crespigny-park, Camberwell, where a party-wall between two semi-detached houses, just ready for roofing, fell, and carried with it the greater part of the front and back walls of both houses, should serve as a warning, and prevent other accidents. Those who ought to know attribute the fall entirely to the recklessness with which the wall—18 inches in thickness, *honeycombed with flaws*—had been carried up in haste, without a particle of iron hooping as bond to compensate for inferior workmanship. The materials of their several kinds are said to have been good. If the present weather continue, and the mode of building now pursued in several quarters we could name be persisted in, we shall have other falls before long. How some of the houses now being erected in the suburbs stand is a marvel,—the mortar made with loam instead of sand, the bricks the worst of "place," and these materials, such as they are, thrown together with reckless hand, without bond of any kind. The district-surveyors, ill-supported by many of the magistrates where there is the least obscurity in the Act, are nearly powerless in the matter, but are nevertheless visited with the abuse of the public whenever disaster occurs.

Most earnestly we exhort the speculative builders of the suburbs to change their course, at any rate till summer comes again, or life will probably be sacrificed. On several previous occasions, when we had expressed these words of caution, the ink had scarcely dried before an accident happened. We sincerely hope it may not be so now.

#### THE METROPOLITAN DRAINAGE QUESTION.

WE have been appealed to by various gentlemen who have suggested plans for the main drainage of the metropolis, to call attention to their respective claims of priority in the suggestion of such plans; but in some instances this course would only involve us in long correspondence and reclamation, without the means on our part of determining the questions at issue. We must content ourselves in the meantime by mentioning that Mr. J. Bailey Deuton, the engineer to the General Land Drainage and Improvement Company, at Westminster, claims attention to the circumstance,—“1. That amongst the designs presented to the Court of Sewers in 1849, there was one [Mr. Denton's own] which embodied all the governing principles, now accepted as practicable and sound, for the carrying out of that vast and important object, the main drainage of the metropolis, and that no tangible acknowledgment of this fact has been made, 2. That the credit and advantages which usually follow successful competition have been bestowed upon a gentleman, who candidly admits that he did not originate the scheme he has furnished to the Metropolitan Board of Works.” In justice to Mr. Denton we must also add, that in a communication, dated 29th ult. from Mr. H. C. Saunders, the secretary to the referees appointed by Sir Benjamin Hall, it is acknowledged, on the part of the referees, that the principles enumerated by Mr. Denton in a previous letter as those on which his plan in 1849 was founded, “are, in the main, those since adopted by the Metropolitan Board of Works, and, with certain modifications, approved by the referees.”

The only other case to which we shall at present allude is that of Mr. Charles Maybury Archer, of Hampstead-road. Mr. Archer, after pointing attention to Mr. Lipcombe's hydraulic scheme, recently introduced to public notice in the columns of the *Builder*, says,—“The new scheme in question appears to me to be an imitation of a comprehensive plan, which, about the middle of 1856, I forwarded to the commissioners appointed to consider the question of the main drainage, and to the commissioners for ascertaining the best means for distributing the sewage, and both of which desiderata I proposed to accomplish by means of pneumatic or atmospheric power.”

We may here say a few words as to a scheme proposed by Mr. H. Aloutt; “drainage engineer.” Mr. Aloutt suggests the construction of nine sewage works, six on the north and three on the south side of the Thames, with covered reservoirs near lines of railway, along which the sewage could be drawn off in closed trucks without pumping, precipitation, or deodorization, and sent into the country to timber stages, where it could be simply and at once dropped

through the bottom of the truck into heaps of earth laid down for its absorption into compost, to be afterwards spread upon the fields as manure. Mr. Aloutt feels obliged to notice the very obvious objection of immensity of work thus produced in perpetuity; but with the rain-fall running into the Thames, he does not think his scheme impracticable, and remarks, that it is by division of labour that great works are accomplished, and that the metropolis might thus be drained by subdivision of labour, just as it is easily provided with gas or water, by several companies, while any attempt to do so by a single system, might be impracticable, or at least unadvisable.

#### METROPOLITAN BOARD OF WORKS.

At a meeting of the Board, held on Monday, the 23rd inst. Mr. Thwaites, in the chair, further to consider and proceed upon a report, made by the chairman, of the result of the conference with the First Commissioner of Her Majesty's Works, on the main intercepting drainage, it was resolved, after several motions had been negatived,—

“That the reports of the Board submitted to the First Commissioner, and also the reports of the referees, be referred to the engineer of the Board, together with two other civil engineers, and that they be instructed to report to the Board as to the best means of carrying out the main drainage of the metropolis, and that in report on the expense of the works proposed they will state, first, the amount necessary for carrying the sewage to B, and, in case the funds should be provided, the further cost in carrying the sewage to the point of outfall at Sea Reach.”

Mr. Thos. Hawkesley and Mr. Geo. Biddier were appointed the referees.

Mr. Leslie, in moving previously the rejection of the plan sent by Capt. Gallon, Mr. Simpson, and Mr. Blackwell, went into an elaborate examination of it and of the report which accompanied it.

#### EVILS OF INHABITED STABLES.

WITH reference to the above subject (p. 662), permit me to direct attention to the fact that proper ventilation will lessen the great mortality, sickness, and unhealthiness found in Marylebone, and in the 163 inhabited stables inspected during the month. About three years ago, the coachman's house over the mews of Sir S. M. Peto, bat, in Bayswater-road, was as unhealthy as any in Marylebone. When Watson's ventilators were fixed for the stable and the coachman's house, by desire of Sir Morton, two of the children were suffering from chest diseases, and ever since the coachman's family had resided there the surgeon had been in attendance upon one or other of them: all looked sickly and had little appetite. In the morning, when it was time to arise, they felt as if they had not had a full night's sleep.

I called about six months after the ventilators were fixed, and saw the children with rosy cheeks, and heartily enjoying their sport. The mother informed me, that since the house and stable were ventilated, there had been no sickness in the family, and the air of the house felt as pleasant as if they lived in the country.

I know of very many similar facts that have occurred in London and the provinces. The horses require good ventilation as well as the grooms, and wherever stables are properly ventilated with freedom from draughts, the horses suffer less from disease, eat better, are stronger and better minded, are free from coughs, and maintain their money value.

If stables and the inhabited rooms over them were ventilated, not only would there be health and comfort for the horses, and the grooms and their families, but there would be an almost total absence of stable smell in the vicinity of mews, and a most powerful predisposing cause of fever and cholera would be removed. At present the mansions of the upper classes, so near to the mews, are well supplied with stable smells, through windows and other openings. The effect, on delicate ladies especially, and on those who live in the immediate neighbourhood of mews, is most injurious, from the accumulated and concentrated stench of stables.

FRESH AIR.

#### MONUMENTAL BRONZE *versus* MEMORIAL WINDOWS;

OR, *ERE PERENNIVS *versus* SPLENDIDIOR VITRO.*”

THE sturdy men of ancient name,  
Whose memories cannot pass,  
Laid broad the footings of their fame,  
And wrote themselves on brass.

But modern fame, more soon deserved  
(If not so fixed—alas!),  
Is sometimes suitably preserved  
In brilliant, brittle glass.

ANON.

\* Suggested by reading “Harrow Revisited,” in the *Builder* of 21st inst.

#### AN ARCHITECT ON SALT WATER AND NOT “AT SEA.”

It is always interesting to us to see the general intelligence of an architect enabling him to distinguish himself in a matter not connected with his profession.

A short time back, in a fog, the barque *Ontario*, of 631 tons register, ran on the S.W. end of the Plymouth breakwater. She had remained there nearly two months, with only her bows above high water, having still between 500 and 600 tons of her cargo in hold, when Mr. Damant, of the firm of Damant and Reid, architects, one of whose works (the Devon and Cornwall Bank, at Plymouth) we recently mentioned undertook to bring her into port with her remaining cargo. With the aid of a diver, and the loan of three brigs-of-war, ceded by the Devonport dockyard authorities, under a bond for 200l. to be paid in the event of the vessel's sinking, &c. Mr. Damant, at low water, went to work. Two of the brigs were attached to the wreck, one on each side, near the stern, and one to her bows, by chains which looped the sunken vessel up to the others, and as these loops depended necessarily from the bows of the brigs, their ballast was run aft to aid their leverage. Two steam-tugs were then affixed in readiness to the hull of the wreck. As the tide rose, the brigs did their expected duty, lifting their burthen into a floating position; and, by the light of the moon, this strange mass of connected crafts moved safely, over a distance of nearly three and a half miles, from the outer side of the Breakwater into Catwater harbour.

Mr. Damant's difficulties were great. The harbour-master's report against the practicability of the scheme had occasioned the demand of the bond; and, without a word against any official, the obstacles of “red tapeism” were likely to be most serious to the undertaker. They have, however, only aided to enhance Dr. Damant's triumph, and as he has so successfully gone out of his usual beat in this exhibition of his knowledge, practical skill, and readiness, and “launching” just now is on the carpet, we may be excused for going something out of our ordinary way in recording it. He has another claim to our notice in being a connection of Mr. George Wightwick, to whom, not now in practice, the profession is under many obligations.

Mr. Damant was formerly in the employ of Mr. Reudel, the late engineer, during which engagement he received a testimonial from the directors of the Edinburgh Water Company, for his services (in Mr. Reudel's absence), while their Bill was before the House of Commons.

#### ARTESIAN WELLS AND PURE WATER FOR LONDON.

It is refreshing to look at the engraving of the Artesian Fountains at Grenelle, Paris, in the *Builder* of the week before last. I make no doubt but the real water display will be fully equal to the pleasing impression conveyed by the engraving. It does great credit to M. Ivon, engineer, for his good taste.

The question will no doubt be asked by many,—Is it not possible for such wells and such designs to be constructed and carried out in London and other large towns and cities in England? I answer decidedly, yes, if a fair scope be given to designers, and the judges will act with real judgment. But no unprejudiced man of sense, taste, or reflection can say our recent competition designs for “Public Offices,” “Wellington Monument,” and “Sub-ways” have had any other decision than would have resulted from a lottery wheel. The public funds have been wasted and misapplied. There is no possibility, I am assured, of any of the prize designs being practically adopted, and the public have only been amused or interested for no purpose but that of bringing out a useless display of p-tience, perseverance, and wasted energy of architects and artists, many of whom must be heart-sick at their fruitless labours and empty pockets.

But another great mischief is the waste of valuable time, as well as energies, of the past two or three years, producing nothing but vague, idle declamation, instead of works such as those which have practically and steadily progressed in France, and which prove the superiority of action over our talk. Is this to last? Are we to make no progress? And are we to continue to pander to, if not to foster, public nuisances, when the remedies are in our own hands, if we will only steadily adopt and use them? These are vital questions. Can the public funds be more appropriately expended than in employing our working classes and tradesmen in the removal of nuisances, and substitution of social and moral benefits, by introduction of works and constructions which will produce plenty of pure air and pure water, which, in combination with proper dwellings for the poor, must advance all? The stoppage of the Artesian well at Kentish-town was a great mistake; 1,302 feet of sinking and boring were left, as a failure, when a few hundred feet more would have given satisfactory and remunerative



results. Let us hope this work will soon be resumed. As to the *sewage*, now discharging into the Thames, that will, I trust, some day be prevented, and be applied to its proper purpose for "top-growing"; but this, like "the good time coming," we must wait a little longer for, at the rate we are now slowly dragging along, and doing nothing.

PRACTICAL.

#### EXAMINATIONS IN ARCHITECTURE. OXFORD UNIVERSITY.

The delegacy appointed to carry into execution the statute passed last term concerning the examination of persons not members of the University, has agreed upon the scheme of examination for the year 1858.

In the list of subjects in which candidates may be examined we find the following:—

##### "Drawing and Architecture.

1. Drawing from the flat, from models, from memory, and in perspective; and drawing of plans, sections, and elevations.

2. Design in pen-and-ink, and in colour.

3. The history and principles of the arts of design.

A fair degree of skill in free-hand drawing will be required in order that a candidate may pass in this section."

The examination will commence on Monday, the 21st of June, 1858.

#### THE NEW RIVER COMPANY.

SIR,—I have just seen, in the *Builder* for the 12th of September last, an article headed "Hertford," in which it is stated that the New River Company are concentrating the sewers of the town in their new deodorizing beds, where all the foul *sewage* water from the town will be filtered and passed into the Lee trust in a clear state. Can it be possible that the New River Company really intend that the inhabitants of the metropolis shall drink filtered *sewage* water? If so, the sooner this is put a stop to the better. Hanging would be too good for men who would perpetrate such an abomination.

B. JONES, Jun.

#### PROCEEDINGS UNDER METROPOLITAN BUILDING ACT.

EXEMPTED BUILDINGS.—MILITIA DEPOT.

JOHN JAY, APPELLANT, v. HENRY JOHN HAMMOND, RESPONDENT.

THIS was an appeal (heard at the Court of Queen's Bench, on the 21st inst.) from a conviction by a metropolitan police magistrate, whereby the appellant was convicted in law, and costs, for not giving, pursuant to the 38th section of the Metropolitan Building Act, two days' notice to the district surveyor before commencing a certain building. The question for the decision of the court was whether the building came under the fifth clause, which exempted from the operation of the Act all buildings employed for her Majesty's use or service. It appeared that the building was in course of erection by the commissioners of lieutenancy in the city of London, as a depot for the London militia, and for the deposit and safe custody of its arms, accoutrements, and stores. The commissioners were appointed by letters patent on the 1st December 1853, and by 1 George IV. chap. 10, they were empowered to array, train, and exercise the militia, and also to erect, purchase, or hire premises.

Mr. M. Smith was now heard in support of the conviction. The buildings exempted by the 6th section of the Metropolitan Building Act (18 and 19 Vict. c. 122) were "Her Majesty's royal palaces, any building in the possession of her Majesty, her heirs or successors, or employed for her Majesty's use or service." He contended that these words meant buildings belonging to and directly in the employment of the Crown.

Lord Campbell.—That is not what the Act says.

Lord Smith.—It is not a building in the use of the Crown.

Lord Campbell.—It is used for holding arms and ammunition belonging to her Majesty, and for the protection of the realm.

Mr. Smith.—The magistrate treated it as a building for the use and service of the commissioners of lieutenancy. They have a duty cast upon them to find and provide a building, and to deposit in it the militia arms and stores.

Mr. Justice Wightman.—Everything kept there is the property of the Crown.

Lord Campbell.—The words of the section are too strong to get over. This is clearly a building for her Majesty's use and service, and it is wholly immaterial at whose expense it is erected or maintained.

The other judges concurring, the conviction was quashed.

It is right to mention that it was not the builder in this case who objected to admit the control of the district surveyor, but the advisers of the court of lieutenancy. The court of lieutenancy applied to the judges for costs as against Mr. Hammond, but the court refused them, saying he was a "public officer," acting in what he considered to be the discharge of his duty.

#### GAS IN MELBOURNE, AUSTRALIA.

Melbourne is now illuminated by gas. The streets of the city for the first time "saw the light" on the 12th of August, and the event was convivially celebrated by the mayor and his friends at the "Criterion." Owing to the extreme width of the streets, however, and the great interval which separates the standards from each other, the general effect was not so brilliant as had been generally anticipated.

#### Books Received.

*An Account of Church Bells; with some Notice of Wiltshire Bells and Bell-founders.* By the Rev. W. C. LUKIS, Parker: London and Oxford. 1857.

THIS account of church bells was originally read at a meeting of the Wiltshire Archeological Society, at Salisbury, in 1854, and appeared in that Society's *Magazine*. The author has since collected much additional information, and has embodied what he considered of sufficient interest in the account now published. The volume contains a copious list of founders, a comparative scale of tenor bells, and inscriptions from nearly 500 parishes in various parts of the country. Indeed, the account itself has been drawn up almost exclusively from bell inscriptions. Some plates are given showing various modes of hanging bells, &c. The author divides his treatise into remarks on bellfries, bell-founders, and foundries; bell metal, casting and tuning, hanging, cost, legends, and ringing of bells; and on ancient bells, spoliation of bells in the sixteenth century, and on the comparative scale of tenor bells. There is thus here a good deal of information to be got upon this (at present) rather prominent and popular subject, although the account does not enter into the history of bells in general, which, indeed, had already been done by several writers, such as the Revs. A. Gally and H. T. Ellacombe. The latter gentleman, by the way, has just published (Hamilton, Adams, and Co. London) "An Affectionate Address to Ringers in every Church and Parish;" being a "Ringers' True Guide, containing a safe Directory for every true Churchman," by S. Beaufay, a dissenting preacher. The fact that there are no less than 70,000 bell-ringers in the country seems to afford a sufficient apology for the publication of this little tract by one so well known in connection with church bells as our readers will remember Mr. Ellacombe to be.

#### ILLUSTRATED BOOKS.

*Poetry and Pictures from Thomas Moore.* London: Longman and Co. 1858.

THE publishers say, "The demand for illustrated books for presents has led them to suppose that a selection from the poems of Thomas Moore would be acceptable." We cannot praise the *logic* of the advertisement, good Messrs. Longman, but we quite agree with what is meant, and can cordially admire the book which has resulted from the supposition. Eighteen artists, including Cope, Duncan, Birket Foster, Horsley, Macleise, F. R. Pickersgill, S. Read, W. H. Rogers (the Initial Letters and Ornaments), G. Thomas, Topham, H. Warren, and Harrison Weir, have co-operated in the illustration of Moore's world-famous songs; but Mr. Birket Foster plays the chief part, and has contributed some of the most charming landscapes he ever drew without having them spoilt, as for example, the illustrations to "As a beam o'er the face of the waters may glow" (simply sky and sea), "Venice," both engraved by J. Cooper, and "When through the piazzetta," engraved by W. T. Linton. The best of the figure subjects is F. R. Pickersgill's to "Young Love's Dream." Duncan's drawing to "I saw from the beach," W. Thomas's drawing to "I heard those arms that hold you," G. Thomas's "Young Jessica," and Cope's "As once a Grecian maiden wept," bating the costume, are amongst the best. It is a charming book.

#### VARIORUM.

"The Pick and Gad" is a monthly record of mining and its allied sciences and arts, the first number of which has just been issued by the proprietor, Mr. Whitton Arundell, of Henrietta-street, Covent-garden, mining engineer and surveyor, by whom it is conducted. The number opens with the first part of an article on "The Physical and Geological Structure of the Mining Districts of Cornwall and South Devon," accompanied by a geological map of the same districts. There are also papers "On the School of Mines and its Publications," and "On the Drainage of Mines," with reviews of cognate books, and a monthly summary of scientific and art progress, list of prices of metals, &c.—A new and enlarged edition of "The Executors' Guide," by Mr. J. C. Hudson, late of the Legacy-Duty Office at Somerset House, has been published by Messrs. Longman and Co. This very useful little book is not intended to supersede legal advice, but rather to point out to the numerous class of executors what is obvious and what requires such advice, in the exercise of their very onerous and multitudinous duties. Considering the "mess" which too many executors make of these duties, every one of them ought to have a guide such as this at hand, for reference and instruction wherever he feels any doubt, and not seldom, too, where he has not begun to do so discreet an act as to doubt occasionally happens to be. The utility of a reliable guide such as this, may be estimated from the fact, that more than 18,000 wills are

annually proved in England and Wales alone.—Mr. Toulmin Smith has had published by Stanford, of Charing-cross, "A Vindication of Common Sense, Human Nature, and Practical Improvement, against the Manifesto of Centralism put forth at the Social Science Association, 1857," in which this expert writer tells us, in a leading title, that "local self-government [is] un-mystified." Doubtless, when local self-government is itself ripped up as ably by some special pleader on behalf of Centralism as Centralism has been by Mr. T. Smith on behalf of local self-government, neutral and disinterested "parties" will be able to judge between the contending principles, and to decide, fully and finally, which is best, or whether (as we rather suspect) both be not best,—that is, when each is stripped of its own special and peculiar superfluities and abuses, and rehabilitated by the amendment of its own shortcomings. Meaning, we fear that for every Royal mind of central misgovernment, an Oliver of local self-government would not be difficult to find.—We have received from Sir Richard Mayne the "Fares for Hackney Carriages, and distances within a circle of four miles' radius from Charing-cross, measured by authority of the Commissioner of Police;" and as by Act of Parliament, in case of dispute, these tables are to be received as conclusive evidence, the public should know that the list is published by C. Knight, and by W. Clowes and Sons.

#### Miscellaneous.

GAS: THE METROPOLITAN DIVIDED AND MONOPOLIZED BY THE GAS COMPANIES.—A scheme, whereby the metropolitan gas consumers are divided into so many lots, and handed over each to one special gas company, as a subject for monopolized dealing; and, hence, whereby the consumers are placed entirely at the mercy of the heretofore competing companies, has been matured and resolved upon by the Metropolitan Gas Companies; and it is full time the gas consumers of the metropolis were awakened to the necessity of resisting the snare. Some of the vestries, indeed, are already up and doing, and an important meeting of deputations of leading parishes was held on the 18th inst. in the Court-house of St. Marylebone, for the purpose of conferring on the subject. Resolutions, in favour of general co-operation to resist the attempt, were unanimously passed, and an adjournment voted, to afford time and opportunity for communication with all the vestries and district Boards of the metropolitan parishes, and for the obtaining of powers for further action. Just as the meeting was concluding an important letter was received from the town-clerk of Manchester, stating that the profit of gas lighting to the corporation amounted to between 30,000*l.* and 40,000*l.* per annum, and was applied to local improvements—an intimation which was received with loud applause.

ST. MARK'S NATIONAL SCHOOLS, OLD-STREET-ROAD.—The opening festival of these schools was held last week, and the opportunity was availed of to present a testimonial to the architect: a large number of ladies and gentlemen were present. The schools are in the Gothic style, and capable of holding three hundred boys and girls. The architect was Mr. E. C. S. Blake, of Westminster. The builder was Mr. Smith. The testimonial consisted of a handsome clock, on an ebony stand, and under a glass shade, with an inscription on a silver plate.

FEARS FOR WELLS CATHEDRAL.—Will you permit me, through the medium of your columns, to call attention to the works lately commenced on the south side of Wells cathedral. A few years ago irreparable injury was done to the wonderful west front by the repairs then made, hearing all the evidences of hasty contract work without attentive or competent supervision: I was, therefore, alarmed during a visit to the neighbourhood of Wells, a week or two ago, at hearing of the contemplated restoration of the whole of the south side, under the superintendence of a surveyor and auctioneer of the town. As the safety and preservation of our venerable churches is a matter of national importance, I think it is the duty of every one to endeavour to prevent any meddling with them, except under the most watchful and zealous care of a thoroughly competent architect. A very intelligent stone carver, whom I met at Glastonbury, and who, during many years' work at restorations under eminent men, has imbibed an intense love for his work, expressed to me very deep regret at the manner in which the work is being performed, and assured me that the so-called restoration would be the mere destruction of the exquisite old details. An insertion in this role, or, what would be better, a few words from your influential pen, may induce the authorities to consult some architect of known ability in such matters as to whether the work really is going on properly or not, and, should the report prove unfavourable, they cannot, of course, wish it to proceed as at present.

J. A. C.



**THE PRIZE DESIGNS FOR THE GOVERNMENT OFFICES.**—We are glad to hear that these designs, as we thought they ought to be, are intended to be further exhibited; the Architectural Institute of Scotland having indicated the Board of Works to allow them to be sent to Edinburgh for that purpose.

**LIVERPOOL ARCHITECTURAL SOCIETY.**—At a meeting on the 18th, Mr. S. Huggins, President, in the chair, Mr. F. Horner read a paper entitled "A Plea for the Beautiful in Art." A brief discussion followed, in the course of which Mr. F. Howard remarked that the fine arts were not fine arts unless they interested the imagination, and through the imagination appealed to the higher emotions of the soul. Comic pictures, he said, were only admissible when they were so treated as to elevate the comicality of the subject, and to Wilkie was due the credit of having entirely originated that mode of treating comic subjects, the Dutch comic pictures, so called, though they exemplified the principles of the art, being coarse, and frequently indecent. Art was one thing and the application of art another, and all the principles of art might be combined without producing fine art at all. Mr. Pictou said he could not help thinking that Mr. Horner had taken in some respects rather too desponding a view of the state of art at the present day. With regard to architecture, he denied that the architects of the present day were greater copyists than those of any former period. They took old styles as their types, as the Greeks took the Egyptian for their type, but they were continually creating new features, and were going on in that way insensibly to develop what would be a thoroughly new and original style of art.

**ST. MARTIN'S-IN-THE-FIELDS LIBRARY AND READING ROOM.**—A lecture on the "Seven Churches of Asia" was given on the 17th inst. by the Hon. Sec. the Rev. W. J. Beaumont. The rev. the vicar, in taking the chair, informed the meeting that their hon. sec. was about to leave them, and enquired the zeal and energy he had displayed in discharging his duties and promoting the instruction and amusement of the working classes. The lecture was listened to with great interest; the more so from the rev. lecturer having visited personally the scenes he described.

**THE APPROPRIATION OF SMITHFIELD.**—This important question still remains undecided, and the present position of affairs is as follows:—The committee appointed to arrange this business have, it appears, failed to agree with the Chancellor of the Exchequer, who will not sanction any plan which does not leave sufficient space in front of St. Bartholomew's Hospital. We believe that the Government are willing to give up all the ground on the Charterhouse side of Long-lane, and that the committee are not satisfied with this arrangement, and are determined to bring the matter under the consideration of Parliament. Due regard, it is to be hoped, will be paid to the connection of the site with many important national associations, and the value of open areas.

**ST. MICHAEL'S, CORNHILL.**—At a vestry meeting of the parish of St. Michael, Cornhill, on the 19th instant, Mr. Herbert Williams, the surveyor of the Drapers' Company, was elected parish surveyor. We hope this may be a move towards getting the new porch of the church finished, and the removal of the ugly boarding that has so long been an eyesore to the public.

**THE DUDLEY DRAINAGE.**—In the last number of the *Builder* there is a paragraph respecting the Dudley drainage plans. As I have never troubled you with a word respecting any works of mine (excepting advertisements for tenders), I am sure you will not deny me space to correct some inaccuracies in this paragraph. It is incorrect that "the Board of Health applied for his [my] account up to the present time." I sent them such an account voluntarily, and they at once referred it to their own officials, whose report, that I was entitled to be paid the full amount of my claim, was presented at the last meeting of the Board, and entered on their minutes. A resolution was passed requesting me to meet a committee of the whole Board, to advise with them, as their engineer, as to proceeding as soon as possible with the sewerage works most necessary; and also, to arrange for payment of what was due to me. This is the correct version of the words, "the account was referred to a committee of the whole Board." The greatest inaccuracy is, that after giving to the public my account (with, perhaps, an unnecessary amount of detail), your informant has placed in juxtaposition with it, "the estimated cost of the sewerage is 40,000." I beg to inform you that the sum total of the estimates is very nearly 50,000.

WILLIAM LEE.

\* \* The paragraph in question was inserted simply as supplying information, and was not intended to convey any matter of offence. The estimated cost of the sewerage was stated at the meeting of the Board to be the sum named in the paragraph in question, and was so reported in the local papers.

**THE LEEDS TOWN-HALL CONTRACT.**—The Town Council of Leeds held a special meeting on Wednesday last week, when they authorized the town clerk to defend the council against a bill, filed in Chancery by the assignees of Mr. Samuel Atack, the contractor for the town-hall, with reference to the works of that building, in which certain claims against the council, amounting to upwards of 20,000*l.* are set forth.

**THE DUDLEY SCHOOL OF ART.**—The second annual examination of the pupils in this school took place last week, and the drawings were exhibited and visited by many of the townspeople. Mr. Wyld, the Government inspector, was present at the examination of Mr. Cochraue, the master's pupils, and nine medals were awarded to the works in a more advanced stage.

**HIGHAM PERRIES CHURCH (NORTHAMPTON SHIRE).**—We are asked by the officials to mention that this formerly collegiate church is undergoing restoration under the superintendence of Mr. W. Slater. Higham was the birthplace of Archbishop Chicheley, who is said to have been found here tending his father's sheep by William of Wickham, who, noticing his intelligence, instilled into him his architectural as well as his church principles. He has left at Higham, in the bedchamber and school, proofs of his attachment to his native place; and the fine parish church, though in the main a century older, shows, it is stated, indications of having undergone a restoration in the hands of the Archbishop, whose likeness and arms are to be found in the Perpendicular woodwork of the chancel. There is a curious pavement at the east end, which has been drawn and described by Lord Aylmer Compton. Towards the restoration fund, her Majesty has contributed 105*l.* The parishioners, in number about 1,100, and none of them, with very trifling exceptions, owners of land or houses in the parish, having raised 1,450*l.* by voluntary subscriptions, are appealing to the public for the supply of the remainder of the sum required.

**WESTON'S MUSIC-HALL, HIGH HOLBORN.**—This is a very handsome apartment, which has been built under the direction of Messrs. Finch Hill, and Parnire. It is more than 100 feet long, about 40 feet wide, and 40 feet high, and the ceiling, divided into ten compartments, is elaborately ornamented, and, together with the front of the gallery, displays a considerable amount of fanciful design. Iron columns, with ornamental spandrels, carry the gallery: the end-wall, next the orchestra and stage, is lined with large sheets of looking-glass, surrounded by drapery. The colour is delicate and pretty, and the decorations, by Messrs. Homan and Benson, appropriate and pleasing. The apparatuses are laid with best patent mosaic tiles, by the Poole Architectural Pottery Company. The hall is lighted by five glass chandeliers, the centre one of which is too large.

**THE ARCHITECTURAL EXHIBITION.**—A correspondent says:—"On seeing the advertisement of the Architectural Committee, permitting the exhibition of the drawings for the new Government Offices and Memorial Church, I was in doubt whether the designs for the new Islington Vestry-hall would be admissible, they having been previously exhibited; but upon making inquiries I have been given to understand that as it was a local exhibition, and for local purposes alone, it will not preclude them from the forthcoming exhibition; therefore I wish to make this known, through your paper, to others like myself who may be in doubt, and I trust that competitors will send their designs that a comparison may be drawn between the rejected and premiated drawings."

**BELPER CEMETERY COMPETITION.**—The successful competitor is Mr. E. Holmes. We stated this last week; but, through a printer's accident, the three lines containing the intimation (bottom of first column, p. 683), were shifted to the foot of the third column.

**THE GLASGOW MASONS.**—The master masons have conceded the demand of the operatives that their wages shall be paid fortnightly; and this cause of dispute has been so far satisfactorily arranged. We regret to state, however, as one of the results of the present monetary crisis, that on Saturday before last 700 operative masons were dismissed from employment in Glasgow, and that the number of unemployed was likely to be very considerably increased at the end of the past week.

**SCAFFOLD ACCIDENTS.**—Three men were on a scaffold of a building in course of erection in Beer-lane, Tower-street, when the plank on which they were standing suddenly broke, and they fell to the basement, a depth of 60 feet. One of them received extensive injuries. Another scaffold accident took place last week on the premises of Mr. Hind, an upholsterer, of Tottenham-court-road. William Hunt, foreman to the bricklayers, fell from one of the stages of the scaffold into the stone-yard, a height of near 40 feet. Both his thighs were broken, and his skull was fractured, with concussion of the brain. The case is perfectly hopeless.

**A COVERED WALK.**—Cut through Russell-square, and let there be an avenue, gravelled, and covered (across the garden-ground), Crystal Palace-like, from Bloomsbury-square to Gordon-square. The climate forbidding garden exercise for several months in the year, this would serve a private advantage, and being a thoroughfare for pedestrians (never numerous), from say six o'clock a.m. to eight p.m. for some months in the year. Each path-side to be railed, to prevent encroachments in the garden. Posts to be placed at each end. The expense to be divided between the estate holders and the Government.—C. D.

**ROMAN REMAINS AT GLOUCESTER.**—Some Roman remains have been discovered by workmen while making excavations for cellars in Northgate-street. At the depth of about 8 feet, the bases of two columns, 8 feet apart, were discovered, resting in their original position on square stone plinths, flanked on the one side by a square plaster, and surrounded by the basement walls of an old Roman structure. At the distance of 8 feet from the columns, and facing the street, were the remains of a doorway. A stone tablet or niche was found with its face to the ground, and bearing in bold *alto-relievo* the figures of Esculapius and Hygiea.

**BINK'S TRAVELLING SCAFFOLD.**—At the Hull Public Rooms a machine of simple construction has been exhibited. It consists of a perpendicular ladder supported by a "strut." The ladder poles in this instance are 40 feet in height, the lower bars being 4 feet, and the upper ones 3 feet in length, and 19 inches apart: every fourth bar sustains a platform about 5 feet long and 1 to 2 feet wide, placed on the inside of a ladder, and an equally wide ledge is placed on the top of the machine, the feet of which are grooved into another ledge, which being supported by iron wheels, becomes a travelling platform.

**LOOK TO YOUR COIN DEPOSITS.**—The foundation stone of a Lunatic Asylum was laid at Nottingham, a week or two since, when a bottle, containing a parchment record and a number of coins, was deposited under it, as usual. A watch was kept each night, until Friday, in last week, when the stone, having been built upon and embedded in masonry, was thought secure. The thieves, however, had also kept watch. The workmen, on Saturday morning, found that the stone had been undermined, and the coins extracted. The actual present value was only 12*s.*

**CARPENTERS' AND JOINERS' STRIKE IN MANCHESTER.**—As the turnouts have refused every offer of arbitration or mediation on the dispute, the hopes entertained that the strike would speedily terminate have been dissipated. The employers have obtained hands from distant localities, and some of the old hands, tired of their uncomfortable position on strike, have returned to work. One of the largest building firms has obtained one-fourth of their usual complement.

**POLYTECHNIC INSTITUTION.** Mr. Popper's lecture, entitled "A Scuttle of Coals, from the Mine to the Fireside," embodying an account of his visit to a mine, and illustrated very fully by dissolving views, is one of the most interesting ever delivered within the walls of the Polytechnic, and may be listened to with advantage by young and old alike. The dangerous conditions under which the miners pursue their work are described, as well as the mitigations which science provides; and a number of valuable statistics are conveyed to the hearer in so pleasant a manner, that after being thoroughly amused, he finds himself considerably instructed.

**THE CLOCK OF RYE CHURCH.**—Presuming that the subject of "Public Clocks" is a legitimate portion of the scope of your useful work, as connected with buildings, I should feel much obliged if one of your readers could furnish some particulars to be depended on respecting the very large old clock in the old church of the old town of Rye, in Sussex, which I saw there some few years ago and I presume is there now. The large dial-plate was placed either over the great east window or the east face of the tower, I forget which, but the pendulum swung inside the body of the church and was seen in motion through the east window. My reason for making this application is, that in a long and very interesting article in the *Times* of the 18th instant, headed "The Tower and Clock at Westminster" (and which the *Times* of the next day, under the head of "The Re-casting of the Westminster Bell," admits to be incorrect in some particulars), it is stated, "It [the pendulum] is 14 feet long, weighing over 6 cwt. and more than double the size of the Post-office clock pendulum, which was the largest in the world." If by "size" is meant "length," I cannot but fancy that it is an error, and that the pendulum of Rye church clock is "larger," that is, "longer" than either. But, apart from this, the clock, from its size and make, is a curiosity worthy a notice in your useful journal. As Rye was one of the ancient cinque ports, with a good trade, perhaps the clock may be of foreign make.—AN INQUIRER.



# The Builder.

VOL. XV.—No. 774.

**N**OTHING interferes more with the improvement of the masses of the people than the difficulty which exists of getting rid of old customs; for instance, the practice of keeping the dead before interment for a week or more, so hard to break down, has, in many instances, been the means of destroying the lives and health of the living. For many years infants were "swaddled" and bound up in the remarkable manner shown in old manuscripts and pictures. It would be as difficult to form an estimate of the number who have been killed by such processes as of those who have died prematurely from the effects of tight-lacing. At one time, in cases of small-pox and similar diseases, every breath of air was carefully excluded, as though that life-preserving element was an enemy instead of a friend. When this treatment was in fashion the small-pox was about as fatal as the cholera is now. Fever patients used to be closed up in a similar manner, and the beds of the sufferers were piled with blankets. We cannot wonder, under such circumstances, at the spreading of the disease.

All these evils, and fifty more, have been, to a considerable extent, lessened. There are, however, a large number of persons amongst the less educated with whom the fashion of former days is still considered the best, in spite of its evident ill effects. Many an intelligent artisan and his wife who would laugh at most of the practices alluded to, would decline availing themselves of a home, however wholesome, which did not present the appearance of those built upon the old plan. Thousands who feel the difficulty prefer the fashion, and with their families live in subdivided houses, where, in many instances, the benefit of privacy, cleanliness, and comfort cannot exist, in preference to occupying dwellings which, although different in outward form, have the means of family seclusion, and all the necessities for health. It is a pity that it should be so, but such being the case it is necessary, in order to do good, to use means which, while being beneficial, will humour the prejudiced taste which exists; and credit is due to those who devise proper means of coaxing the great industrious multitude into the use of the kind of houses which are so much required. We have more than once suggested in these pages, how desirable it is to provide houses at a moderate rent which would afford the advantages of separate residences and other necessary qualities, and which would as nearly as possible present the appearance of the dwellings now in use.

We have found in one of the northern towns this principle carried out to a considerable extent in some of the new streets. The houses towards the road present a substantial-looking front, two stories high from the pavement, with rooms below looking into a very wide area. In the front of each house are two doors, fitted with knockers; one of these, by means of a distinct passage, leads to the ground-floor, and the other to the floor above, while a railed flight of steps affords entrance to the apartments below. We have thus in each house three distinct sets of rooms. The back is fashioned with galleries, something in the same manner as the model cottage which was erected by Prince Albert near the Great Exhibition,

with staircases leading to the back premises. The upper and the ground floors of those houses, which consist of three rooms each, let for 10*l.* a year each (less than 4*s.* a week), including taxes; the places below for less: and we were told that they are occupied as quickly as they can be finished, by respectable workmen, and that they pay about 8 per cent.

Every single step of this kind is encouraging, and it is unnecessary to deny that many such have been taken. Notwithstanding the enormous extent of the ignorance yet prevailing, and the amount of work required to be done, all parts of the country show the gradual admittance of the truth of those principles from which improvement must result. Twenty years ago, the great mass of even the middle and well-informed classes were not aware of the dangers by which they were beset. Glance back to former times, and it seems remarkable how people could live at all. Take, for instance, many country villages: the houses were chiefly planted in the form of a street, in the centre of which were two rows of "midden steads" and pigsties: stagnant pools of the foulest description were collected in all directions, and the stale garbage and other refuse were left in small mountains in all seasons: there were of course cesspools in the rear, for no attempt at proper drainage had been made. The interior of the houses might be kept clean, but that did not prevent the breaking out of pestilence, which in a moderate degree was looked for with the coming of the summer leaves, but which at times became so serious as to terrify the people, who were then not able to trace the disorders to their cause. Small silk bags filled with camphor were hung round the necks of the children, as if that could neutralise the vile gases which were created around their dwellings. And bad as this was, the condition of the towns was worse. We recollect seeing in an important town a large churchyard raised to the height of not less than 12 feet above the proper surface by the mouldering dead. It was managed in a way which would perhaps have surprised even the workers in Spa-fields and some metropolitan grounds. People even then used to wonder how room could be made for more. But there was no George Alfred Walker to look in and investigate their "doings." It was by no means unusual to drain this ground without disguise, and let it run along the public street to the nearest gully-hole. If an inhabitant had at that time lifted up his voice against such a practice, he would have been thought fit for a place in the neighbouring lunatic asylum. Lanes thickly surrounded this graveyard, and one narrow turning led to a series of little squares and back nooks. There was no drainage in any part, and yet perhaps not less than 200 or 300 persons inhabited the houses which were reached by the narrow archway. There was also a long building used as a school, where nearly 200 children were constantly assembled. In front of the school was a place for all the refuse. Behind was a closet, with cesspool, which was constantly overflowing, and which was the only convenience for the boys, and for a large number of the inhabitants. At times the huge dirt-heap would be removed, and the task would occupy two or three days.

When cholera broke out in the town for the first time, not a single house in this court escaped; in some instances whole families were swept away; then the houses in these confined places were not supplied with water; people had none except such as they could catch from the drip of the roofs in rainy weather, or carry from the nearest pump or conduit; and that, added to total want of drainage and the accumulation of putrid refuse, caused an atmosphere indistinguishably close and oppressive. In many instances children's schools

were kept down these courts, and lives innumerable were lost in consequence. Recollect, for another instance, the condition of the old town of Edinburgh at about the time mentioned;—the wynds, the lofty houses with common stairs, without water-supply or other means of cleanliness. Descending dust-shafts, such as those in our modern model houses, had not been thought of; no closets or water-cisterns were placed on each landing. So imperfect were the arrangements, that it was dangerous for the wayfarer to travel towards nightfall. Some of the more thoughtful of the Edinburgh dames would, it is true, considerably, from their lofty situation, exclaim, as warning to the passer-by, before throwing out the dust, "Ware below! 'ware below!" This condition of affairs led, as may be imagined, to sad effects. It required no little amount of energy and love for the picturesque at that time to explore the stair which led to the room once occupied by Smollett, and other places of interest. Parts of Edinburgh are bad enough now, but it has been greatly improved since then.

It is of the utmost consequence that a knowledge of the laws which govern human life should be given to women. A frightful loss of infant life occurs through their want of this knowledge. In a certain unhealthy district of London, during one year, forty-four deaths occurred, and of these, twenty-six who died were children under five years of age. The difference in the proportion of deaths amongst infants in various localities shows that this loss is unnecessary. Thousands of preventible deaths which occur, both in London and the provinces, from other than sanitary imperfections, are clearly to be traced to the ignorance of the mothers in the simplest principles of healthful management. In the National and other schools in which the future mothers of the next race of English workmen are being educated, attention should be given to the instruction of the young, not only in sanitary matters, but as to the structure and functions of the body. To the mothers we have to look for the education of the world. "When shall I begin the education of my child?" said a young woman once to a wise man; "it is now four years old." "Madam," he replied, "you have lost three years already. From the first smile that gleams over an infant's cheek, your opportunity begins."

There is not a more terrible sight in the dark regions of London than to see mothers giving tender infants gin and other strong drinks,—an act of kindness as they think. Their ignorance of the effects of such treatment makes them wonder when the children wither away, and speedily die before their eyes. In nine cases out of ten, amongst the poorer classes, intemperate mothers are ignorant that by their course of life they either poison their infants, or, at any rate, weaken their systems. If the common and useful knowledge to which we allude was made a more important consideration, some might thereby be prevented from committing what they would know to be acts of wickedness. Quite true it is that "in exalting the faculties of the soul, we annihilate, in a great degree, the delusion of the senses."

In many poor neighbourhoods the quantity of laudanum and other opiates sold is extraordinary: by their means the children are drugged, and this causes a considerable increase in the list of deaths; nor is this dangerous and guilty use of opiates confined to the poorer and more ignorant classes, as may be seen by the advertisements of elixirs, soothing syrups, and cordials for children, which so constantly meet the eye.

The sanitary laws by which health is promoted, should be made a branch of the national education. Take a case to exemplify its necessity which came before us quite recently. A lady selected a farm-house, in a



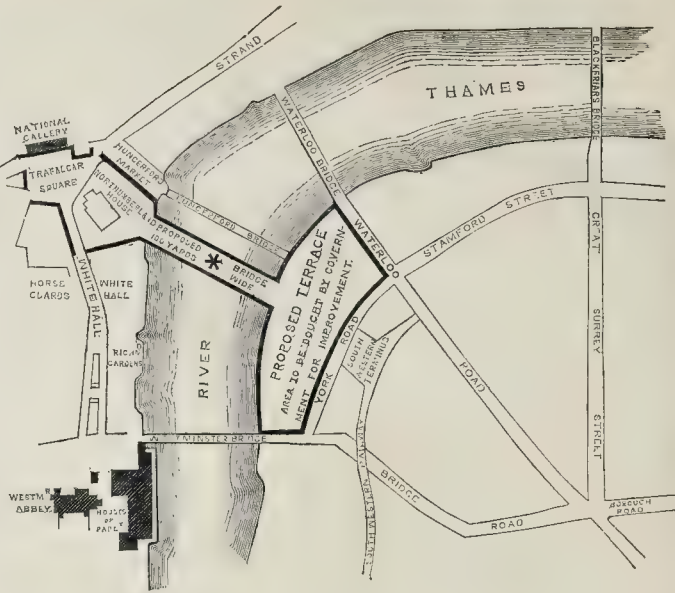
delightful part of the country, as a residence for herself and children during the summer. When there, she found that a horse-pond, which was at a short distance from the house, had an unpleasant smell; inside the rooms there was also an impure atmosphere, and it was discovered, on examination, that there was some communication by drainage between the cow-sheds and the house, and that the drains were all stopped. Men were set to work to put the derangement right, and the result of such an operation in the summer-heat may be readily imagined. As one fatal consequence, the children were stricken by fever, and in a few days *three of them died*. Now, if this lady had fortunately been in possession of the proper amount of sanitary knowledge in the choice of a place to which she might retire for a season, she would, in the first instance, have avoided the neighbourhood of a stagnant pond into which refuse ran; and when, being there, the drains were taken up, she would have escaped with her children from the house with as much activity as she would have run from a building on fire. Still, as we said before, knowledge is spreading, and life is gradually lengthening.

In the case of graveyards, a strong evidence of the advancing state of public opinion may be found in the general expression of horror which has followed the statements that have been lately made at the London Mansion-house, in connection with the disinterment of the dead in Moorfields burial-ground. It was difficult when we laboured on the subject, nine or ten years back, to make persons believe in the danger of the London graveyards. Fortunately, however, the truth was gradually impressed, and then, by the strong force of public opinion, a parliamentary enactment was obtained for the purpose of putting a stop to intramural interments.

Various circumstances have from time to time transpired in connection with closed places of sepulture to cause excitement,—the removal of coffins and their contents, to make room for the erection of dwellings; the carrying away of grave-stones and other memorials by wholesale; and, although very large sums of money have been paid for accommodation in those spots, no sooner has the source of profit ceased, than (in many instances) they have been allowed to become scenes of desolation. Graves were bought at considerable prices, on the clear understanding that they were to be treated with consideration, and were freehold. Those who purchased grave-stones and monuments, and who also paid for the privilege of fixing them over family graves, never expected that these would be carried away, and used for different purposes. Nor did they think that the bodies would be removed, the secrets of the grave fearfully exposed, and even the bones of their dearest sold. This is the private view of the subject. The public health is, however, a consideration of equal importance, and, to take the case before us, it seems ill-judged to attempt to plant a school for children on ground which has been shown by Dr. Letheby and others to be one mass of putrefaction.

The account of the condition of the bodies which were removed from Moorfields, is sickening. We acquit Mr. John Young, the architect, and Mr. Thomas Piper, jun. whose intelligence is so widely known, of voluntary contempt for public opinion, or wanton disregard of the dictates of common sense; but they seem, certainly, to have shown an amount of thoughtlessness scarcely to have been expected from them.

While upon this subject let us express a hope, that the managers of the cemeteries which have been recently opened, will avoid the practice of pit burial, the evils of which have been already so fully shown. We have had hints from good authority, that in some instances things are not working as they should in this respect. It must be borne in mind, that ere long London will march to Finchley and other places, and it would be a scandal if, with our past experience, we were to produce there that state of things from which we are now but just escaping.



A "CENTRAL PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH.

#### A "CENTRAL PLACE" IN LONDON, UNITING TRAFALGAR-SQUARE WITH THE BOROUGH, ACROSS THE WATER.

THE above small plan, for which I request indulgence, is in reference to my former letters that have appeared in pages 542, 561, 599, 604, and 636. It is restricted, of course, to a small extent as compared with London itself; nor can your readers fully view the bearing of the scheme contained in my previous letters without reference to a map of the whole metropolis. It comprehends, indeed, little more than the actual area suggested for improvement and its immediate neighbourhood.

This "Central Place" in London, uniting Trafalgar-square with the Borough, across the water, is indicated by the *broad dark line*. Its greatest extension, viz. from the National Gallery to the York-road, in the Borough, is somewhat over half a mile. It may be seen that the area on the north bank of the river would be of an irregular form, but that on the Borough side would admit of a justly symmetrical architectural treatment. This would give variety, and the bridge of 100 yards in width connecting them would afford a magnificent view of London, besides being a very grand feature in itself; and under certain regulations would relieve with facility the overdegree of traffic that now clogs the streets of the City.

The *star* in the centre of the bridge indicates the pivot of the scheme, being as near as may be the central point of present London, as is to be noticed in the Post-office district maps.

I have not indicated any lines of new streets in the Borough, such as would naturally arise out of the execution of such a plan, of a central area in the heart of London, because I desired to avoid embarrassing the simple idea with any details of further extension, especially as such details would naturally be guided by various considerations that I am unacquainted with, or, if I were, that I should not be fitted for dealing with, not having the honour to be, as I told you before, professionally an architect, although an enthusiastic admirer of that art.

You have so kindly given space to my previous letters on the above subject that I feel I should be presuming too much on your indulgence by a repetition of their contents. It will be, perhaps, therefore best simply to refer to them for the separate points which they brought under your notice.

In my first letter, page 542 of No. for Sept. 19, I set forth the general plan and bearings of the scheme as it affected the health, traffic, and adornment of the metropolis.

In my second letter, page 561 of No. for Oct. 3, I further detailed the same points, and showed some of the advantages which would directly accrue to Lam-

beth without detriment to the more aristocratic part of the town.

In my third letter, page 604 of No. for Oct. 24, I set forth expressly the architectural and general art efforts which would arise from such a treatment of the heart of London.

In my fifth letter, page 636 of No. for Nov. 7, I dwelt on the great importance of the "quadrant space" comprised between the bend of the river opposite Charing-cross, the South-Western Railway, and the Waterloo and Westminster-bridge-roads, being cleared of its present habitations and inhabitants, it being now a centre hotbed of moral and physical disease, and suggesting the purchase of this area by Government as a first step; submitting also that it would not, in any case, be an unprofitable application of public money.

Those of your readers who have been sufficiently attracted by the scheme, can easily apply to the above plan those letters which appeared before, in enumerating which I feel somewhat agitated at the space I have taken up. Their subject is one on which much more remains to be said, but I am sensible, on the other hand, that through your pages I have had quite my proportion of "say;" for the opportunity of which I am much indebted to your courtesy.

EPHILON.

#### ART IN ARCHITECTURE.\*

*Aristides' Treatise "On the Sentiments and Capabilities of various Styles,"—with the Discussion thereon.*

THE wordy war raging between the Gothicists and Classicists begins to assume now an unpardonable ferocity. This second invasion of the Goths on Classic ground promises to be almost as big in fruitful events, as the former was for the time in dire calamity, dismay, and ruin. The same elemental causes have, I am inclined to think, produced both. The Classicists, like the Romans, have ceased to display the energy of intellect, which formerly rendered them supreme masters of the world's taste; and some say their *moral* are sadly corrupted. They must bestir themselves; they must think and act once more, if they would save their beloved style from the destroying hand of the—I will not say barbarian, but invader; and when they have effected a truce with the enemy, they must turn their attention to reform at home. I have the greatest hopes that much good will result from the strife; for if the combatants do not unite, I think it likely they will gain energy, self-reliance, and natural tastes and feelings on the one side; and on the other, polish, refinement, grace, and dignity.

\* See page 633, ante.



The consideration of the claims of the rival styles, as set forth by their various supporters, together with the practical proof that is everywhere afforded of the successful application of what appears at first sight to be opposite principles; and also within the circle of my own practice, having employed the various styles accordingly as I thought they would meet the requirements of the case; and having convinced myself, that in one case one style may be used with advantage and propriety where another would fail, has led me to investigate the capabilities of each style, and I have arrived at the conclusion, that it is mainly the *sentiment* which the style expresses, that makes it suitable to the locality and purpose. Of course, there are other points to be considered which may modify the desirability of its employment—such as the materials at command, and the cost of the different descriptions of labour, but that is the principal description I have drawn; and the object of the present paper, is to string together a few thoughts relative to the sentiments which the leading styles in use are capable of expressing.

## GREEK ART.

"Ah! Greece! they love thee least who the most."—Byron.

Greek art possesses in an eminent degree abstract beauty: it is the offshoot of singularly exact minds, and is the most perfect realization of the ideal which has yet been given to the world. In it the proportions are exquisitely balanced, the lights and shades most delicately handled. The minutest details are pencilled in, and perfected with such a refined feeling for the beautiful, that it seems like the work of superior beings. Everywhere there is harmony, grace, and dignity. The very qualities to which it owes its perfection almost prohibit its use at the present day. It lacks so much pliability and naturalness, that it is almost impossible to preserve its beauties intact in applying it to modern purposes. We have ceased to think in the same strain as the ancient Greek, therefore we cannot design in the same style, without being liable to fall into the most imbecile copyism; but where we wish to express graceful dignity—dignity without presumption, and elegance without affectation—we should study the heaven-born examples left us by the Greek, seek to discover on what those qualities depend, and then embody them in our design.

The prevailing sentiment of the art of the Greeks is high intellectuality: their aim was to produce the abstract and the ideal in everything; their imagination was allowed but limited range, from the fastidiousness of their taste; but whatever beauties they produced they perfected with the utmost precision and exactness. They aspired to reach the central essence of beauty; the utmost perfection of external form, and the idealization of the generic nature of things; in a word, they aimed at being gods, not men. They never could descend to the portrayal of homely virtues or vices, or to the simple illustration of the great book of nature: everything good or bad, must needs be tinged with ideal excellence. It was beneath their wisdom to see Nature as she is, they saw her only as she ought to appear according to their predilections. Their philosophy even aims at superhuman effort, for they would not, in their mechanism of life, allow for friction. In everything they sought excellence—all nature cried out aloud to them for excellence. Their sculpture was but the portrayal of abstract qualities—in the "Laocoon" lay the representation of intense pain; "Jupiter Olympus" was but the incarnation of godlike majesty; the "Hercules" that of the greatest physical strength; and "Venus" that of sensuous beauty. Characteristic distinction of species they in all cases exaggerated; marking it in the most decided manner. They sought with fervour abstract truths, but their wisdom at the present day would be considered impracticable. The tree sent out majestic branches and exuberant foliage, but of fruit there was none: other elements were required in the soil, in default of which the tree withered and died: it had lived its natural term of life, became exhausted, and could produce no more.

From the few characteristics of the art which I have attempted to point out, it will be understood that to try to introduce it again in its pristine purity would be a hopeless task. When the public first became acquainted with the style, they were enraptured and amazed: never had they seen anything so perfect, so harmonious, or so refined: such grace and dignity had not before been conceived by the most enthralled votary of art. Admiration led to imitation, and not only were the ancient forms reproduced, but they were placed in singularly inappropriate situations. Enthusiasm gave place to satiety, and then most people agreed, that however beautiful the style was, considered abstractedly, it did not comply with our modern wants. Continued repetition had become tiresome: Centaurs, Minerva, and Neptune were very well in their way; beautiful when examined in connection with Greek mythology, or

even as mere forms; but beyond that they were discovered to have no connection with our sympathies or ideas: very good in a museum, but of no meaning on a modern building. The public soon found out that we were copyists of the worst description, devoid of all original thought, and that is a failing above all others that they have the least sympathy with. Art was in truth becoming a dead letter. What would be thought if we imitated to minute mannerism the poetry of Homer, Milton, or even Pope? That would have been much more creditable, for we should even have had some new thoughts. I think I can only compare the copyism that then prevailed to the reprint of the works in another form; or a Bible with illustrations taken from the "Iliad." No more striking illustration can be pointed out of the evil of adopting a style without the introduction of new elements, than the mania for Greek architecture which prevailed some fifty years ago.

As the prevailing sentiment of Greek art is the ennoblement and ennoblement of the intellect, expressing simple dignity, it is well fitted for halls of justice, representative chambers, and buildings appropriated to science. But in the application of the style we must not imitate; we must enter into the spirit of it—a difficult thing to do. If the artist-architect cannot strictly adhere to the style, and be original at the same time, he may yet sympathise with it so much as to imbue his work with similar sentiments, and thus ennoble and refine his conceptions, placing it nearly on a level with the ancient masterpieces. Italian and Roman architecture may in this manner be purged of much of their grossness, and their details corrected and dignified by the introduction of the Greek harmonic excellencies; it being a most improving style for study, if not for imitation.

The inappropriateness of certain styles, excepting for special purposes, may be forcibly shown by trying to conceive—a Grecian prison, or, still better, a Grecian workhouse! At one time Grecian lodges and park entrances were common; indeed, I now recollect one which has not been built ten years! a miniature copy of a temple, with rough plate-glass let into one or two of the metopes, to serve for windows, and, oh shade of Pericles! the chimney-stack crowned with slate tops of the usual pattern. Also I could mention an octastyle chapel, of the true Amphiprostyle type, with the complacency, if it may be so called, filled up with a flat skylight through which the wind and rain play with melancholy and funeral coldness. Something certainly might be done exceedingly tasteful, in the way of villas and lodges, if designed in the proper spirit, not adhering too strictly to the style. We must conceive the outline of the general arrangement first; and then putting ourselves into the frame of mind we might suppose a Greek to be in, were he in our position, try and give expression of purpose to the roughly-conceived design; the details will then work themselves out consistently as a matter of course. The style will, however, harmonize better with flat or gently undulating scenery, than square rocky masses, and possesses such inflexibility, that it is very difficult to handle with freedom.

One of the ugliest features in our modern pseudo-classic dwellings, and which shows the imbecility and red-tapeism still clinging to us, is our treatment of chimney stacks—no, not shafts, for they are ignored. What might be made, if our architects would strike their fetters off, a source of beauty and picturesqueness, becomes transformed into the most villainously ugly appendage that the imagination could contrive, when under the influence of the nightmare. The modern Italian *improvisatore*, when he handles the chimneys, must feel his weakness—he cannot make them rhyme: do what he will,—group them, raise them, lower them,—there they still stick out in bold contrast to the rest of the building, the very incarnation of ugliness: he gives up the attempt in despair, letting them jangle in as they best may; he probably crowns them with a cornice so heavy, that it is perfectly miraculous that the 4½-inch brickwork is not ground to brickdust. On this he must needs place his "mug," to prevent the wind gathered up by the top surface of the aforesaid cornice going down the flue in a gusty volume: the wind collected by the flue, opposite surface of the roof still gets down the flue. Of course the peace and happiness of the inmates, of together with their best furniture, are entirely destroyed; but what of that? They are like Finnon haddock, accustomed to be smoked. Perhaps the unfortunate rebel, he pulls up the floor—he takes out the grate, and many other are the attempts he makes: perhaps with the help of a tube at the top, 10 feet or 12 feet high, and a fire-plate at the bottom; together with a large annual consumption of coals, it may be he succeeds. I feel I am departing from my subject, but I must go on, it is such an exciting topic. Am I to be told that with proper provision at first; with a flue of equal section

all the way up, free from cavities or receptacles for cold air, and not of too large an area; with the shaft carried up well above all surrounding objects, and each shaft distinct, if grouped: am I to be told, with a rueful countenance, that the chimney-doctor will still be needed? Those of frequent failure will give an affirmative: "Yes: for the laws by which chimneys smoke are as fickle as the elements, and the unruly household Lares require frequent coaxing." To such I can only answer, try the plan I have here proposed.

Another great defect in modern Classic dwellings—though not confined to them alone—is the attempt to keep the roof flatter than is necessary for protection from the wind and rain—for the due fulfilment of its purpose. Everything above the cornice appears to be considered an eyesore, and many are the schemes devised for keeping the roof and chimneys out of sight; all of which may be summed up in one word,—failure. Utility is sacrificed to false taste, for the essential feature of the building is wanting; or at least we can see that it is looked upon at the best as an ugly necessity.

It is such proceedings as these that have brought odium upon all connected with Classical architecture: one or two among many of the shams thought necessary to preserve purity and horizontality.

The outline of the design should be the first consideration, for it is the most obvious feature of the whole. A well-developed, firm, and meaning outline gives life to the mass, detaching it boldly from surrounding objects. What can be more unmeaningly ugly, or more humiliating, than the mis-shapen, unsightly heaps of bricks and mortar, under which the ground in our parks groans? Misnamed Italian architecture. A picturesque skyline is certainly not necessary in all situations, the reverse being the case in many instances; for the tendency of picturesqueness is in opposition to that of Classicism. All I contend for is truth of purpose (a question we will discuss in another place). The Greeks would certainly not have acted as many of us have done: they would have adapted their art to modern wants, preserving its ruling æsthetic principles intact, viz. symmetry of parts, simplicity of plan, breadth of effect, and refinement of detail. It is this that gives majesty, grace, and matchless beauty to all the productions of their ardent and well-balanced minds: which has helped them to excel all others, and give to the world the most perfect style extant. But it is hoping against hope to expect good architecture when art is a mercenary trade, and the soulless speculative builder usurps the place of the architect: when everything is looked on with mere utilitarian eyes, and the proprietor cannot distinguish between moderately good and villainously bad, but is willing to pay the same price for both.

I am afraid I have said more than the limited applicability of the style will warrant; but many of the remarks are equally applicable to all styles. I would wish my hearers, before finishing the first part of my paper, to bear in mind that it is the sentiment of the style which fits it for the expression of purpose. The style chosen must harmonize with the site. A Grecian house in a Gothic garden, or vice versa, would offend all tastes. The ground about a Classic dwelling must be arranged with a certain formality and an attention to the principles previously enunciated. I am aware that many will not give to Greek architecture even the limited range which I have assigned to it; but to my mind, nothing can be more characteristic and appropriate to a man of refinement and learning, and nothing so congenial to his tastes, as the residence in a suburban villa designed on truly Greek principles.

*Aristides.*—Now, gentlemen, what do you think of the first instalment of the subject?

*Rufakinus.*—I think that you have done a great deal more than justice to it. To my taste nothing can be more laudable, nothing so tiresome, wearying, or monotonous, as Greek art. The regularity and method so suitable to you is to me in the last degree oppressive. The constructive principle is bad, and the whole utterly false and untrue to nature.

*Aristides.*—I will not build you a house in that style. I would suit the character of the house to that of the mind; the furniture of the design should express the tastes of the owner. You should have a more imaginative residence, a more picturesque, quaint abode, with a spice of solemnity about it, but without showing a playful effect of light and shade, entirely unartificial, without one particle of formality in the whole composition.

*Donaldo.*—You understand well how to apply the medicine of the mind: there are many who would grout and growl over their miserable fate in being compelled to live in an unattractive age, were their clients to object to their pet style: such is the effect of bigotry.

*Aristides.*—Under such circumstances it is impossible that they could produce a good work; their souls



rebel against it. Far better would it be if the gentlemen in question would acquire a little pliability of disposition, and adapt themselves more to the humours of their clients. Every man has a right to a little forbearance, considering how tastes differ, and the likelihood of his not being much wrong either, as I have been attempting to prove. Instead of setting up their backs and showing their bristles like hedgehogs, would it not be better for them to try and discover the inward sympathies of their clients, and give suitable expression to them? They should conceive for the proprietor, but finish for the artist. With your permission, gentlemen, if you are not already weary of the subject, I will proceed.

#### ROMAN ARCHITECTURE.

Roman architecture is as correct an exponent of the feelings and moving passions of that nation as that of the Greeks is of theirs. Pomp, magnificence, grandeur, luxury, display, characterised all their tastes. All that could ennoble the warlike and energetic race was called in to give its aid in perpetuating the victories gained by them. Worshipping military glory—everything gave place to that ruling passion. Science was cultivated to advance the art of war; to make roads, to construct machines, to throw bridges over rivers; or, on more peaceful occasions, to balance aloft ponderous vaults and domes, under which the gods were propitiated, or the glorious achievements of the empire consecrated. As the taste for luxury and ease advanced with conquest, then were the splendid baths, the mighty aqueducts, the colossal amphitheatres, and magnificent places erected. Now was the summit of their greatness reached: slowly the enervating nature of their amusements and habits sapped the foundations of their already overgrown dominions, and in their fall the civilization of centuries became a thing of the past.

With much that is splendid, superb, and vigorous in their architecture, there is mixed a leaven of folly, extravagance, and vulgarity. Lacking the chaste refinement of the Greek, they yet partly compensated for it by greater versatility of talent and their superior attainments in science, thus enlarging the scope of their art. The invention of the arch introduced a lever in the system which the Greeks never possessed, or never appreciated. It is a feature giving power and elegance to their architecture, and placing at the disposal of the artist and man of science increased resources, facilitating those engineering operations which the Romans delighted in,—emboldening the architect in his conceptions, and affording a never-failing resource in structural difficulties.

The vast scale of the Roman works throw the Greek productions into the shade: it is as a giant compared to a pigmy. The grandeur only attainable by size being denied the Greeks, they did all that mortals could do with their limited means, producing, in a very small edifice, a degree of the sublime far excelling that displayed in a Roman work of the same size. The employment of the arch principle led, by sure steps, to the adoption of the vault and dome, and the solidity, science, and skill displayed in Roman work, have never been excelled. The symmetry of interior effect gained by Roman vaulting is worthy of all praise, and from which our engineers, with their boasted skill, may yet gain much knowledge in architectural statics. With geometrical symmetry, which our own men carried to such perfection, they combined sound construction, very different to the thought and money sparing labour of the present day—the works of engineers who have no knowledge, architects who have no taste, and contractors who have no souls. Geometric harmony is a study so much neglected, that I cannot do better than recommend its more frequent introduction in our own works: it is this that unites in elegant combination the various parts of a design, giving due proportions and balance to each; showing at a glance that it is the work of a man of knowledge, accuracy, and science—not that of a presumptuous bungler; a completed idea—not an undigested mass of crudities, faulty in construction, and clumsy in design. Modern engineers, certainly, have done wonders in their way, but they are yet only in the second stage of their art: requiring the perfecting mastery of exact calculation and structural elegance, to render their works complete: in elegance let them take a lesson from the Romans.

The capabilities of the style are much more varied than the Greek; and having many points of resemblance to the Romans in our wants and tastes, though there are striking characteristic differences, it is much more suited to our requirements. For public buildings and civic institutions it is eminently adapted; for domestic purposes Italian is better, which is after all but a modification of the Roman.

The sentiments displayed most prominently in Roman architecture are power and grandeur: sentiments very appropriate for the expression of the wealth and intelligence of an enterprising commercial country. It also possesses an enlarged scope for invention, and for the display of artistic embellishment.

ment of an original kind. Notwithstanding, it is essentially an artificial style, more in consonance with the occupations of cities than with natural or rural scenery. When employed it should be on a large scale, for it has not the innate sublimity of the Greek, and on the other hand will not bear breaking up into small masses; a measure necessary for the picturesque. All good Roman work must aim at richness without exuberance, and grandeur without pretentiousness: while we emulate their magnificence, we must be discriminate in selection, rejecting all meretricious ornament and adventitious aid. Avoiding baldness, we must still not cover every inch of surface with enrichment, destroying one of the highest qualities in art, viz.—breadth of effect. That symmetrical arrangement of parts and counterparts demanded in Grecian architecture, need not in Roman be so strictly adhered to: it is not essentially necessary that the two ends of an edifice should be alike, or that both sides should be similar, or that the plan should be a regular parallelogram, or a complete circle, or indeed of any simple geometric figure: still there should be a certain degree of symmetrical harmony governing the whole. The several masses of the composition should be grouped in reference to a large and central feature, with an eye to a bold and pleasing play of light and shade; they should be proportionate, not interfering with each other, but helping the general effect. Due emphasis should be laid on the main horizontal divisions of the design, which should again be judiciously embellished and enlivened with suitable conventional ornament and spirited mouldings. The laws of composition require that all the parts unite in giving oneness of purpose to the structure; it being quite incorrect to arrange it so that it may be divided in two, each complete in itself. Still more tasteless is it to jumble together a mass of materials, good perhaps in themselves, but having no common connection or homogeneity of meaning. It is necessary for the dignity of an edifice of any importance, that it be placed on a commanding stylobate, that it have a bold base and massive cornice, and, in some cases, a crowning parapet. The pyramidal principle (so strongly insisted upon by Bartholomew) must never be neglected where we wish to give elegance of contour to our work; and, in conclusion, I would point out to students in the art that it is of the utmost importance they should aim at finish in all classic work, and would guard them against being led away by the sketchy picturesqueness prevalent in the designs of many of our young rising architects.

*Archimedes*.—Allow me to say that you have made a most unwarranted attack upon engineers in general. The worst which can be said of them is that they consider "utility" to be the primary object of their profession, and I am willing to brave being set down by "men of taste," when I say that they are correct in considering it to be so. I should like to know in what position the world would have been now if it had been left to the guidance of the so-called "men of taste?" Why we should have been driving to London on stage-coaches, because, forsooth, they are more picturesque; or, perhaps, sending our troops to India in Dutch gallies by reason of their not being so formally constructed as our present clippers,—and look better in a sea piece!

*Aristides*.—I am extremely sorry if from the tone of my remarks they can be construed into such a meaning as you have chosen to put on them. I did not say "utility" must not be considered the primary object of all engineering; indeed, it is so of all the useful arts, as the name implies; but I must insist upon their not totally ignoring the existence of other beauties besides that of utility. My intention was to point out where they might improve their vast conceptions; and I still adhere to the notion, however absurd, that the study of architectonic proportion would enlighten their too matter-of-fact minds, and render their productions more compact and beautiful. No one can deny that it would be an advantage to the public sight and pocket, if those clumsy appendages of useless piers, enormous caps, ugly mouldings, and unmeaning columns and embellishments, attached to, but not having the slightest connection with, the bridges they disfigure, were displaced to make room for more meaning and appropriate embellishment. Though utility is the primary object of such works, beauty is an important secondary one, and perfection cannot be obtained without the study of it.

*Garblentum*.—Engineers are a soulless race; and however I may disagree with you on the point of styles, I most cordially re-echo the sentiments you have just expressed.

*Rufskinius*.—Your "sentiments" regarding Roman art are as wide of the truth as your previous praise of Grecian is sickening. In some respects they may have displayed more science than the Greek; but for constructive truth they had no feeling. Crazy architraves, backed up by arches to assist them to carry their own weight, are abhorrent in principle; and in

this species of structure the Romans were adepts. Their taste in ornament was even more faulty and licentious; and they did not embody in any part of their architecture that honesty of intention so characteristic of Englishmen; therefore, according to your own showing, it is unfit for our use.

*Aristides*.—Pardon me: the cry for plain unvarnished reality, in material and construction, proceeds from very much the same cause as the "correctness" of style demanded by our ancient tutors. Both are no doubt very good to a certain extent; but push them beyond their legitimate limits, and they end in disgusting affectation. The absurdities and follies which art critics of the present day have been attempting to thrust down the public throat are unendurable. The mistakes and inconsistencies they fall into are the result of undue appreciation of some one principle, which blinds them to all others. No man in his senses would attempt to practically carry out the principle of truthfulness to the extent demanded by them; they would not themselves! It has become much too common to write fine things for the sake of writing them, never being intended that they should be reduced to practice. To carry the principle of truthfulness to the extent fashion demands, would lead to the condemnation of all structural concealment. Is it consistent to object to support from concealed arches, ties, or beams in the case of architraves, and in the same breath allow chains to be buried in cupolas to counteract their thrust? If we examine nature (another thing we are requested to do), we see that in the majority of instances structure is concealed—in some indicated, but in none brought out so prominently before the eye as the too scrupulously conscientious truth worshippers wish us to believe is necessary in good architecture. Another fashion lately in vogue, teaches us that good architecture can be produced on utilitarian principles only, without attention to aesthetics. A roof must only (by this theory) be inclined so much as will best fit for carrying off the water falling upon it; and no attention need be paid to the functions it fulfils in carrying out the general outline of the building; this would prohibit most Gothic roofs and all slated terraces. On the same principle, it is unnecessary to give an arch a greater height than will enable it to support the weight piled above it; or it is equally unnecessary to form a window narrower than can be conveniently executed with due attention to stability; or a door higher than will admit a tall man, or wider than will allow two ladies to pass, in full crinolene dress. A hundred more "cases in point" may be cited to which the principle will logically lead if carried out to its full extent; and I would ask, what will become of the much-vaunted Gothic, if measured only by the principles laid down by its own over-ardent admirers? The merest tyro, who has but once attempted a Gothic church, will see the fallacy of such reasonings as these, if he be not blindly intent upon supporting the "good cause" at any price. Truthfulness assuredly is characteristic of Gothic structure; but mere utilitarianism is not; for there is an aesthetic law that must be fulfilled even at the expense of convenience, and that is the law of verticality; for demanding that the leading lines of the edifice should be vertical; prohibits width in the windows, flatness in the roof, and lowness in the arch. In all great works, not alone in the Gothic, but equally in other styles, some sacrifice must be offered up to the aesthetic principle. St. Paul's possesses an outline of unrivalled nobility and elegance; but that effect has been obtained by carrying the outer dome up far above the inner one, leaving a void between of no utility whatever. It has, however, been well observed by Mr. Allom, that this arrangement was called for to give effect both to the interior and exterior; consequently, the one has been made proportionate, the other noble and commanding. Who will deny that this is not at variance with utilitarian doctrines? The crowning point of such philosophy has been surmounted by Mr. Fergusson, who half condemns Gothic vaulting for not effecting two purposes—serving for both a ceiling and a roof: to such extremely ridiculous results does any doctrine lead, when pushed beyond its legitimate limits.

*Rufskinius*.—I cannot agree with you on any one point: if architecture transgresses in truthfulness, as you have represented it to do in many cases, it is not Gothic, it is a bastard style, and I totally condemn it.

*Garblentum*.—I also must take exception to your remarks, especially with regard to Gothic windows, which I boldly affirm are not the least bit narrower than the strictest utilitarian could desire, if he gave stability the consideration it merits. Are they not more consistent than the great gaping openings in modern buildings, miscalled windows, through which an army might be marched with ease?—and is not a Gothic arch far more scientifically structural than the cramped and crazy architraves which disgrace our modern pseudo-classic porticoes; a shabby artifice, repugnant to all correct feeling.



*Aristides.*—Then what do you think of the Pompeians using wooden beams for architraves over their arcostyle colonades? I think that we have no necessity to resort to such an expedient now, for the same purpose may be effected in a much better manner with iron.

*Rufskinius.*—All such shams are beneath contempt.  
*Aristides.*—Our opinions on art are so widely divergent that I fear I shall only bore you by proceeding with my paper.

*Garblentum.*—Oh, dear no! You will presently be getting to the most interesting part of your paper: we wish to hear what you have to say on Gothic architecture.

*Aristides.*—That is my next subject, so I will proceed.

#### GOthic ARCHITECTURE.

There cannot be expressed two more opposite sentiments than are embodied in the rival styles of the day—Gothic and Classic: whereas the last depends for its effect on our feelings for artificial perfection, without any direct imitation of nature, but rather uniformity and conventional treatment: the latter is, in its inherent excellences, dependent on, and an exponent of, the principles which regulate natural beauty. It is the unpretentious poetic offspring of unsophisticated nature, disrobed of all artificiality and affected refinement; the homely soul of man laid bare; the genuine effusion of the spirit which sees this great and glorious outer world in a loving, trusting, hopeful, mysterious, and imaginative mood. Such an architecture must be peculiarly suited for Christian and ecclesiastical purposes; for all is open, all is true—nothing glossed over for mere showy effect or finisy tameness. It has not been insipidly termed, by some who feel the full force of these qualities, Christian architecture; but there are those that have no sympathy with the style—that do not understand it, and never will—and are, consequently, disposed to cavil at the interpretation, and call such views orthodoxal. He who has felt the solemn soul-inspiring effect of the interior of a Gothic cathedral; who has felt grave, humble, subdued, and awe-stricken, in the presence of the spirit of our good and true ancestors; who has communed with the dead of bygone ages in the gloomy shade of mediæval-vaulted canopies—*he* will not be disposed to question the fitness of the style for religious purposes, or its power of raising our minds above worldly desires and earthly vanities, freeing us for the time from the subjection of those cares which lie cankering in our hearts, bringing with them only desolation and trouble. Show us that this peculiar power exists in Classic architecture, and that it is as capable of exciting emotions as pure and lovely as these; then we shall be at liberty to ridicule the term Christian art, and employ in preference the Classic style with all its so-called superior conveniences and modern appliances.

Not only is the Gothic peculiarly suited for religious sympathies, but it is a style that harmonises admirably with natural scenery. The unaffected irregularity of outline and varied disposition of masses allowable in a composition in this style,—arising from a natural and conformal arrangement of the several parts, to their respective purposes and objects, in strong contrast to the opposite course, which must be adopted in the treatment of all Classic styles, and the duplication of members to preserve symmetry, renders it singularly in keeping with the works of nature, affording relief to a mind harassed and annoyed with the vexatious realities and formal ceremonies of this artificial modern life. It is here, surrounded by works of Gothic art, giving zest to nature's charms, that the weary mind, in quest of quiet enjoyment, will find true repose. Grecian art may suit the active intellectual mind; Roman, the energetic mind, and sumptuous luxury of the man of wealth; but for the mind of nature's true poetic cast, which feels a joyous buoyancy in communing with the varied beauties of the picturesque, Gothic art is a sympathetic link with the outer world. No other art is so pliant, so versatile, and so imaginative, or so true: its sentiment is poetry, and its principle truth. Let not the soulless criticisms of "practical men" drive from the heart of the enthusiastic lover of the natural, all belief in the living healthy vitality of the style, by the hackneyed assertion that it is inapplicable to the present wants of society. Such opinions are only held by those who are in the way of realising the spirit of the style, and re-adapting it to the demands of modern civilization.

Just as the Classic styles may with propriety be termed the grand and epic in art, so may the Gothic with quite as much propriety be called the simply poetical. There exists the same distinction of character between the poems and literature of antiquity and the literature of life, feelings, and sentiments in vogue at the present time, as there does between Classic and Gothic art; and it will be as vain to attempt to warp the tastes which individuals manifest in favour of one or the other of these styles, as it

would be to divert the course of the great ocean currents. There are scarcely two feelings common to both styles; and while minds continue to be constituted so differently, and organisations are so various, it is the height of absurdity to attempt to unite the antipodes in taste. A purely demonstrative proposition may be proved to all by force of analysis, but art is dependent upon the inward feeling of beauty: it is a sentiment, not a mathematical problem. What is the value of art—of what good is it? say thousands of people: a question difficult to answer when those who ask can never ascend to an appreciation of anything beyond material comfort. Of what use is music, say those who have no ear for it? and to such as they it is of no use, and never can be. It is the same with the advocates of one or other of the styles, which their organization and early training fits them best for appreciating; they cannot see beauty in any other: their ears have become so accustomed to listen to one tune that all other airs are thrown away upon them. Argument in such a case is a waste of words; if one man likes pork and another prefers beef, no amount of reasoning will convince either of them that his favourite dish is not the best. It is the same in art: all deductions are superfluous when we cannot agree upon the premises.

If it be said that, notwithstanding all this, I do appreciate the various styles for the time, purposes, and plans, for which they were at first contrived—but only such a one is now applicable—I answer that our age is retrospective as well as progressive; while we borrow ideas from the past, we introduce new elements for the future. No style in its integrity is applicable, because in none do the same circumstances exist. We must mould, bend, re-shape, and re-arrange the materials we have at hand, and in doing so new phases of style will develop themselves in every respect applicable. We may talk, write, dispute, and revile each other, and still the whole circle of the styles will be practical; better to turn our attention to finding out the peculiar fitness of each than waste our breath in disputations about the propriety of employing one.

There has been another fallacy walking abroad of late. Those who have fallen into the difficulty of not knowing which to choose from among the rival claimants have attempted, in a very loose and unstable manner, to prop up a theory which would teach us to pay no attention to any style. Such a course can only be followed in imagination; to attempt to reduce it to practice, would be a herculean task, and would result in a most unmeaning assemblage of borrowed ideas. It could only be paralleled by attempting to build a pyramid from the apex, or a house without a foundation. The process by which we evolve new forms is too laborious and long to admit of being gone through in the short space of time allotted for the production of one design, or even of many. So much depends upon fortuitous suggestions and fleeting conceptions, that at the utmost we can only hope to effect variations on some style taken as a basis—not to produce a new one. If it were not so, we might invent a new style in every design we made; a result so impossible, that every one will see the absurdity of it. Even supposing a will see the absurdity of it. Even supposing a genius great enough arose, and invented one entirely new, of what advantage would it be? All the smaller fry would have in a measure to copy him; where, then, would any style be of greater originality? On the other hand, if no style is taken as a basis, we produce a mere jumble—an unfortuitous concourse of atoms.

One of the great difficulties urged by anti-Gothicists in the way of the employment of Gothic for domestic purposes, is the unmanageableness of the window-openings. They say, with truth, that broad spaces of empty glass are inadmissible, from the necessity of employing mullions for the subdivision of the opening, plying mullions for the subdivision of the opening, plying mullions for the subdivision of the opening, plying mullions for the subdivision of the opening. This some of the ultra-Gothicists flatly deny; but with very little show of reason. The mullion is as essential to the preservation of Gothic character, as the architrave, frieze, and cornice are to that of the Classic. The perpendicularity of the style demands that the leading features should be elongated vertically, both with respect to voids and solids; in the window it is the void that leads the eye. There is also the difficulty of another principle to contend with, which it is essential to keep in view when designing in Gothic. I mean the opposite one to that expressed by the term *breadth*, and which requires that the most striking features should be subdivided—in some cases diaped, and that no broad surfaces, not even in the stones, taken separately, should be allowed. In this, as in most other instances, the two styles are in exact opposition; for the larger the surfaces of the stones in a Classic structure, provided they are not disproportionate to the thickness of the wall, or deep enough to destroy the horizontality, the better the effect. Plain surface must be very sparingly introduced in Gothic work; whereas, in Classic, it is essential for repose. If there happens to be a large extent of unapplied wall space in a Gothic design, it

should be crested principally with rough, irregular stone, or else it must have introduced in it scutcheon, niches, or other conventional ornaments belonging to the style. I do not wish it to be understood that I consider solidity of piers and walls contrary to the spirit of the style; the reverse, rather, is my opinion, for a certain degree of solidity is absolutely requisite for the repose of the structure; but it is the repose due to quantity, a very different quality to the Classic breadth before alluded to. I know that the Tudor will be cited against me, showing that it is of little consequence whether the stones are laid smooth and regular, or irregular, provided the design is a good one; but I would beg leave to suggest that Tudor can hardly, strictly speaking, be called Gothic, so much formality and carpenters' work having crept into it as to destroy, in a measure, the spirit of the style; and in that case it only expresses what may be said much better in another style.

There have been many attempts to get over the difficulty of introducing shades and preserving the mullions, and nearly all have failed. Mr. Becholtz gives an example of how the same may be done, but it is simply barbarous. Why casements should be so much objected to I am unable to account for. If they can be constructed to keep out the wet—and that they can be admits of no doubt—why should they not be used? Presuming that the object of having windows to open is to admit air, when it is required for coolness or ventilation, it cannot be disputed but that a system of casements is equal to that requirement. Of course, if furniture is to be pulled through the window, all our arguments fall to the ground; but in a gentleman's house that is unnecessary! There is another much-talked-of disadvantage arising from the employment of mullions, and that is, that it cuts up the prospect; but this is more imaginary than real. The question hinges on this: do we prefer calm or ostentation? If the latter, by no means adopt Gothic; if the former, Gothic by all means; for the separation and division of the prospect by the mullions allows of a quiet contemplation of it in parts: if we would see the whole, we can approach nearer. To be in the centre of a room opposite an immense window is like living out of doors, and in winter is excessively cheerless. If the same window be divided in the Gothic fashion, we, on the contrary, feel as if in a house—in fact, at home. There are no doubt advantages and disadvantages in both; all we can do is to choose as our tastes prompt us. Be not afraid of being called a man of no taste; that is a bugbear especially reserved for the ignorant.

Of what then shall we say Gothic architecture is capable? Is it to command applause, to inspire us with a supreme admiration of our fancied greatness, or to lead us to worship the intellect of man? No! to draw us imperceptibly to acknowledge the greatness and goodness of the God of nature; to lead us to sympathize with the true and unaffected beauties and infinite variety of effects which are constantly surrounding us, enlarging the range of our knowledge, and sharpening our appetite for the natural; not being given for us to look upon as so many useless bangles; but for elevating our aspirations and enlightening our views, to promote our enjoyments and purify our hearts. I must pause awhile.

#### ON SCIENTIFIC INSTITUTIONS, IN CONNECTION WITH THE DEPARTMENT OF SCIENCE AND ART.

THIS was the subject taken by Dr. Lyon Playfair, C.B., for the third of the series of lectures now in course of delivery in the theatre of the Brompton Museum, and was read by him on Monday evening, the 30th ult. The theatre was full to overflowing, and this was the case, we may mention, on the previous occasions. In the neighbourhood, especially, the lectures are regarded with great interest, and the hope is pretty loudly expressed that others will follow those already announced.

The lecturer first considered the institutions established in the capitals of the three kingdoms, and then the schools in the provinces. Foreign countries, he said, had, many years since, perceived that it was necessary, for the popular apprehension of the connection of the sciences with the industrial arts, to have supplemental museums, connecting the abstract sciences with their applications to the usual industries of the country. It was in 1835 that the necessity for such museums in England was formally brought before Government by a man of rare intelligence and singular perseverance, the late Sir Henry de la Beche. This eminent geologist was then in charge of the geological survey, which, following in the footsteps of the trigonometrical survey, lays down upon maps the geological and mineral features of the various districts. Sir Henry, in his memorial to the then Chancellor of the Exchequer (Lord Montagu), suggested that a collection should be formed "containing specimens of the various mineral substances used for roads, in constructing public works or build-



ing, employed for useful purposes, or from which useful metals were extracted, and that it should be arranged with every reference to instruction," as by the adoption of this course "a large amount of information which was scattered might be condensed, and those interested enabled to judge how far our known mineral wealth might be rendered available for any undertaking they are required to direct, or may be anxious to promote for the good or ornament of their country."

The collections thus indicated, having commenced in 1835, had assumed such form in 1837, that the Government gave some rooms in Craig's-court, Charing-cross, for their reception, where they accumulated so rapidly, that first one house and then two houses became full, and finally, growing in importance and extent much beyond the capacity of the Government houses in Craig's-court, the handsome structure in Jermyn-street, now known as the Museum of Practical Geology and Government School of Mines, was erected. The Mining School was described; the Royal Dublin Society, and other establishments; and he then traced the establishment of the Special Schools of Science, in connection with this Department, which now exist in London, Poplar, Bristol, Birmingham, Leeds, Truro, Stoke-upon-Trent, Wigan, and Aberdeen, some, in fact all, successful as to the disposition of the working-classes to support them; but even those most numerously attended and increasing in numbers running the risk of abandonment at any time, because, with one or two exceptions, the expenses are greater than the receipts.

The desire of the artisan for a secondary education is not new. He has for the last quarter of a century laboured to attain it through the agency of institutions devoted to his own class, but has failed. Let us pause to reflect upon the reasons why he wants it, and why he has not succeeded in supplying his want.

In recent years, the most meritorious efforts have been made by the public, with the co-operation of the State, to establish primary schools; but it has been too much the practice to consider these as sufficient for the education of the people. The public have laboured zealously to bring together the materials out of which an educational edifice may in future be constructed, and have well laid some of the stones which are to constitute its foundation. Milton describes a complete and liberal education to be that "which fits a man to perform justly, skilfully, and magnanimously all the offices, private and public, both of peace and war." Whether the primary schools of any country, and particularly of this country, are calculated to answer the objects thus demanded of education, will be seen by a little consideration.

The lecture system, he thought, had failed, and so what had been called Working Men's Colleges had been formed.

The first requirement in the education of the working man is to give him his position as an intellectual being, by enabling him to understand what he is doing, that is, to explain to him the natural laws upon which his labour depends. It is not sufficient that he should be enabled to fulfil his duty: his dignity as a man requires that he should be enabled to fulfil that duty with understanding and intelligence. If public education be aimed at the first point only, all it does is to fix a handle to a tool, or a framework to a machine: the second aim ensures that the machine is the most perfect of its kind, adapted to fulfil all that is required of it. You will understand, then, that while I do not undervalue one branch of knowledge professed at these Working Men's Colleges, I think they miss the primary means of elevating the working man, because they do not concentrate their energies on a few branches of knowledge bearing on his daily life. The most successful school for working men has probably been the School of Arts in Edinburgh, founded by Mr. Leonard Horner: at all events, it can boast of a larger number of pupils, and a duration of existence not possessed by any other secondary school for artisans. Its success has been mainly owing to the few subjects which it professes,—these being confined originally to mathematical science, chemistry, and natural philosophy; although, at the request of the pupils who found that they were deficient in elementary knowledge, English, French, and drawing have since been added. The administrative duties of its council (which, I should mention, consists only of gentlemen and master-mechanics, not workmen) are within control: its teachers are qualified and paid, and the students have within a limited area a choice of the sciences embraced in the manufactures of their city. I have now, perhaps, said sufficient to show wherein I think the cause of failure lay, when the lecture system of the institutions gave way to a school system, founded, however, not on the limited design of a school, but on the wide comprehensiveness of a university.

The next fundamental difficulty is the want of appreciation on the part of artisans, as a body, for instruction in the science of their occupations. No doubt this exists largely, but still not to an extent so uni-

versal as is supposed; for in the schools of this department we find men willing enough to take advantage of them, when we are able to found them on such terms of admission as working men might fairly be expected to pay. The removal to this obstacle rests mainly with the state, for its present existence is perhaps due to the fact that little or no taste for natural knowledge is given in our primary schools, supported so largely by state endowments. If some of the verbalism of schools were made to yield to the acquirement of scientific truths—if words were to give way to ideas—then the taste for science would be imbued into the boy, and a demand for its further gratification would arise when he became a man. Our primary schools have a large task assigned to them in the few years which the child of the working man devotes to instruction. The introduction of science, as a special branch of education, would, therefore, be attended with great difficulties. But it would be an easy thing for an apt teacher to gather round his lessons in geography much that is most attractive in the study of nature, instead of cramming the children with the names of tributaries of rivers, and of mountains, which he is not likely to hear of again after leaving the school. Geography, thus taught, with a thorough discipline in the theory, as well as in the practice, of arithmetic—that foundation of a working man's industrial science—would soon show their results in the increased demand for further learning, when the boy became a man.

The last and greatest difficulty of all to the establishment of secondary schools, in connection with Mechanics' Institutions, consists in want of adequate means: first, adequately qualified teachers; and, secondly, adequate remuneration for their services. I have already pointed out that the fees of secondary Schools of Science cannot support them to the extent which they do Schools of Art, because in the latter there is a mixture of rich and poor pupils: in the former, there are poor only. According to the present action and means placed at the disposal of the Department, we have little power to give efficient aid. Before, however, discussing how that aid might best and most economically be given, we are met at the outset with a doubt on the minds of many, even of men of liberal intelligence, as to whether aid should be given at all to such schools, either by the state or by the private efforts of the more wealthy in the several localities. The general argument, as presented to me, is as follows:—This country has attained a high degree of industrial prosperity, in spite of the failure of the Mechanics' Institutions and the paucity of Scientific Schools. Our Watts, Arkwrights, and Stephenson are men who have risen from low degree without the aid of such schools. Our manufacturers, as a body, do not call loudly for them. They are men of money; can pay for science, and import it when they want it; and these men of money are the payers of wages to the men of sinew, and don't let us lag behind in industrial enterprise, so that our imports and exports annually increase. Though, after all, one could dismiss such a style of reasoning, as being a negation to the necessity of progress, still its prevalence demands attention. To say that because a thing is well done, therefore means cannot be found to do it better, is to mean that God's light is to be extinguished by man's darkness. Though the Roman could write well with a style, the Englishman may be allowed to write better and faster with a quill.

In this mode of opposing scientific instruction, perhaps the most common and fallacious argument is that which points to Watts and Stephenson as reasons against scientific instruction. Call such men as witnesses: hear the struggles of their life to overcome the deficiency of early education; their toilsome ascent in steps cut out one by one in the mountain of knowledge; and I renounce my place as an advocate, and leave the case in your hands to be decided by their evidence alone. Hear such a man as my friend and old class-mate, Dr. Livingstone, the renowned African traveller, who educated himself partly by resting his book on his spinning-jenny, and snatching sentence after sentence as he passed at work; but also by taking advantage of the facilities for scientific education in Glasgow, which enabled the brave-hearted young man to acquire a knowledge of science with the small sums saved in the day from his earnings as a cotton-spinner. I class among my oldest and most valued friends men now in the same social position as myself, but whom I have known as cotton-spinners, weavers, carpenters, and blacksmiths. Some of these men are in Scotland, and have arisen to eminence through the facilities for scientific education presented there. One or two are in England, and have learned science for themselves, and well too, without any schools to which they could have gone had they wished it. All of them, without exception, are ardent promoters of scientific instruction among the less successful class of working men. The mistake of the argument is very obvious. All the dwellers of a plain do not surmount the mountain which frowns upon them at the end of their valley. A few daring spirits have reached its summit, and

passed beyond it, but the great mass of the people remain in the low-lands. It has been well said that we are not called upon to legislate for men of genius,—nature takes care of them,—but for men of mediocrity, who require aid to pass obstacles. The bold and daring man may leap from rock to rock in a foaming stream and reach the opposite shore in safety, while a man of less power and nerve would have been dashed against those very rocks which gave to the first a footing. The only way to secure a safe passage for the mass of people standing on the brink of the stream is to bridge it over, so that all may travel with little effort. The case should not be argued by placing natural talent in antagonism to education. Education does not profess to give the gifts of God, by creating abilities in man, but merely to draw such out as are inherent within him, so that he may be enabled to apply them to his comfort and happiness in life. Schools are arenas for mental training, places for mental gymnastics, where, by systematic effort and exercise, the feeble man may become strong.

There is still one large class of objectors who exert great influence in preventing science from being introduced into the framework of our educational systems. They contend, that however useful science may be in promoting the utilities of life, it is neither calculated to discipline the mind (that is to strengthen common sense), nor to enlarge and enoble the faculties. Such men as my friend Professor Huxley has pointed out, err by scanning science as a piece of mechanism, and not reading it as a poem: they are unable to rise to the generalities of philosophy, and view it therefore as a collection of dry realities, or hard facts unknit together by a common system. Perhaps this feeling has been strengthened by the observation, that science is sometimes taught as a mere accumulation of facts. The teachers are to blame; but in all professions there may be persons without either æsthetic or philosophical capacity. Although there are men who only see pure carbonate of lime in a statue by Phidias; who cannot see a forest because of its trees, or a town because of its houses, or a stately edifice because of its bricks,—yet it is unfair to take their view of science as a just reason for denying its power in educational development. It is no doubt true that science gives an exactness to both thought and action which differ materially from the mode of cultivating the faculties through the graces of polite literature. We feel shocked with its prosaic character when it tells us that diamonds are mere lumps of coal, and refuses to admit, although it admires, the fancy of the poet when he looks upon them as angel's tears congealed as they fell on the cold and sinful world, or as drops of dew distilled from the sparkling stars. But, while science demands truthfulness as the essence of his existence, his philosophy rises also into glorious conceptions of creative wisdom. In coal the philosopher sees, stored up for the use of man, the heat and light of the sun when it shone in ages which have long since rolled away: for when the sun shone upon the primeval forests, now entombed as coal, its heat and light passed into chemical affinity, which enabled the plants to extract their solid matters from the transparent aid around them. In the combustion of the coal the chemical affinity passes again into heat and light, so that actually, and not metaphorically, we warm and light ourselves by those solar emanations which gladdened the world some millions of years since; and, in the act of doing so, we throw back into the air the carbonic acid upon which former races of plants lived, and thus give food to the increased vegetation required by an advancing civilization. What a wonderful and bountiful benevolence is thus shown! Would not the knowledge of these beneficent provisions for the well-being of the human race cast a new light upon the gloomy passages in which the miner works when he excavates coal for our use? It would ennoble his work and elevate his mind to feel that he was an agent to an infinitely wise benevolence, which was providing for the well-being of the whole world. Surely the labourer would then sympathize with the feelings of Hugh Miller, the working stonemason, when he began to understand the meaning of St. Paul, that we are "labourers together with God."

You will find the necessity for promoting and diffusing scientific knowledge treated in an admirable chapter, by Buckle, in his recent work on the "Progress of Civilization in England." He shows that, as man's moral nature remains the same in all ages, and as no new discoveries in morality take place, the changes in a civilized people must be dependent upon their relative intellectual condition, and must, therefore, result from—1st. The amount of knowledge possessed by their ablest men; 2dly. On the direction which that knowledge takes, that is to say, the sort of subjects to which it refers; and, 3rdly, and above all, on the extent to which that knowledge is diffused, and the freedom with which it pervades all classes of society. All this is very clear, and worthy of full thought. The practical character of a country must obviously depend not only on the amassing of



knowledge by its philosophers, but also upon its diffusion among the people. It is not a knowledge merely of natural laws which make a people wealthy; it is the power of applying them to the every-day purposes of life that produces riches. Philosophers very rightly remain with their abstractions, as a fountain remains at its source, or trickles away from its fulness in a narrow stream. If you wish to make that fountain useful to the surrounding country, you construct a reservoir for its waters, and channels by which to conduct them to the fields requiring irrigation.

Throwing open the civil service of the Crown to competition is an illustration, he thought, of what the public desire as aids to their education. If all the public offices in the State, except the staff ones, were thrown open to competitive examination, an undoubtedly great influence on the education of the country would be exerted. But whether that influence would ultimately be good or bad must depend upon the kind of knowledge for which the rewards of State employment are offered.

#### STREET ARCHITECTURE, ROUEN.

HOUSE IN THE RUE DU BAC.

CONTINUING our sketches in Rouen of the houses which followed those of the Medieval period, we give one in the Rue du Bac, surmounted by a vase in glazed earthenware, which is carried up on a leaden base of good workmanship. The vases in "*gayence*" recall the period in which the ancient manufacture of porcelain in Rouen flourished, the productions of which, daily more rare, have acquired a certain reputation. The roofs of houses of that period which have preserved the ornament are rare, as much on account of their fragility as of the value borne by these vases in commerce.

The staircase, though in a very ruinous state, seemed to merit attention.

This house, though of an agreeable proportion, should be regarded from a distance. The sculptures upon it are much neglected. It is not given for imitation: the broken pediment on the one-pair floor is indefensible.

#### PERSHORE.

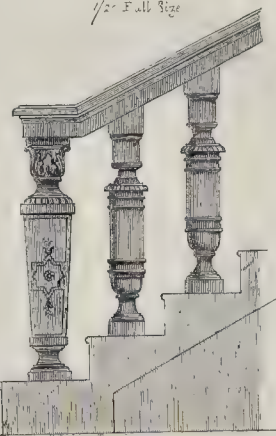
PERSHORE, a retired country town at the distance of nine miles from Worcester, pleasantly situated on the river Avon, is the locality of an architectural fragment interesting even in spite of its incompleteness,—for it consists only of the choir of the intended church of a Benedictine monastery formerly established there. As it would appear that the steps of tourists are but seldom directed to this secluded spot—my conductor informing me that visitors appeared at rare and distant intervals,—I trust I may be rendering some service to students of architecture in drawing attention to this very beautiful, and in some respects remarkable edifice.

The form and details of the four great archways at the crossing, upon which is raised the central tower, originally designed as an open lantern, but now darkened by a modern flat ceiling, and the aspect of the southern branch of the transept, denote, unquestionably, that a church of far higher antiquity once occupied the site of the present one. The broad flat soffits of the round arches, borne up by coupled shafts on the face of a pilaster mass; their extremely short and heavy capitals,—some rude and almost shapeless blocks—some channelled into a sort of inverted cones—some having the surface covered by interlacing design—and one or two carved into human heads,—the arcade of three circular arches, a central wider one, and lateral narrower ones stilted to the same height in the east wall of the transept; the capitals of their shafts, heavier and clumsier than those at the crossing; one exhibiting an unskilful attempt at volutes curling out under the corners of the abacus; the base little more than a rude slope; the narrow gallery above these arches threading between the inner and outer faces of the walls, into which daylight is admitted through little round-headed apertures, on stunted bearing-shafts, crowned by cushion capitals; the similar openings higher up, one under each wall-rib of the vaulting, looking into a second ambulatory, likewise coinciding with the thickness of the wall; the arcade of circular-headed panels, simple depressed surfaces, along the foot of part of the east and the whole of the south wall, enriched on the face with a triple zig-zag and bands of studs (very like the nail-head), in the slightest possible relief,—mere surface ornament,—the strings under each of the galleries spoken of; the under side of one of them cut into a shallow star-moulding: all these are details forming an assemblage of the characteristics of very early Norman work. There are some insertions of the Perpendicular era in this transept which will be readily recognised, whilst the vaulting, in three compartments, is a pleasing example of the Decorated class, with longitudinal and



#### DETAIL OF THE STAIRCASE

1/2 Full Size



3 2 1 0 3 6 9 12 15 feet

#### DOMESTIC ARCHITECTURE, ROUEN.

transverse ridge ribs, and an additional one interposed between each wall-rib and the diagonal, with good bosses at the intersections, and shields along the ribs themselves. The bosses at the apices of the wall-ribs are formed of large ball-flowers. All are brought down, together with the wall-ribs, which assume the form of a very narrow acute-headed arch, upon corbels, which, if originally carved, have been since defaced.

The choir of the church designed to take the place of the old Norman structure, of which I have described the remains, is divided longitudinally into three aisles, the central one terminating polygonally to the east, in three planes of projection. The piers of an

unusual plan, and perhaps from this very circumstance the more striking, are made up of a lozenge-shaped nucleus, with truncated angles, to which are applied triplets of shafts, with a shaft of greater diameter on each of the four sides. This pier is used *exclusively* on the north side, whilst on the south it alternates with one in which a triple shaft is substituted in the place of the single larger one on the faces of the lozenge. The pier-arch mouldings of two orders, each of two rolls, and intervening hollows, with a triplet of rolls as the sub-arch or soffit, have a singularly clear, strongly marked, and well-defined section, and a certain air of massiveness and robustness, which



harmonises admirably with the character of the piers, and with the general simplicity of the edifice. The hood-mould, a plain concentric roll, springs from carved tufts of leaves, as in the choir of Worcester Cathedral. The capitals, though not displaying the ingenious variety and delicate execution of those in the building just named, are, nevertheless, good and quite characteristic examples of the plain ones of the Early English period. The triplets of shafts have a circular abacus, common to the cluster; the isolated shaft, one of the same form, which all unite: the profile, the usual overhanging filleted roll, and deeply cut hollow beneath. Every roll in the arch mouldings (except one), and the central shafts of the triplets, carry in front a square fillet. The base, of its proper section, has a circular outline as well as the plinth on which it is raised from the floor.

There is no Triforium; but I confess the absence of this always agreeable feature in our churches, is sorely to be regretted in this instance, since by its omission height is obtained for an unusually lofty and elegant clerestory, which thus becomes the prominent feature of the building. The openings of the screen, formed in the internal face of the wall, drawn upwards in lengthened, graceful proportions, are divided by bearing-shafts of triplets, carrying pointed arches (the middle one stilted), with three bold rolls in the head. The abacus, base, and capital offer perfect identity with these members of the lower story. In the external wall is pierced only a single window, corresponding to the central arch of the arcade in front,—a seeming defect, to be accounted for, perhaps, by the fear of an excess of light which three openings would have admitted. The vaulting shafts, arranged in groups of three, under a common round abacus, rest upon richly sculptured corbels in the spandrels of the pier arches, and are ringed by the continuation over them of the clerestory string,—a filleted round. These receive the aggregate of the ribs of an admirable Decorated roll, possessing besides the usual longitudinal and transverse ridge ribs, one interposed between the wall rib and the diagonal, and between this and the longitudinal ridge rib, every intersection being concealed by open-work bosses of foliage of great size and surprising richness.

There is one detail, however, in the vaulting system to which objection may fairly be taken. The junction of the clerestory wall and vault is so managed as to necessitate the use of a rib to cover the intersection, of most unsightly appearance. An arch formed about an acute-angled triangle is, in this situation, the most pleasing and the most usual (we see it in the south transept); it is also the most convenient, because it adapts itself to any given height and width. In this case the span of the arch constituting the summit of the wall-rib being less than the interval between the vaulting shafts, there existed no other expedient of bringing down the extremities of the rib upon its supports than the addition of long sloping stilts diverging right and left after the manner, if so trivial a comparison may be allowed, of the extended legs of an open compass. Departure from architectural forms of recognised and admitted beauty is only to be justified by a result of greater beauty: an end certainly not attained by the novel disposition in question, which must, therefore, be set down as proceeding from mere caprice or defective taste, unless arising from some constructional necessity, which I shall presently show may have been the case.

An arrangement to which much importance is attached by some inquirers—æstheticologists, perhaps, rather than architects—is that triple identity of grouping observable in the various component parts of the building. Thus, we find triplets of shafts, as members of the piers; triplets of window lights; in the soffits of the pier arches, in the vaulting shafts; in the openings of the clerestory screen. I apprehend this prevalent distribution into triads not to have occurred wholly without design; and though we may hesitate to adopt the conclusions of some who, suspecting symbol to lurk under every detail of a Medieval church, attribute to it a higher and holier import, it cannot be denied that this typically forms one amongst a numerous class of characteristics distinctive of Early English architecture at its best and purest period.

The extreme eastern plane of the polygonal termination is pierced with an archway, which formerly gave admission from the Sanctuary into a Lady Chapel, but which at present opens into a recess too shallow and insignificant to be entitled to this designation,—an addition made within the last twenty years. The arch springs from a different level, and rises somewhat higher than the one on each side of it. The piers differ not essentially from those already described, though some of the shafts are of Purbeck marble, and stand quite free of the nucleus of the pier. But in the arch mouldings there are evidences of progression. For instance, the sub-arch, instead of the triplet of rolls, is formed of a roll and triple fillet, the fillet in front very broad, and this is

generally found only in the more advanced buildings of the Early English period; and further: filleted rounds, continuous to the base, are introduced to separate the shafted orders. I think there are clear indications, too, of some change of design having supervened before the completion of the church; first, in the method in which the junction of the extreme eastern plane, and the one on each side immediately contiguous, is effected; the latter projecting over and overlapping the former. Secondly, in the outer order of the pier arch-mouldings on one side, not being brought down fairly upon the abacus of the shaft, but truncated at different elevations; the abruptness of this expedient being softened by concealing the ends with minute floriated corbels. And, thirdly, and most decisively, in the presence of a triple vaulting shaft in each re-entering angle of the polygon, cut off at some distance above the floor, and so rendered positively useless. The combination of the roof of the polygonal end, and of the adjacent bay westward, forms one of the most skillful and elegant arrangements of vaulting I remember to have seen.

The windows in the side aisles, where the original ones have not been displaced by Perpendicular insertions, are single Pointed ones, mere perforations, without mouldings of any sort, set behind a shafted arch, sometimes concentric, sometimes not, pierced in the inner face of the wall. To this disposition the most easterly window of the north aisle forms an exception, being a triplet, preceded by an arcade of three arches, on single bearing-shafts of Purbeck marble, an arrangement identical with the corresponding part of Worcester cathedral. At the east end of the south aisle is inserted a Decorated window, bounded horizontally at the summit, composed of four bifoliate-arched lights under circular segments, all worked with a filleted roll. The vaulting of the aisles is plain quadripartite, with groin-ribs of characteristic section, springing from groups of triple vaulting shafts, resting upon the floor, and ringed by the extension over them of the string course at the foot of the window screens.

In the south transept is deposited a stone coffin, dug out of the adjoining burial-ground within a comparatively recent period. It narrows from top to bottom, and is closed with a heavy stone lid, on which reclines a cross-legged effigy, clothed from head to foot in the mailed armour of the thirteenth century: the head resting on a cushion, the right hand grasping a horn, and the left a shield pointed at its lower extremity. At the end of the south aisle there is one in less perfect preservation, of an ecclesiastic, with hands clasped on the breast: the sides are relieved by quatrefoiled circles, which seem to assign it a date not earlier than the fourteenth century. Near to this stand two other tombs of more pretensions, probably of the Jamesian era: they are of two stories, the base supporting columns of classical proportions, with Corinthian capitals, which bear up the flat canopy, under which reclines, in one, the effigy of a knight in complete armour, with kneeling figures at the head and feet; whilst on the base of the opposite one, are sculptured in high relief smaller male and female figures in the same attitude, attired in the primest of all costumes, and of exquisitely ludicrous expression.

Having completed my survey of the interior, I was about to quit it, when I was invited by my guide to be witness of his daily attentions to the church clock. Not very sanguine in the hope of any interesting discovery rewarding my complacency, I nevertheless followed him up the novel staircase, and quite unexpectedly found myself in an apartment of spacious dimensions and imposing decoration. Like the tapestried sides of some noble hall, the surface of the internal wall of this ball-chamber (for it is not I speak), a quadrangle of 30 feet, and corresponding height, is covered from end to end, and from top to bottom, with a continuous series of panelling, of admirable design and careful execution. Divided into five compartments on each side, the central one is a narrow, pointed, trefoiled arch, the two on each side taking the form of a couple of ogee-headed lights, included in an equilateral arch, with a quatrefoiled circle in the head.\* Along the foot of the wall extends a range of trefoil-headed arches (upper foil-pointed). Of the panels, the one on each side, immediately contiguous to the centre one, is pierced to admit light into the gallery, which the great thickness of the wall permits to render a really convenient one. At mid-height a broad frieze-like fascia, bounded on its upper and lower edges by the scroll moulding, and ornamented with sunk quatrefoils, enclosing ball-flowers, traverses the wall, putting in angular projections over the vertical divisions of the panels. The trefoil-headed arcade at bottom is surmounted by a battlemented parapet, every merlon of which exhibits also the sunk

quatrefoil. The mouldings with which the design is worked out are extremely bold and good, of three orders, and furnish an excellent example of that subordination and continuity of moulding in tracery which characterizes the Decorated in its native land far more strongly than in the countries into which it was thence diffused. The first order, a large circular fillet, traces out the principal arch of the panels, the vertical divisions between these, and is returned horizontally at the top, so as to make the compartment square-headed; the second smaller fillet divides the primary arch into the two ogee-headed arches, and forms the circle between them; while the third, a square fillet, constitutes the foliation both of circle and of subdivisions. It has been my good fortune to visit the belleries of not a few continental churches of a more or less ornate character; but I have never seen one in which so much care and taste have been successfully employed in converting this ordinarily neglected portion of an ecclesiastical edifice into one of its really striking and conspicuous beauties.

The Tower is, perhaps, scarcely a fair subject of criticism, as the completion of the church to the west of the crossing might have considerably modified our opinion of its effect. Certainly, in its comparatively isolated state, its proportions do not strike one as possessing much of that upshooting and aspiring tendency which we naturally associate with this grand external feature of our churches. Of the two stages above the roof, the lower one is pierced in each face with a couple of two-light windows (occupying only the middle of each side) composed of two trefoil-headed lights, carrying a trefoil under an enclosing arch, the unbroken continuity of moulding of which I have spoken reappearing here again. Each face of the upper story is occupied by four panels, in every respect identical with those in the interior of the belfry (the two middle ones opened as windows), with the addition of vertical strips of stone between the panels, and triangular ones above them, which appear not to have received the last finish, as we can scarcely doubt that the one was intended to be improved into a slender buttress with its crowning pinnacle, and the other to carry the customary crockets and finials. A string of the ball-flower, surmounted by a battlemented parapet, forms the separation between the two stages of the tower; the string alone is used for the coriole.

The windows, resting on a filleted-roll string, are simple perforations with double splay, except in one or two instances, where they are surrounded by a continuous hood-moulding. The plain hood-moulds are reserved for a short distance, but are not continued to the buttresses. These, below the aisle-roof, are of undiminished projection and breadth; above they are set off twice, and capped with incomplete square turrets, which stop the lower ends of the flying arches springing over the roof of aisle, and abutting between the clerestory windows. The buttresses at the angle of the north aisle, set cardinally, are of very slight projection, and flanked by a single shaft in a recess at one corner, by a triple shaft at the other. The central tower is shored up at its north-east angle by an enormous sloping mass of wall prolonged from the clerestory parapet quite down to the ground. There exists only one variety of the corbel table, under the clerestory parapet of the choir—a succession of pointed arches supported on plain mouldings.

It may be remembered that in describing the interior, the existence of three Norman archways in the east wall of the south transept was noticed. Of these the one adjacent to the crossing opens from the transept into the aisle. The original purpose of the middle one is not likely, perhaps, to give rise to much difference of opinion, an apsidal recess or chapel in this position being a very usual arrangement in cathedral, conventual, and other churches of importance of the Norman class. It is more difficult to explain satisfactorily the destination of the third. An arch of communication I think it can never have constituted, inasmuch as the lower part is closed by the wall arcade before spoken of, which has claims to, at least, as high an antiquity. However this may be, it would appear that subsequently to the completion of the early English choir, the unity of the plan was broken by the addition of a chapel parallel to the south aisle. Two of the Norman arches were walled up, and others of good decorated detail were, on the exterior, raised over them; at the same time, access was given by a third archway of similar character from the aisle into the chapel. This in plan is a parallelogram of two compartments in length, and as many in width, of which sufficient evidence is afforded by the responds of the vaulting shafts carrying the spigings of three ribs, one transverse and two diagonals. Singularly enough, this chapel includes one of the original lancets of the aisle, and was besides probably lighted at the east end by two windows, of one of which the jamb mouldings, both external and internal, still remain perfect, with the groove between for the reception of the glass. The lower part of the

\* I have used the term *circle*, but not with strict accuracy, because the outline of the quatrefoiled space slides at the top into the curve of the enclosing arch, and at the bottom forms a continuous curve with the heads of the ogee subdivisions.



wall which closes the outer, that is, the most southerly of the Norman arches, is relieved by a very good arcade of pointed trifoliate arches, surmounted by triangular canopies, crocketed and finielled, the fragmentary character of which seems inexplicable, unless we suppose it to be but the commencement of a decoration which it was designed to extend to the entire chapel, and that of this intention some now undiscoverable circumstance prevented the completion.

By how much the roof of the choir and transepts once exceeded in height the one actually existing, of so depressed a form as to be completely masked by the battlemented parapet of the clerestory wall, may be learnt from the gable lines on the south, north, and east faces of the tower. This unusually low pitch of roof in a construction of the period at which Pointed architecture had obtained its perfection (the vaulting here it being of Decorated character), is of itself a remarkable circumstance; and I cannot but think it affords us a little insight into the cause of that somewhat ungraceful intersection of vaulting and clerestory wall to which I have drawn attention in speaking of the interior. If we suppose the choir contemporaneous with the higher vaulting to have presented in its internal elevation the all but universal complement of three stories, the builder of the present one, when he determined to omit the triforium stage, must have found it a matter of extreme difficulty, if not impossibility, as a mere matter of construction, to raise upon the piers a clerestory wall of such gigantic height as to reach the elevation of the original vault; and hence arose the unavoidable necessity of lowering the new vaulting in a degree adapted to the diminished loftiness of the substructure.

That the vaulting in question was raised at a period subsequent to the erection of the central tower is plainly proved by the fact that the windows of its roof stage are not constructed without an exact reference to the inclined lines of the original higher gable, the central portion of the window which would be masked by the shutting of the gable being left incomplete, and the jamb mouldings and mullions dying off as they descend upon the raking sides.

The two western responds of the nave of the old Norman structure are still in their original position: ponderous cylinders built up in courses with heavy quarter-round caps. These are the piers of the nave of *Malvern* and of *Penkesebury*, and much relied upon by some as clear indications of a mode of architecture prevalent before the Conquest. It appears, however, difficult to dissociate these fragments from the crossing and the transept, whose Norman origin is too manifestly impressed on them to be controverted by the most zealous advocate of so-called Saxon architecture; nor do I think, even if an interval of some few years could be clearly established, that these piers possess sufficiently strongly-marked differences to imply a distinction of style.

I returned to Worcester much gratified with my expedition, so much so, that I repeated my visit on two subsequent occasions. Should this slight memorial serve to make more generally known the church of the Holy Cross at Pershore, and especially its remarkable—may I not write, unique bell-chamber?—I shall not consider my excursion wholly fruitless.

VIATOR.

#### FIR, DEAL, AND FRENCH-POLISHING.

I HAVE read with much interest the papers of Mr. Wyatt Papworth, in your last numbers, and also the short discussion which arose thereon. I cannot help feeling much surprised that amongst the many men of eminence who took part in the discussion, the merits and advantages of "common fir," as an ornamental wood, should have been so completely overlooked.

Is it not strange that the great alumni of the decorative world should still stick to the old absurd fashion of disguising woods, instead of revealing their natural beauties?

This is a grave charge, and I make it gravely. It is too true, that many of our artists, employed in the internal decoration of houses, rack their brains to find new means of imitating and disguising woods, instead of studying the best means of bringing out their natural peculiarities and fitness for employment as decorative woods. Instead of wasting time in perfecting imitations of scarce or dead woods, it would be much better to employ the same amount of time in fully developing the natural characteristics of any of our native woods, now despised for decorative purposes, because, forsooth, they are cheap and common. This is a sad mistake. Many of our commonest woods are very beautifully grained, but their excellencies for ornamentation are lost, because our decorators have not studied the best mode of developing or bringing out their beauties.

Painting and graining, and imitation, have been carried to a sickening excess. The natural appearance of the woods has been entirely ignored. Why

should our doors and cupboards be always painted? And how painted? Styles of French white,—panels, rose, pink, or salmon colour! For cheaper houses, the doors and cupboards, window linings, &c. are generally of two shades of stone-colour,—and vilely executed into the bargain. I prefer the natural appearance of the wood—whatever that wood may be—well and clearly varnished; but, better still, French-polished. Why is French-polish not more used in England? Why confined to cabinet-pieces and furniture, except in the houses of the upper ten thousand? Clear, colourless varnish ought to be more commonly used to finish off our joiners' work, instead of the common painting now so much in vogue.

I was much surprised on reading the following words in Mr. Papworth's paper:—"As another mode of covering a surface, the board now exhibited has been prepared to show how deal may be employed, without the use of oil-painting. The surface having been prepared, it was at once grained, the natural colour of the wood forming the ground of the imitation wood, the whole was then varnished as usual." Why paint the lily, or perfume the rose? Here we have a really beautiful wood actually spoiled by being "grained" over. As an experiment in effect, well and good. But I hope this style of work will never be seriously entertained. Let the wood alone,—common deal, properly treated, is very beautiful and ornamental.

I am surprised that it has been so long neglected for decorated uses, because its natural qualities for this purpose are of no mean order. It is worthy of more attention than has hitherto been bestowed upon it. I have seen, in my travels over the world, very beautiful specimens of furniture made entirely of "common deal," that would not have been despised in a London boudoir.

Our cabinetmakers, upholsterers, decorators, and joiners, appear either to be ignorant of the merit of deal, for ornamental use, or else they willfully neglect to employ it, preferring to paint and grain, to their heart's content. Were our joiners and decorators to form their doors and window-linings of well-selected fir-wood, have them well varnished, or still better, French polished, painting and graining would soon be superseded. The difference in appearance is immense. I have seen rooms entirely fitted with "common deal," well French polished, and for such purposes deal, if well selected, is very beautiful, cheap, and lasting. I have seen large wardrobes and dressing-tables, made of deal and being, as before observed, well French polished, they have puzzled more than one learned connoisseur to make out the wood,—*for, certes*, they never dreamt of guessing they were made of "common deal." Nay, more, I have seen the private rooms of a crowned head, where the only wood employed was this much-despised "common deal," and his majesty was rather proud of his "common deal" than otherwise.

In the Royal Palace at Berlin, one or two of the King's private rooms are entirely fitted up with deal fixtures; doors, windows, shutters, and everything else being of fir wood.

The reception-room where the King of Prussia usually transacts business with his ministers, and receives deputations, &c. as well as the adjoining cabinets, are fitted with deal, not painted and grained, certainly, but well French polished. The effect is very good. Few would fancy that no other material had been used but deal; for the wood is not only in this case ornamental, but useful; and, like myself, every one is surprised when told that this apparently new kind of ornamental wood is only deal. It is, of course, well selected, carefully wrought, and French polished *secundum artem*, which is the great secret of the business.

If our doors, door-cases, shutters, linings, &c. were made from well-selected, thoroughly-seasoned deal, carefully executed, and then well varnished, with a clear, colourless varnish, or still better, French polished, I have no hesitation in stating my certain conviction that it would very soon become the mode, and supersede the present system of painting and imitation graining.

It is necessary that the wood selected for such purpose should be well grown, and from a fully developed tree, where all the fibres or grains are distinctly marked. The beauty of the wood, when properly treated, consists in the brilliant manner in which the rich, deep yellow streaks or layers of the hard wood are developed under the hands of the skillful polisher. Thence yellow veins show through the polish like clear and beautifully-marked streaks of amber, and strongly reflecting the light, they produce a very pleasing effect. The yellow, variegated, hard part of the wood, forms a very excellent contrast to the delicate whiteness of the softer parts of the board; and, if skillfully selected, the effect will be much admired, and certainly preferred to the best imitation of the more rare and expensive woods.

I am glad to find that Mr. C. H. Smith recom-

mends varnish instead of paint,—and am especially pleased that Mr. J. G. Crace took the bull by the horns at the very commencement of his observations, by bluntly and honestly stating "that the very best way of treating wood was simply to varnish it, and not to smother it over with paint." To this I entirely agree, as far as it goes; but from what I have seen, I think French polish is far better, and will amply repay the extra expense. Mr. Jennings states his opinion, that "French polish produced the best effect;" no doubt of that. He afterwards observed, "but if two coats of copal varnish were applied, and then polished, the effect would be as good;" this I doubt; but at any rate, it would be better than painting and graining, however well they might be executed.

For ordinary houses of the middle classes, I strongly recommend our builders to leave the wood in its natural state, with the exception of the application of clear varnish, to develop the colours,—and avoid the present absurd and unsightly system of painting. It will be much cheaper in the end, and the effect far more pleasing than is now produced by daubing the woodwork over with common paint.

I make a strong stand for the beauties of common deal, if properly used: it is really a beautiful wood, judiciously treated; and I firmly believe the time will yet come, when well French polished deal will fight a battle of extermination against the red hot furniture now in common use. It is far more chaste in appearance than the glaring red furniture of the present—Brokers' Alley style: let it be fairly tried, and its own merits will carry the day.

In arranging doors, panels, &c. much will, of course, depend on the skill exercised in selecting the wood, in placing the best parts in the panels, so that when polished the most pleasing effects will be produced. Much, too, depends on skilful workmanship and smooth finish, which can only be obtained by care, and using well-seasoned wood; but this is the case with any other species, and is, therefore, not applicable to deal alone.

I earnestly hope that such of our eminent decorators as have the opportunity will give deal a fair trial: let them boldly make the experiment, and I feel assured they will not only be pleased, but surprised, and in the end fully satisfied with the result. No paint, if you please, but plenty of good French polish, and "common deal" will be despised for ornamental purposes no longer.

JOSEPH LOCKWOOD.

#### ENGINEERING AND OTHER WORKS ABROAD.

On the 16th August, and 12th September last, the General Roman Railway Company (*Compagnie Générale des Chemins de Fer Romains*), made a lump-sum (*à forfait*) contract with the Industrial Company of Florence (trading under the name of the *Crédit Mobilier Toscane*), represented by M. Cozino Ridolfi, and with M. Giulio Sarti, engineer at Genoa, for the construction and furnishing, all in complete working order, of the railways and rolling-stock of the whole line from Rome to the River Po, by Ancona, Bologna, and Ferrara.

The inauguration of the section from Nola to Palmi, has just taken place. This portion, nine kilometres in length, forms part of the Sanseverino Railway, which is intended to be ninety-four kilometres long. The King of Naples, following the example of the ancient Romans, wishes to rid lazy souls of the evils of a garrison life by strengthening their bodies in the *tranchées de la paix* (railway works), and so fit them for heavy fatigue whenever it may be needed:—so it is said.

At the other side of Naples the Government push forward the works towards Rome: it has already signified its intention of building the great viaduct across the Volturno, at its cost.

The locomotives are built at Petrarci, at which town the model workshops have made astonishing progress since their foundation in 1842. The shops, including a splendid foundry, forges, &c. and all material for any of their largest enterprises, give work to 1,300 men under Lieut.-Col. Corsi, Royal Neapolitan Artillery, aided by Capt. Afia de Rivera, under the command of General d'Agostino.

Thus, nearly all the Marine engines for their navy have been made at Petrarci. Several others are in hand, including one of 400 horse-power.

From Naples to the frontier of the Roman States, the line has been opened for some years to Capua, and in two years it is expected to be open to the city of Rome. It is astonishing to see these works already completing, with the comparatively small budget, perhaps the minimum in Europe. The expenditure of the kingdom is not to exceed 140,000,000 of francs, for a population of 10,000,000. Out of this the Minister of Public Works gets only 20,000,000 of francs.

The Paris, Lyons, and Mediterranean Railway



Company are occupied at present with surveys, in the neighbourhood of Aix, for a branch line to join Marseilles with the Alps. The council-general of Saône-et-Loire have voted that, with as little delay as possible, the Paris, Lyons, and Mediterranean Company should have the concession for a branch line from the Moulins railway to the Lyons line, which, starting from Paray, would join the Geneva line at Mâcon. The same council express a wish that the Nevers and Moulins lines should meet the Lyons line at the town of Chalons-sur-Saône.

The council of the Gironde votes in favour of the line from Bordeaux to Nantes, by Libourne, Blaye, Saintes, Rochefort, and Napoléon-Vendée. The line at present open for traffic is wholly inadequate to the wants of such a rich and commercial population.

For some time past an engineer has been occupied in studying several small branch lines in the department of the Var. The first is to connect Hyères with Les Salins, by locomotive traction, starting from La Garde, the first station on the Nice and Toulon line. The second by horse traction, will start from Hyères to Les Salins les Pesquiers, traversing and contouring the peninsula of Giens, as far as the Tour Fondue, and communicating with the shores of the lake by a small steamer. The third (also horse work), is to start from about the Places des Armes to Pont du Las, and thence to the Seyne, from which a branch will be made to the Marseilles and Toulon railway. The fourth (horse work also), starts from the Place St. Jean, and abuts at the extremity of Mourillon, following the boulevard de l'Eygoutier. The surveys are to be presented officially during the month of November, by the engineer, to all the municipal councils interested.

An experimental trip took place on the 15th of October on the Geneva line, as far as the entrance to the Credo tunnel. The directors, engineers, and guests formed the party, and most of them pushed forward by post carriages to Bellegarde, to a banquet, which was ready for them at the Hôtel de la Poste.

The Custom-house, a new one, at the expense of the Geneva and Lyons Company, is ready for the roof. The central station, adjoining, advances with activity.

The difficulties encountered on the marly soils at the Lyons end of the Credo tunnel have been overcome. Not so the Surjoux tunnel: no sound bottom has been found: no sooner is a heading driven than it slips in immediately. The hill through which the tunnel is being driven is "sapped" to the foundations: the very vine-roots on the flanks are left naked by the innumerable "crevasses" occurring every day. The Credo tunnel is to be finished in three months: out of 3,950 metres there are only 350 to vault.

In a few days the line from Jativa to Valencia (Spain) will have the section from Jativa to Alceidia open to the public.

On the 10th of October, the Emperor of Russia approved of the following persons as lessees of the Warsaw and Vienna Railway:—Count Zamoiski, Count Potocki, Count Renard, Baron Murchwitz, M. Milde, the Bank of Eystein (Warsaw), and Prince Hohenlohe of Prussia.

The railway from Bregenz to Rheineck is conceded by the Austrian Government, and that of Lindau to Bregenz by the Bavarian Government, so that it will not be long before a company is formed for a belt-line, or "Chemin-de-fer de Ceinture" of the Lake of Constance.

#### THE STATEMENTS OF THE OPPONENTS OF GOTHIC ARCHITECTURE.

It is not my custom to reply to anonymous attacks, and it would be unbecoming in me to defend anything I have written, against fair criticism. My object in now writing is not to do either of these, but mainly to beg any of your readers, who may chance to have waded through the tirade in your last number, bearing the name of "Verax," to take the further trouble of referring back to your numbers of March 21, and April 4, in the present year, where they will find my lecture given at the Royal Academy, and to a more recent number containing another, read at Douvres, and to judge for themselves how far your correspondent's statements bear out the title he has assumed. They will find, if I mistake not, that he has assumed, placed himself in a class to which I referred, "who delight to attach a false and exaggerated meaning to an expression," but that even to the charge of "palpable falsehood," which he does not hesitate to bring against others, he has, I am sure inadvertently, run the risk of exposing himself. Take, as specimens, the professed quotations given in inverted commas, "modern architecture, the last new original style," "the last modern architecture."

If these are attributed to me, I am unable to find them. Then, on the much-vexed question, as to whether the Pointed arch was imported by the Crusaders from the East, he first converts it into a question whether

Pointed architecture, instead of merely the arch, was so imported; and then accuses me of having admitted it (!), deliberately quoting in inverted commas from my lecture the following passage—"The systematic adoption can with certainty be traced to the suggestive architecture of the East," whereas the passage really stands thus:—"If its systematic adoption can with certainty be traced," &c. I Surely such a double misstatement is sufficient to turn against him the force of his own quotation—

"Quodcumque ostendis mihi sic, incredulus odi!"

I had in a previous sentence given a corresponding "if" in italics, and added the words, "a question which I will not now attempt to investigate," and further on had repeated for a third time the same "if," thus showing, in the most emphatic way, that I did not make the admission which, in spite of all these precautions, he has the conscience to attribute to me!

It would not be easy for me to look through the multitudinous works of Mr. Fergusson and Sir Gardner Wilkinson, to test the correctness of his similar assertion respecting them; but, judging of the former by his most recent work, I should conclude that, while knowing well (as we all do) and broadly stating the antiquity of the pointed arch, he does not very confidently hold that our forefathers learned it in the East, much less does he hold that their architecture had any such origin. On the contrary, he speaks of Gothic architecture (round and pointed) as belonging to the Teutonic tribes who had overwhelmed the Roman empire; whose successors I have termed "Germanic," he "Gothic," but both with the same meaning; while the Pointed Gothic, as distinguished from the Round, he says, there can be no doubt was "invented in France." He further attributes the introduction of the pointed arch to the necessities of vaulting, &c. Its origin he thinks of little importance, and holds that nearly all the other characteristics of Gothic architecture had already been attained; and he further holds with me, that Gothic architecture was the last in the series of original styles, at least in this part of the world. Sir Gardner Wilkinson, I believe, actually endeavours to show that the Saracens derived the pointed arch from previous Christian buildings, and Mr. Fergusson distinctly shows that the Saracenic style of Syria and Egypt was developed out of the Byzantine; so that I fear these two champions will not do him more good than my asserted admission. "Verax," however, goes further: he accuses me (again having recourse to inverted commas) of saying that "the architecture of the Saracens was already Christian," and actually takes the trouble to prove that it was not so! I need hardly say that I had made no such statement; and in speaking of the "architecture of the soldiers of the cross," referred not to the Saracenic (!), but to the Romanesque of Western Europe.

We next come to the statement attributed to me (or to some one else), that Justinian was the first to Christianize architecture. On this I need not dwell, as I do not find that I even alluded to the name. I will only add on this point, that it is somewhat new to hear the Greek cross stated to be less Christian than the Latin nave and aisles! It is, needless, however, to enter further into these particulars: the whole letter is one mass of such fallacies. The ages which covered Europe with the most wonderful and costly monuments, both ecclesiastical and civil, are said to have been those in which "the madness of the Crusades had exhausted all the resources of Europe!" The days of our Gothic cathedrals, of Cimabue, Giotto, the Pisan sculptors, &c. &c. are said to have possessed no arts; those of Abelard, Grossetête, and

\* Since writing the above I have referred back to your report of Mr. Fergusson's paper on the pointed arch, read at the Institute in 1849, in which he unquestionably does take the view to which I alluded in my lecture as to the eastern origin of the Pointed arch, but most carefully guards himself against what he says being misinterpreted to apply to Pointed architecture. His words are as follows:—"In adopting such a view of the question as this, there are two things to be guarded against, the first confounding the invention of the Gothic style with that of the Pointed arch,—a mistake too often fallen into. The first, however, is a purely indigenous and native elaboration from Roman art, without any trace of copying or even imitation. The latter is a mere subordinate characteristic of that style, the truth being, if we admit the above view, that the hint was given by the East, but nothing more; it was applied to Gothic buildings in a manner in which it had never been used in the East, and was so incorporated with and worked into the native style, that it soon lost all trace of its origin, and became as native as any other part of the true Gothic. Though, therefore, I do not think it can be denied, but that the origin of the pointed arch is from the East, it must, I think, at the same time be admitted that all its appropriateness and its beauty, as found in our mediæval cathedrals, is wholly due to the talent and ingenuity of our Northern architects, who wrought it into those forms of beauty and grace which we all now so fully appreciate and so universally admire." (Builder for 1849, p. 304-5); yet your correspondent asserts that Pointed architecture is Saracenic, and that "this fact has been abundantly proved by \* \* \* Mr. Fergusson!"

Daute, no learning: and those of the Italian republics and German free cities, no commerce! Those who think differently from your veracious correspondent, are accused of doing so from the lowest motives, and to hide their own idleness or their incapacity of learning the vernacular style. A design which has been often objected to as being Italian is now discovered to be pure Dutch! A style often objected to as Popish, is stated not to be Christian, because not found at Rome! Poor Pugin's death is attributed to his finding his theories to be erroneous, and those whom he wrongly charges with styling themselves his "followers," are accused of all kinds of things of which they are unconscious; and especially of underrating such men as Professor Willis, a man whom they hold in the very highest consideration; while the whole is interpersed with a mixture of seeming erudition and real coarseness anything but creditable. The only excuse I can make for the writer (in whom I, with much regret, imagine that I recognise a man for whom I have always entertained a real respect), is that he intended it (like his story of the "Young Saints," and their "cigars and whiskey-and-water") only as a pleasant fiction, and subscribed himself "Verax" only in the sense of "*lucus a non lucendo*."

Geo. GILBERT SCOTT.

#### MR. ARTHUR HOLME, OF LIVERPOOL, ARCHITECT.

DEATH has deprived the architectural body in Liverpool of one of its ablest members, in the person of Mr. Arthur Holme (brother of the present mayor), and who has died prematurely at the age of forty-three.

The local papers bear witness to the esteem in which he was held, and give some particulars of his career. He commenced in the workshops of his brother, and then passed some years in Birmingham studying architecture, as the pupil of Thomas Rickman. For some time he was in partnership with Mr. John Cunningham. The *Daily Post* mentions amongst his works, St. Paul's church, in the Prince's park; St. Matthias's church, in Great Howard-street; All Souls church and schools, St. Aidan's church and schools, St. Alban's church and schools, All Saints' church, Great Nelson-street, and a church of greater ambition and architectural success than these,—St. Mary's, at Grassendale; the music-hall, in Bold-street; the ship at Eastham, and the waterworks for the military on the Curragh of Kildare. The *Courier* adds, the church at Crosby, the new façade of Messrs. Woolbright, in Bold-street, and the seat of Mr. Jonathan Peel, at Knowlmore.

Mr. Holme has left his children the best of possessions,—a good name.

#### STAINED GLASS.

St. Nicholas (Scarby).—A new east window of three lights has been placed in the chancel of the church of St. Nicholas, Scarby-cum-Owbury, Lincolnshire. It was executed by the St. Helen's Glass Company. The centre opening represents the Ascension of our Saviour in presence of the Apostles. The two side lights are occupied by figures of SS. Matthew and John Evangelists, with their respective emblems beneath. Under the centre subject are the arms of the donor, with the inscription,—*Presented by Ann, relict of Richard Roadley, esq. A.D. 1857.* The style of the window is Decorated.

Clonmore (Ireland).—A memorial window, according to the *Carlton Sentinel*, has been erected in the parish church of Clonmore, to the memory of the late Honourable Mrs. Stopford. The design, which is Gothic, was given by Mr. J. Welland, architect to the Ecclesiastical Board, and the work executed by Messrs. Faircloth and Lynch, of Carlisle. The painted glass was supplied by Messrs. Silley, of Dublin.

Miscellaneous.—The following are works executed by Mr. Warrington in various parts of the country, including Ireland: namely,—eleven windows in the new church at Lissadill, near Sligo; the east triplet containing a representation of St. Peter raising Dorcas;—the west window of Winwick Church, and the east window of the Orphan-house Chapel;—two Norman windows in Newington Church, Kent;—a series of windows for the chapel of Cheltenham College;—the east window of Ashover Church, Derbyshire, and others.

#### BAPTIST CHAPEL, PRESTON.

##### SCULPTURED CAPITALS.

In fulfilment of the intention notified in our account last week of the chapel now being built at Preston for the Baptists, under the direction of Messrs. Hibbert and Rainford, we have engraved representations of the sculptured capitals. Freedom was permitted to the carvers in the production of them.





BAPTIST CHAPEL, PRESTON: SCULPTURED CAPITALS.







## WATERGLASS AND ITS APPLICATIONS.

Or soluble glass, or the soluble silicate of potash or of soda, and its various uses, we have occasionally spoken, especially of its use in hardening soft and porous stone; in the production of artificial stone, as under Messrs. Ransome's patents; in the suppression of damp in walls, the fixing of lime-wash and other colours, the starching of cotton fabrics as a substitute for flour or starch; &c. &c.

One of the most important inventions in the chemistry of the current century is the application of the silicates of potash and soda to the arts. These silicates, called "waterglass" because they are solved or easily soluble in water, though their composition is nearly similar to that of ordinary glass, were made use of almost thirty years ago, by Mr. J. N. Von Fuchs; but it is only lately that they are manufactured and used on a more extensive scale.

Several improvements have recently in the manufacture of waterglass by Liebig, Kuhlman, and others, and the better acquaintance with its properties, make it possible now to apply it with greater certainty, and at a moderate price. In this country, however, its value has not yet been sufficiently appreciated, while in France and Germany, large establishments are already engaged solely in its manufacture. In Great Britain, more especially, the varied applications of waterglass, it is believed, would be found particularly useful and profitable to manufacturers and capitalists.

Waterglass, produced either by directly dissolving silicic acid in caustic potash or caustic soda, or indirectly by heating a mixture of carbonate or sulphate of potash or soda with charcoal and powdered silica or quartz and dissolving it afterwards in boiling water, forms a tolerably clear solution, which, by exposure to the air, partly gets decomposed by absorption of carbonic acid: it is therefore advisable to prevent the admission of air by keeping it in well-closed vessels.

Used as a paint, waterglass is said to combine the properties of a varnish with that of a cement, and to possess further the advantage of being almost colourless, drying very quickly, evolving no smell, and rendering the surface of the object coated with it very durable, and almost indestructible. Another peculiar and important property of it, described by those who have used it, is, that it undergoes a chemical combination with certain porous substances, rendering the same almost as hard as stone, resisting afterwards the action of air and moisture. A piece of chalk, prepared with waterglass, will get so hard, it is said, after a few days, that it will produce fire on steel.

One of the earliest applications of waterglass was to prepare wood, paperhangings, linen, &c. so as to protect them from the action of fire, water, and air, and this, of course, is very important to theatres, factories, and all buildings more or less exposed to these elements. It is said to be sufficient to cover the object once or twice with a thin layer of the solution, which, in drying, forms a kind of glass, eventually insoluble in water, and partly chemically combined with the fibre.

Among others of its alleged applications is its use in preserving casks or other vessels employed in the beer or wine trade, and for the better cleansing of the same. All metals, particularly iron, are said to be prevented from oxidizing by this impervious preparation. Mixed with "Blanc-fix," according to Mr. Sicherer,\* it forms, on glass, by exposure to high temperature, a white enamel, which also may be produced in varied colours. It is employed with much advantage, it seems, in painting on glass, and we may here observe that the chemists of the last and previous centuries used waterglass, or "oil of flints," as they called it, in precipitating various silicic colours from the metals, used in shape of salts. Red chloride of cobalt, for example, if precipitated in waterglass, forms a beautiful blue powder,—silicate of cobalt.

The chief application, however, of waterglass, is based on its powerful chemical attraction to mortar, brickwork, porous sand, and limestones, forming silicate of lime, which is very hard, and like glass. For example, a wall or stonework painted with the solution is said to combine durability with the property of drying very quickly. Once dry, it does not afterwards discolour; and the surface being like glass, it, of course, can be washed at any time, if necessary. Mixed with powdered chalk, or patent white and blanc-fix, it appears to form a good white paint, on wood, brickwork, &c. Any desirable colour may be produced, and the art of producing *à fresco* pictures in this style, on walls, is called "stereochromy," an instance of which may be seen at the new Museum, Berlin, of four pictures by Kaulbach. A stereo-

chromic painting by this process has the advantage of not changing its appearance after a time. This method of painting, which is still capable of further improvements, is already adopted in many instances by artists.

The property of waterglass to combine with powdered chalk, lime, magnesia, sand, gypsum, and other porous substances, so as to form a hard mass, susceptible of a polish, and with unchangeableness to atmospheric effects, renders it useful for purposes of general ornamentation. It is said to form an excellent cement for stone, glass, and porcelain. Common limestone prepared with waterglass has been used in lithographic processes. Artificial Roman cement of very good quality is said to be produced from it. Waterglass has, also, been employed for printing in colours on paper, particularly paperhangings, linen and woollen textures, &c. in fixing gold and silver on paper, &c. Ultramarine prepared with waterglass preserves its colour better than with any other fixing agents. In dyeing it has been used as a mordant. Another new application of it is that of a substitute for soap. It is very cheap, does not act on the fibre, and is esteemed as a good detergent.

There are many other more or less useful or important applications of waterglass which space will not allow us here to mention.

## CHURCH-BUILDING NEWS.

**Lynn.**—A short time ago, the Wesleyan body determined on making extensive alterations in their chapel in Tower-street, Lynn, the architect engaged being Mr. W. Newham, jun. The tender of Messrs. J. and W. Purdy, builders, was accepted, and the work went on. A committee undertook the management, and the contract was executed by Messrs. Purdy. When the whole was completed, says the *Norfolk Chronicle*, the committee were horrified by the receipt of a "little bill" for 798*l.* being 36*l.* in excess of the contract price. This charge they strongly disputed, and the result was an action against them for the 36*l.* (the 437*l.* having been already paid). An amicable arrangement, however, was entered into while the case was under hearing, by which the contractors, receiving 275*l.* paid into court, were to be content with this, and pay all costs, excepting 25*l.* which the committee were to pay towards their own. In other words, the contractors were to receive 300*l.* and pay all the costs on both sides.

**Stilton.**—The church here has been restored and reopened. One of the chief improvements in the interior is the removal of a gallery or loft from the west end, which has exposed to view the tower arch, supported by four slender shafts, having unbuttled capitals. The newly-devised Norman font, which is approached by new stone steps, has been placed under the belfry. The new pulpit is worked in Clipsham stone: it contains a series of panels having trefoil pointed arches. The seats are like those introduced into Ely Cathedral. The chancel has been renovated, and the windows have been replaced. The south porch has been refaced: the door is new, as is also the one at the west end, and each contains scrollwork. A new north door is to replace the present old one; and improvements are to be made in the vestry. Red and black square patent tiles, from the manufactory of Messrs. Moore, of Brosely, are laid diagonally in the aisles. In the course of the restorations several hundred cart-loads of earth, which had been accumulating for ages, were removed from the vicinity of the walls of the church. The whole of the work has been performed by the contractors, Messrs. Richardson and Son, of Stamford.

**Milton.**—On the 16th ult. the Bishop of Oxford consecrated the church at Milton, in the parish of Adterbury, which had been previously dedicated to St. John the Evangelist. The building cost 1,800*l.* Mr. Butterfield was the architect. The edifice is built of the stone of the country, with dressings from the Bath quarries, and it is covered with red tile. It consists of a nave, tower capped with low spire, and sanctuary. It has a porch and lich-gate. The nave has an open space at its westernmost end, forming a sort of narthex, in which is set the font and cover. It is benched for ninety, including the children of the school.

**Andover.**—On the 26th ult. two chapels were consecrated by the Bishop of Winchester at Smauell and Hatherden, in the parish of Andover. A few years ago an entire stranger provided 100*l.* a year for a curate for these most destitute hamlets until such time as a more permanent endowment should be made. They have now been endowed by Winchester College, and two chapels of simple, though architectural character, under the direction of Mr. William White, have been built. They are calculated to accommodate 200 and 150 persons, and have been finished for 650*l.* and 700*l.* respectively. The nave and apsidal chancel are comprised under one roof,

being separated internally by a low screen, and the larger chapel has a north aisle. The walling is finished internally in red and buff brick, and externally in brick and flint. The roofs are covered with plain tiles, and ceiled between the rafters with boarding. The fittings are of deal. The window-heads are cusped and partly traceried, after the style of the Early Geometrical period; and the apses, gables, and bell-gables are furnished with good metal crosses.

**Quatford.**—The church of Quatford has been repaired and enlarged, and was re-opened on Thursday before last. The south wall has been taken out; and the new aisle separated from the nave by an arcade of five pointed arches in Alveley stone. The aisle is lighted by three side and two end small gable windows. It has an open timber roof, the woodwork being stained and varnished. The nave is separated from the chancel by an old Norman arch, and built of tufa. It is conjectured that the whole of the original church was built of this material, as a large quantity has been found in the old foundations. The wall has been cleared off to the original stone, and pointed. At the west end of the interior, the arch, which was before wholly concealed by the gallery, has been thrown open and restored, showing a west memorial window. The whole of the seats (which are open) have been repainted and repaired, and a number of new ones added, making in all about 270 sittings.

**Pentrych.**—The parish church of Pentrych has been rebuilt, and was consecrated by the Bishop of Llandaff on Thursday week. The church consists of a nave 50 feet long by 26 feet wide, with an octagonal turret at the south-west angle, surmounted by a spire with an open traceried belfry-stage, a south porch, a chancel 26 feet long by 15 feet wide, and vestry adjoining. The style is Decorated Gothic, with flowing tracery. Advantage has been taken of the rapid fall of the ground to the east to obtain considerable height for the eastern end, which faces the road. The walls are constructed of Penant stone, with Combe Down Bath-stone dressings. The building rises from a bold spur base, and is buttressed at the angles only by somewhat peculiar sloping buttresses set diagonally to the walls: it is lighted by a four-light west window, moulded and recessed with flowing tracery, and by three two-light traceried windows in the south side of the nave, and two similar ones in the north wall. The chancel has also a large three-light traceried east window, and two windows in the south wall, one having a single and the other double lights with traceried head. The roofs are all of wrought Memel, stained, and the ceiling, which is paelewise between the rafters, tinted blue. They are slated with Bangor slates of purple and blue, arranged in bands of these colours. The whole of the gables are coped with freestone. The turret rises to the height of about 70 feet, and is octagonal on plan, with a buttress on four sides, terminating with a pediment beneath the belfry-stage, which consists of a moulded two-light traceried window under a crocketed canopy, on each fall of the octagon forming a light open crown, whence springs a tapering spire, banded with alternately several plain courses of masonry, and several with slightly projecting weathering. The interior, which accommodates about 200 persons, is fitted with open loose benches of Memel stained, a Caen stone font, with pillars of red Devonshire marble, and an oak cover with wrought iron-work. The passages are paved with red and black Staffordshire tiles. The pulpit is of Caen stone, intended to be carved. The chancel is fitted with carved benches, placed longitudinally as stalls. The architects were Messrs. Pritchard and Seddon, and Mr. Norman Brown was the contractor.

**Wrexham.**—St. Mary's Roman Catholic Church was opened on the 19th ult. The edifice has been erected at the sole expense of Mr. R. Thompson, of Wrexham, and together with the house, or vicarage, has cost about 5,000*l.* The church is in the Decorated style, and is built in Minera stone. It is above 100 feet long by 48 feet in width. The plan includes chancel, nave, aisles, side chapel, tower, large and small sacristy, and a confessional between sacristy and aisle. The presbytery is situated on the south side, and is a building capable of accommodating three priests. The chancel is separated from the nave by a highly-wrought and deeply-moulded arch, with carved and moulded jambs. The nave consists of five bays, the arches of which are moulded, and enriched with hood moulds. The nave is lighted by means of a clerestory, the windows of which are circular, and are sub-divided into four quatrefoils, variously arranged. The aisle windows consist of two lights, with ornamental tracery. Two vanishing arches separate the chancel from the lateral chapel. The east window commences at the spring of the roof, and consists of a large circle of tracery fixed in a triangular frame. Side windows are arranged to throw light on the altar: they extend into the pannelled roof, which has the appearance of a chancel clerestory. The nave and aisle roofs are supported

\* It may be of use to those of our readers who desire to become better acquainted with waterglass and its applications if we mention that Messrs. Sicherer and Hausman, of No. 17, Eschschop, analytical and consulting chemists, state they have given special attention to this subject.



on principals, springing from stone corbels, which will eventually be carved. The architect is Mr. Pugin.

**Derby.**—A committee, headed by Lord John Manners, M.P. has been formed for the purpose of carrying out the restoration and enlargement of St. Peter's Church, Derby. Mr. Place, the architect employed, estimates the total cost of the restoration at 2,400l.

**Sherburn.**—The church of Sherburn, near Leeds, has been re-opened. It has undergone some extensive alterations and improvements, in course of which many specimens of Norman architecture have been brought to light. The roof, which is high-pitched, is entirely new, and the windows have been filled with cathedral and white glass, in ornamental patterns. The two galleries in front of the tower have been pulled down, and the body of the church filled with uniform pews of oak, and stained deal, with much increased accommodation. Some stained glass has been put in the west window of the tower. Much of the old Norman work has been restored.

#### ARCHITECTURAL PUBLICATION SOCIETY.

WE notice the recent issue of the second part of the works for the year 1856-7, consisting of thirteen plates in illustration of some of the articles in the letter C of the "Dictionary of Architecture," now in course of publication by the Society. These plates, like their predecessors, are full of useful and instructive material: some of them, we may say, are too crowded, but the subjects in them have been carefully disposed, they each have fair effect. The first plate gives us a "Canopy" covering the chair of the Cardinal Archbishop in the Duomo at Naples; a useful example, but poorly lithographed. Under the title, "Capital," we have two plates, which exhibit twenty-three specimens, chiefly of the Mediæval period: these will surely not be the last under this heading, although some difficulty will perhaps be experienced in obtaining sketches of worthy subjects which have not been already placed before the student. "Chimney-pieces" follows in a fine but greatly dilapidated specimen from Lillithgow Palace, presenting three openings, which may be advantageously compared with those in Viollet-le-Duc's dictionary. We may say as much of the four other examples of a more domestic character, from Cashel and Kilmallock, in Ireland: these afford very useful hints to designers for ordinary purposes. "Chimney-top" ought to be the last plate (it is the fourth given) devoted to this almost exhaustless subject, but the committee has acted rightly in so often directing the attention of the profession this way. The present selection of twenty-three examples affords ample scope for alteration and improvement: many of the originals, it must not be forgotten, are used only for wood or charcoal fires. "Church," exhibiting an interior view of San Spirito, at Florence, designed by Brunellesco, is a tinted facsimile of a very careful drawing made on the spot by Mr. F. P. Cockerell, and affords some interesting bits of perspective effects: it is also good as a whole, and a record of a very carefully planned building. We should be glad to see many other examples of these interiors: they afford a large field for study, if selected with regard to their architectural merits, and not merely for artistic effect. The same observations apply to a following plate of "Confession," the example being selected from Fontane's "Chiese di Roma," an expensive, and, we believe, somewhat rare work in England: the plate is filled with the view looking up into the church of San Martino ai Monti. It will be inspected with interest even by those who have visited that great city, as travellers do not generally see this out-of-the-way church, which is well worthy of a careful inspection. The treatment, of the ornamental portion especially, in the lithograph, is, we suppose, the result of a careful imitation of the original Italian print: it reminds us of a style of engraving of former days in England. The plate of "Church-plan" presents nineteen examples of various types, commencing from the old basilica of St. Peter's (fifth to ninth century), and ending with St. Stephen's, Walbrook (1672). It is interesting to note the use of the circular apse from fig. 1. to fig. 13; the examples from Italy, France, and Germany; and the square eastern termination of York Cathedral, and the other churches selected from England. Boston Church, Lincolnshire (fig. 18), it will be remembered, has the merit of being the largest church in the United Kingdom without cross aisles. "Columbarium" reminds us of the manner in which many of the Roman houses kept together the remains of their families, servants, and clients. Instances of private mausolea will occur to the memory of all our readers, and something of the same kind is being gradually reintroduced on various scales in our public cemeteries. "Corbel" gives four very picturesque and suggestive examples for the country practitioner. To give examples of "Cornice" without dimensions, approximate or otherwise, and their height above the surface

of the ground, is unsatisfactory: the specimens, however, are suggestive. The "Cortile" of the great hospital at Milan is shown in the next plate. Many of the details of this building will be found in the earlier parts. "Crocket" forms the subject of the last plate, and this we shall hope to see additionally illustrated, those before us being confined to one style, that of late French-Gothic; but they are charming examples of their class.

The materials for these plates have been, like those of former parts, collected and arranged by Messrs. Hansard and Lewis, through the kindness of the owners lending the original sketches. On the present occasion these consist of (taken as the plates occur), Messrs. C. F. Hayward, H. B. Garling, T. H. Lewis, H. R. Newton, W. Lightly, C. Fowler, jun.; R. H. Shout, of Yeovil; J. H. Walton, Professor Donaldson, F. P. Cockerell, Oct. Hansard, E. Blatchley, J. M. Lookyer, E. H. Martineau, H. R. Ricardo, Ewan Christian, T. Roger Smith, and from the sketch-book of the late A. J. Green, lent through the kindness of Mr. Tite, M.P. Our impressions, for some reason, are not all printed so sharply as usual: in fact, the work on some of the stones is not executed with Mr. Bedford's usual effect: a heavier and uncertain hand appears to have worked on many of the plates with a result less happy than that of previous parts. To speak more plainly, they are very ill done.

#### THE LATE WILLIAM DEANE BUTLER, ARCHITECT.

THIS gentleman, whose name as an extensive practitioner of about forty years' standing is familiarly known to the Irish public, expired suddenly at his residence, Stephen's-green, Dublin, on Saturday night, the 23rd ult.

When Mr. Butler commenced his profession, after quitting the office of the late Mr. Beazley, to whom he served a portion of his apprenticeship, the number of architectural practitioners in Ireland was exceedingly limited; and, after a comparatively short time, he found himself in the enjoyment of an excellent share of business, which he preserved up to the time of his death. Mr. Butler was universally acknowledged to be an architect of considerable ability and excellent taste; and has left some permanent memorials to his fame behind him. Amongst his chief public works may be noticed the Roman Catholic churches of Roscrea and Monasteran, both important edifices, in the Gothic style; the terminal buildings at Dublin of the Dublin and Drogheda Railway, of Italian character; the new cathedral at Kilkenny, recently consecrated, and the façade of the Palatial Mart, at Sackville-street, Dublin. Independently of these, Mr. Butler had an extensive private practice, and designed some mansions for the resident nobility and gentry; to his skill, too, Dublin is much indebted for some handsome shop-fronts.

The profession in Ireland may reasonably be considered to have lost its "father," as we believe Mr. Butler was its oldest member, and certainly he has left behind him a greater number of pupils practising as architects, and of eminence, than did any other.

For many years this gentleman held the appointment of architect to his Excellency the Lord Lieutenant, but we believe the emolument (if any) was very trifling.

The immediate cause of death seems to have been paralysis of the throat, and although Mr. Butler had, some twelve months since, an attack of that malady, which affected other portions of his body, his call from life was very sudden and unexpected. Mr. Butler has left a wife and thirteen children.

#### EXTENSION OF THE FOUR COURTS, DUBLIN.

THE new buildings about to be erected for the Courts of Appeal and Incumbered Estates will occupy a site at the rear of the present Four Courts, and at the point where Pill-lane unites with Morgan-place. They will comprise a block with two projecting wings, and present a frontage to Pill-lane of about 130 feet, by a depth of 80 feet. In style the architecture will be consistent with that of the existing buildings, but of plainer character, having chiselled granite stone fronts with rusticated basement, simple architraved windows, and a continuous entablature of architrave frieze and cornice, with blocking over the same.

In height they will be three stories, exclusive of basement, which is intended to contain court-keeper's apartments, document rooms, urinals, water-closets, &c. &c. On the principal floor will be a grand stone staircase, and a corridor running through, off which are situated the various secretaries' and clerks' offices. The first floor will have a similar corridor, as also the commissioners' courts, each 25 feet by 25 feet, with ornamental ceiling and circular dome light; also a proposed court, to be erected hereafter, 39 feet by 38

feet; and masters' and examiners' rooms, clerks apartments, chambers, &c.

The courts are to be carried up two stories in height. All the buildings will be, as far as practicable, fire-proof, and the floors of the wide spans will be supported on a series of metal girders, with hollow brick arches. The ceilings in the basement are of arched brick also; and the foundations are to have a considerable quantity of concrete, formed of Medina cement, air slaked lime, clean fresh-water sand, and fine and coarse gravel. Over the commissioners' courts, iron lattice girders of 3-inch by 3-inch angle iron at top and bottom, with 3-inch by 3-inch tension and extension bars, so disposed as to form a series of equilateral triangles, will be introduced. The buildings to be finished against the 1st of June, 1859, under a penalty of 25l. per week. The probable expense will be 15,000l. or 16,000l.; and the plans have been furnished by the architect to the Board of Works. The commissioners are about applying to Parliament for a Bill to make considerable improvement in the locality of these buildings by the construction of a new street from the western side of Greek-street to the eastern side of Old Church-street, the closing up of Chancery-place, Mountrath-street, Morgan-place, and portion of Pill-lane, and the pulling down of a number of old houses. Should this be obtained, considerably greater building works will be undertaken than those now being contracted for, and the frontage to the quays greatly increased.

An iron tramroad is to be laid down from Stephen's-green to Round-town, the leading thoroughfare at the south side of Dublin.

#### ELM, NEAR WISBEACH.

##### THE ECCLESIASTICAL COMMISSIONERS.

SOME of our correspondents are concerned to hear that in the repair or restoration of the chancel of Elm Church, slates are to be substituted for the old covering of lead. If we have been correctly informed, the facts are these:—The parishioners of Elm, in a laudable spirit, and at considerable expense, have cleaned, repaired, and restored the interior of their large and interesting church, and they intend to follow up this good work by abolishing the present unsightly pewing, and substituting for it plain but substantial, uniform, and commodious benches. It would appear that the chancel is in the hands of the ecclesiastical commissioners, as appertaining to a "unexpended" canonry, from which the commissioners derive an addition of 1,200l. per annum to their already enormous revenues. The fittings of the chancel were mean in the extreme, and the east window and the roof were modern work of the poorest description: still the roof was loaded, which is the case, with but very few exceptions, in all the churches of the district.

The parishioners applied to the commissioners to repair and restore this chancel: the sum required is but a portion of one year's receipts; and, although we admit that, as trustees of church property, the commissioners might not be always justified in expending money upon mere ornament, we are strongly of opinion that they should act faithfully as conservators of the buildings which have fallen into their hands, and not suffer, under any pretence, the lead of a church or chancel to be stripped and exchanged for slates.

#### LONDON DIRT AND LONDON WANTS.

I ASK leave to point out to Londoners, by your help, a metropolitan peculiarity which never fails to strike me, a provincial, as strange, offensive, and unnecessary. I mean the stupendous filth of London public places. I do not mean honest, necessary dirt, but neglected, accumulated, remediable dirt. I observe that in many districts the dirt of the roadways is left upon the surface from day to day, week to week, and month to month; stinking dust in dry weather, and, in moist and wet weather, stinking compost, varied, from an adhesive greasy paste, through different degrees of dilution, to the *ne plus ultra* of abomination, a liquid slush, about the thickness of pea-soup. I notice holes and corners,—poor alleys and courts, *cul-de-sac*, &c. where this dirt is piled and plastered in masses, like drifted snow. I see (to take merely one or two instances) the staircases and stairs leading from the London-bridge approach on the City side, to the street below, in a state of dirt utterly disgraceful. I cannot suppose cleansing has approached those places since they were opened as public ways. I see the pavement of the Piazza, in Covent-garden, caked over with dirt which seems to be never removed. I want to know why all this nastiness need prevail. I suppose rates are paid, or might be levied, for the expenses of cleaning the streets and public places; and it is inconceivable to me, living, as I do, in a provincial town of considerable size, containing plenty of the elements of dirt, but where the dirt is removed



day by day, that Londoners submit to this hideous nuisance of omnipresent, overwhelming dirt.

Allow me to offer a suggestion on another subject, occurring to me as an occasional visitor to London. Country people in town, leaving their hotels in the morning, and not returning to them till night, and, I doubt not, many Londoners away from home all day, greatly feel the want of establishments here and there, one of which I will describe as follows, viz.—a clean, airy, well-lighted, and comfortable room, where rest may be taken, newspapers read, meetings appointed (perhaps with a private conference-room attached), and letters written, where refreshments may be had of the inebriate sort, more satisfactory than buns and ginger-beer on the one hand, and less costly and elaborate than the chop-house provision on the other, and where closets and washing-basins are at hand. I am disposed to think that a company would be a very profitable speculation, that had for its object to provide such places, thoroughly well-appointed, and attended by good servants, at moderate prices.

Other London wants are dining-places, or restaurants, of a sort very superior to the present average. After the club, to which comparatively few belong, there is at present nothing but the expensive hotel, the crowded, bustling, overheated, popular feeding place, the detestable gloomy chop-house, or the bad imitation of the French restaurant. The cheerful and comfortable restaurants of Paris might be very advantageously imported, and the *cafés* too. Let any one remember the various occasions when, on walking home at night from the theatre, or any other place, a desire has seized him for a glass of beer, or a cup of coffee. Out of certain districts where such things may be had, at places of an uncomfortable and unpleasant appearance, if not of a questionable character, nothing is open to him but the gin-shop.

I fear to have already written more than you will like to print, but I never visit London without noticing the above shortcomings and wants, and this statement of them might set some people to devise and carry out the remedies.

A PROVINCIAL.

#### "BIG BEN'S" ANCESTORS.

THE following extract from the "Repertory of Antiquaries" may afford amusement, and be of interest to your readers. It will show that one (at least) of Big Ben's ancestors was cracked like himself, and that he only inherited an infirmity which is constitutional in the family. And though, of course, every one knows that the courts of law are now so immaculate that the Westminster judges do not require the same prompting to duty that their predecessors did, yet, may, when they hear the voice of Big Ben, congratulate themselves that he is speaking for an object different to that of his unfortunate ancestor, Tom of Westminster.

"The bell called Tom of Westminster hung in a strong clock-tower over against the door of Westminster Hall, and about the beginning of the last century was granted to St. Paul's, whether it was removed, and stood under a shed, or was really there, the steeple was cleared of the scaffolding and fitted for such an ornament. The clock had not long been up before the bell was cracked and new cast, but with such luck success that it was thought necessary to take it down and repeat the experiment."

The clock-tower was standing till 1715; the occasion of its being built Mr. Madland's "History of London" gives as follows:—

"A certain poor man, in an action of debt, being fined the sum of 13s. 4d., Redulphus Igham, Chief Justice of King's Bench, commiserating his case, caused the court-roll to be reduced to 6s. 8d., which being soon after discovered, Igham was amerced in a pecuniary mole of 800 marks, which was employed in erecting the said bell-tower on the north side of the said enclosure (New Palace Yard), opposite Westminster-hall gate, in which tower was placed a bell and a clock, which, striking hourly, was to remind the justices in the hall of the fate of their brother, in order to prevent all dirty work for the future."

P. C. N.

#### ON NUMBERING HOUSES AND NAMING STREETS.

In a paper on various subjects read by Mr. Verelst last year, before the Liverpool Architectural Society, but not published, some remarks were made on the numbering of houses and the naming of streets, from which, as the subject is again occupying attention, we may make a few quotations. Much of what was read had chiefly a local interest, confined to Liverpool and Birkenhead, but our quotations will refer to what was said as to the points in question in various towns on the Continent.

In Paris, the numbers in those streets that are parallel with the river commence and continue on with the current of the stream, whilst those at right angles with the river commence at the river end, the numbers being odd on one side and even on the other, always commencing on the left hand.

The town of Maastricht, upon the Rhine, was utterly destroyed during the lamentable wars of the Palatinate, and more recently again during the French wars, and has been several times ruined: it is therefore quite modern town, and is rebuilt with all the streets at right angles. This afforded an opportunity for an effectual system of numbering the houses and naming the streets; but the system adopted is peculiar, for the streets, which are

eleven in number one way and ten the other, at equal distances apart, have no names at all. In the centre of the town is one great street, running from the river to the palace. The first row of blocks of houses parallel to this street, on each side, is numbered 1; the second row of blocks of houses on each side, parallel to the first, is numbered 2, and so on. But taking the blocks in cross rows, on one side of the above-mentioned great street, the row nearest to the palace is lettered A, the second B, and so on; and on the other side of the street, the row nearest the palace is lettered L, the second M, and so on. Thus a letter and a figure are necessary to define any block of houses. In each block the houses are numbered 1, 2, 3, &c. Thus, in looking in the Mannheim Directory for a person's residence, you will find, for instance, C 3, 8. This means No. 8 in the block which is defined by the mark C 3. The letter C shows on which row of blocks it is as taken one way, and the figure 3 shows in which row of blocks it is as taken the other way. This system may appear complex in description, but is not so in reality: it could, however, only be applied in towns so regularly built as Mannheim.

At Geneva, I am informed, certain streets are numbered, not upon the doors, but carved upon the curbstones outside the footpaths, or, as they are absurdly and improperly termed in Liverpool, *parapets*, which do not mean footpaths, but walls breast high. The difficulty here is, that if two houses be thrown into three, a number is wanting; or if three houses be thrown into two, or one, there is a surplusage of numbers. It has been suggested that, instead of numbering the houses, it would be a good method to put the numbers upon the curbstones, as at Geneva, but at distances exactly five yards apart. These would not always come exactly opposite the front door, or perhaps even opposite the house, whilst stones are more than one number would come before one house. But they would always be near, if not exactly opposite, a house or door, and would always be permanent, however the houses themselves might change. It would identify localities very exactly, and certain events took place at such number, and it could be referred to on a map. It would also save the length of every street, and you might in a cab or car ascertain the number of yards in an entire journey. If a certain street contained fifty numbers, it would be instantly known to be 250 yards long. If you made a turning at No. 40, you would have travelled 200 yards along that street, and, by repeating the same in each street, as you proceeded, could easily ascertain the total distance you had traversed.

Nothing can be more inconvenient or absurd than the repetition of the same name for many streets.

It is interesting to see how little the French have been guilty of this folly. Rarely are two streets of the same name; but they have, instead, endeavoured to do honour to all classes of men, not even confining themselves to the great names of their own country. For instance, they have the Rue Watt, Rue Newton, Rue Lord Byron, Rue Marie Stuart. Their naturalists are represented by the Rue Buffon, Rue Linnæus, Rue Cuvier; their writers by Rue Voltaire, Rue Molière, Rue Boileau, and Rue Lamartine; their battles by the Rue des Batailles, Rue d'Arcle, Rue d'Austerlitz, and more recently in Rue d'Alma, Rue de Bonaparte, Rue de Waterloo. How high and wild sounding are such names as Rue des Pyramides, Rue Castiglione, Rue de Babylone, though it must be admitted some of their names are not a little odd, as, for instance, Rue Châlon-Neuf (Rue des Bons Enfants), or 24th of July-street (Rue de 24 Juillet), Soft Sigh-street (Rue de Bel Respiro), English Gentlemen-street (Rue d'Anglais), English Ladies street (Rue d'Anglais). Among their few instances of repetition is one that must be admitted to be somewhat irrelevant, viz. Hell-street, Hell Boulevard, Hell Barrier, Hell Market.

#### THE CONVERSION OF WOOD BY MACHINERY.

INSTITUTION OF CIVIL ENGINEERS.

In the paper read on the 17th inst., "On the Conversion of Wood by Machinery," by Mr. G. L. Moleworth, a comparison was drawn, showing the more rapid progress of wood conversion in America than in England. This was ascribed to the greater cheapness of material and the scarcity of skilled labour in the former country, which gave a stimulus to invention; whilst in England the case was different, the material was comparatively expensive, and skilled artisans were abundant. Nor was the system of the subdivision of labour as yet fully carried out, the conversion of wood being hitherto in the hands of a class who could not employ much capital in machinery, or keep it constantly at work to the greatest advantage, even when they had it; and, at the same time, the prejudices of foremen and the combinations of workmen had operated powerfully against the introduction of new machines. Many of the machines of English construction had been of too costly a character, and in designing them sufficient attention had not been given to economy of the converted material. The cheap and simple character of the American machines was mentioned, and some of their characteristic details were described.

An account of the different kinds of saws, as well as the form of teeth, the modes of setting them, and the velocities adopted in England and in America was given, and the silent friction feed, the American "Moley" saw, the author's arrangement of a revolving wedge, the methods of cross cutting, the pendulum saw, Macdowall's circular saw, the pendulum, the dish saw, the scroll and the band saws were briefly described, and mention was made of Mr. Exall's improvement in the band saw.

The author then proceeded to enumerate the varieties of planing-machines, which he classified under five heads, viz.:

1. The reciprocating plane.

\* Murray's "Handbook."

2. The fixed cutter plane.
3. The rotatory cutters, on Muir's principle.
4. Ditto with vertical axis, on Bramah's plan.
5. The socket plane.

In describing these machines, the action of the carpenter's plane was compared with that of the machines, and some of the methods were mentioned by which its action had been attempted to be assimilated in the machines.

The planing machines were shortly described, as well as the different forms and speeds adopted in England and America.

It was argued, that in order to produce good work the conditions to be fulfilled were, a high velocity of cutters, not too rapid travel of work, a solid bed to cut against, the working parts well balanced, the bearings steady, and the angles of the cutters properly determined. The author condemned the usual empirical method of determining the angle of the cutters, and insisted upon the desirability of taking into consideration the nature of the material, as well as the character of the work, and the diameter of the cutters, in fixing upon the proper angle. He then stated those angles which he considered best for different kinds of woods and varieties of work.

Brief descriptions and diagrams, illustrative of the principles of the following processes and machines, were then given:—

1. The American shaping-machine, with pattern and concentric collar guide, for planing irregular work.
2. The different methods of tenoning with chisels, or with an assemblage of circular saws, or with the ordinary tenoning cutters.
3. The copying-machine for producing fac-similes of a cast-iron pattern of any irregular shape, by means of rotatory cutters made to recede or advance by the pattern, which revolves simultaneously with the work.
4. Hughes's spoke-machine with tubular cutter-shaft, and moveable cutters, acted upon by a traversing pattern.
5. The railway key-machine, invented by the author, for cutting the taper simultaneously on two sides of the key.
6. Stiel's air-machine, as used at Chatham Dockyard, for roughing out the oak with swivelling circular saws, and finishing it, by a series of cutters acted upon by a "feeler iron," so as to produce a varying form of blade and "loom."
7. The methods of dovetailing on Wilmshurst's plan, by a series of rotating cutters, and on Burley's plan, by a series of reciprocating chisels and circular saws.
8. The method adopted in America of forming the dovetail on the mitre.

The different boring-tools were noticed, and an account given of the modes of mortising, by giving motion to the chisel and reversing it, as well as the forms of mortising-chisels, and the devices for clearing the mortise of chips.

The subject of timber bending was briefly mentioned, and a description given of Hookey's mode of bending ships' timbers, Meadows's patent for bending veneers into and around the sharp angles of mouldings, and Blanchard's method of bending all kinds of timber, by applying end pressure to it, while it was wound round a cam of the desired shape.

In conclusion, the author considered that wood conversion was not fully developed in this country, and hoped that this paper would direct the attention and ingenuity of engineers to the subject.

At a meeting on November 24th, an appendix to Mr. Moleworth's paper was read. After reference to the manufacture of casks by machinery, Hamilton's machine for sawing curved ship timbers was described as having an inner gate, and the blade so hung as to allow of a transverse as well as a swivelling motion, for curvilinear work; the log being so arranged as to be turned on its axis whilst travelling, and to be cut to any desired bevel. Green's method of adapting an indicator roller to this machine, for cutting variable bevels from a small scale diagram, was also mentioned.

A description of Jordan's wood-carving machinery was given, with his method of producing a species of floating movement in the table carrying the pattern and the work, under a frame furnished with a series of drill-cutters and a tracing knob, so as to produce several copies simultaneously from one pattern. The plan of carving under-cut parts by swivelling the pattern and work simultaneously, was also described.

A description was afterwards given of the ingenious machines, also invented by Mr. Jordan, for making the frames of school slates, at Colonel Pennant's quarries, near Bangor. The logs of American birch were first cut up by frame saws: the planks were then seasoned for six months, and were afterwards cross-cut to proper lengths, passed over a series of circular saws and grooving cutters alternately fixed on the same shaft: the mortises and tenons were cut in



two other machines: the end mortises, tenons, and shoulders were then cut, and the slates encircled by four of these pieces. The frame thus formed was then laid against two stops, and a pair of drills descended upon the opposite corners, making two holes: it was then reversed, and another pair of holes were made in the other two corners, pegs were inserted, and the work was completed.

#### PROGRESS IN THE CITY OF BAHIA, BRAZIL.

A COMPANY has just been formed for the provision of a patent slip, a jetty, capable of coaling the largest steamers, bonded warehouses, and stores, for the deposit of coal. Lient. Robert Grundy, C.E. has been nominated by the Board of Directors, to act as directing manager, and the works are to be commenced forthwith, and carried on with such activity as can be compassed in this somewhat sluggish locality. Another company is talked of, to carry out the project of boring a tunnel through one of the hills in the city, in order to form a communication between the lower level of the city adjoining the bay, and an inland portion, from whence there will be an easy access to the upper level. The city of Bahia varies very considerably in level, and there is now only one very steep and dangerous carriageway, connecting the upper and the lower portions. The tunnel will have to be cut through solid granite rock, and although no very astonishing work in Europe, it will be attended with difficulty in Brazil. Mr. Vignoles, the engineer, has proposed and recommended this plan, which, when carried out, will be an important and valuable improvement to the city. Bahia is already provided with water-works, and some of the fountains which were purchased at the Paris Exposition have been placed in the squares. The buildings are well constructed, and in many instances considerable excellence is shown in the design of the fronts of the erections in the commercial parts of the city. The churches are very numerous, some of them being well worthy of notice in an architectural point of view. The Church of the Conception is interesting, being principally formed of blocks of marble, which were sent over from Europe ready worked, marked, and numbered so as to be put together in accordance with the design of the European architect. The paving of the streets is excellent, but not so heavy and substantial as we are here accustomed to, as they have in Bahia very little heavy traffic. There is abundance of stone, which is admirably adapted for building and paving purposes. Some of the ancient brick Dutch paving may still be seen in the older parts of the city. The population of Bahia exceeds 150,000.

#### DIFFERENCE IN BUILDERS' TENDERS, AND THE CAUSE.

IN my letter to you on the subject of the difference in the amount of builders' tenders, nothing could be further from my intention than to bring forth any personalities. I am very glad the subject has excited considerable attention, not for this particular case, but on a general principle, with a view, if possible, to end a practice which strikes every one as being most remarkable, and only accounted for in one way, that some builders must be "rogues," either to themselves their creditors, or their employers.

It would be useless for any one to attempt to answer all the "perplexities of some persons," or the sophistries of others. I can have nothing to do with "fulness of quantities"—they ought to be, and I believe they generally are, correct ones,—“or the mistakes of others,” “the pricing of all items,” “or only part.” My experience tells me, if I have to build a straight wall, it is worth so much a rod; if it has a circular corner, there is so much more labour to pay for; if it has a stone coping on the top, it must be paid for by some one; and if only a brick on edge in cement, it will cost more than if done in mortar.

Now, what are the facts before us?

Some gentlemen require an alteration or a rebuilding of their business premises: they apply to an architect, and he proceeds with his work, and produces certain plans. Surveyors are appointed, and they take out the quantities, and it will be to their disgrace if they are not correct, and neither full nor short, as they are to be well paid for their work. In my estimate, the amount put down for them was 67l. 4s. 3d. besides “20l. for expenses of lithographing.”

The bills of quantities are delivered to the builders, and each contractor is at liberty to examine the drawings, and make himself master of the nature of the works to be performed. Now, all starting fair, what is the result? one builder asks 4,341l. another 2,800l.—something more than 62 per cent. difference.

I am not going to draw any inference between these two tenders, as it would be placing myself in the power of those gentlemen whom I have repudiated,

the “bad calculators and the non-calculators;” but I take an estimate (my own) which is just the medium between the two, being 24 per cent. above the lowest estimate; and agreeably to my promise I have here-with sent you one of the bills of quantities, moneyed out the same as I had previously moneyed my own estimate, with 24 per cent. off each item, which brings the amount to 2,800l. I pledge myself they are all on the same scale, and you may judge yourself if I speak the truth, when I say that they are none of them remunerative, large or small, but generally on an average 12 per cent. under prime cost. The labour must be paid for in full, or the works will stop on the first Saturday night this is omitted, and the labour is generally considered to be about one-third of the amount of the contract—thereby throwing all the loss on the materials, which will amount to about 22 per cent. on their cost. I can perfectly understand how a tradesman, being a brickmaker as well as a builder, may sink the merchant's profit to make in himself a safe market, how a man with ready money may make a cheap market, and how savings are made in many ways, but I will defy any builder, be he whom he may, to make a profit out of such a schedule of prices.

J. F.

#### THE JOINERS' STRIKE AT MANCHESTER.

DEAR MR. EDITOR,—I beg to lay before you, and the readers of your valuable Journal, the facts respecting the strike now pending between the joiners and their employers in Manchester. Up to last May, our time of working was sixty hours per week, in summer, and fifty-five in winter, averaging fifty-eight per week the year through. In May, after much bickering and partial strikes, the employers acceded two hours per week; that was, to leave off at one o'clock on Saturday; but on the 5th October, the employers issued new rules without consulting us, that we must work fifty-seven hours per week, winter and summer alike, to commence on the 10th. After allowing us a week's grace, and we coming to no definite settlement (we having offered to work fifty-six hours per week, or fifty-eight in summer, and fifty-three in winter), we were turned out on the 19th. Since then we have been offered the arbitration of three architects, which we have refused. The mayor has kindly offered to interfere. We have refused that also at the suggestion of a letter in the *Guardian*. Altering the time to fifty-eight hours per week in summer, and fifty-five in winter, averaging fifty-six hours and fifty-one minutes, the year through, our employers offered us that which was treated with contempt.

Now, in the name of common sense, or humanity, can you, Mr. Editor, or any of the numerous readers of the *Builder*, point out any other rational mode how such unfortunate disputes can be settled? By so doing you will oblige, with many more,

A JOINER UNWILLING ON STRIKE.

.\*. The rational mode of settling a dispute is that which the joiners have refused,—namely, a reference to impartial third parties, in whom all have confidence. As to the “common-sense” to which our doubtless well-intentioned correspondent appeals, we are forced to confess that we find very little of it in this unfortunate affair. Is this a moment, when building operations are being discontinued, when capital is not to be obtained but with the greatest difficulty, and a dark winter threatens all of us, for men to give up their employment on a question of one hour's labour a week? A joiner, or any other workman,—engineer, clergyman, or prime minister,—has the fullest right to take his labour to the best market, to obtain the full worth of his special skill, which worth is of course materially influenced by the amount of that skill elsewhere obtainable; but surely it would not be contrary to “common sense” to learn, before rejecting the offer of one customer “with contempt,” what its real value in the market is, and to feel tolerably assured that a better customer could be found elsewhere.

#### THE MACHINERY FOR ART-EDUCATION

SIR,—The thanks of all parties interested in a wide-spread art-education are due to you for your able and impartial article in the *Builder* of the 21st ult. on the remuneration of masters of schools of art. There can be no doubt that if art itself is to be respected in this country; if it is ever to be wedded to industry; if it is ever to go hand-in-hand with our trade and commerce; if ever, as an integral portion of education, it is to rank with literature and science; its teachers must be enabled to hold a respectable, as they do hold a responsible, position in society. And there can be as little doubt that if the scale of payments is founded upon the minimum on which a youth, fresh from the training-class, can be induced to make an uncertain venture, to scrape together a precarious income, by five pounds here and ten

pounds there, an allowance of 8s. per head upon national school boys, and 30s. per head upon national school teachers, who happen to pass an examination in drawing at the end of the year; if, I say, the remuneration of the art missionaries of the land is to be provided in this precarious way, can the country expect that art-education will, after all, result in becoming anything more than a delusion and a snare?

There is but one portion, perhaps, of the article to which I have alluded, from which I must beg leave to dissent; that is, the part that suggests that a considerable allowance should be made to an art-school for a year or two, and then be discontinued. I am afraid that, like many theories on this matter that look well enough upon paper, this would never answer in practice. I think those who have had any experience in provincial schools will agree with me, that the third and fourth years of a school's existence are those that are just the most trying to it: I mean a school that is working fairly and honestly under the same master; not one of those that are always found under a new name, and seem to be ever writhing under the spasmodic convulsions of continued fresh starts.

Before a school is opened, care should be taken that there is next to a certainty of its affording a respectable and increasing income to a master; that there shall be a fair field for the exertions of a clever and active man; and that there should be no fear, if he does his duty, of poverty or overwork preventing him from holding up his head in the town in which he is placed.

It is very well in theory to say the people should manage all this for themselves; that if they want art-education, they will pay for it, &c. The opposite theory is now pretty well established; and as Mr. Cole states in his lecture, reported in your number of the 21st ult. p. 666,—“As the people have felt their wants, and have had power to express them in Parliament, so the central authority has been called upon to administer to these wants; and it is the Government itself, rather than the people, which has endeavoured to obtain and preserve as much local co-operation as possible.”

And since it is now pretty generally conceded, that a useful function of the Government is to aid in the art-education of the people, it merely becomes a question how this desirable object is to be effected. The Department of Science and Art, when it came into power, found, no doubt, in the schools of design, amongst much that was genuine and good, some abuses: it found some men (they were, however, only exceptions) in the receipt of considerable salaries, who were not devoting themselves to their duties with zeal and efficiency; and it is scarcely to be wondered at, that looking at abuses of the old system, the measures of the new one should be too sweeping; therefore, from paying masters fair salaries, with considerable carelessness, it came to paying them none at all, or only such an amount as should secure their connection with the Department from being entirely thrown off. It would not be doing the Department justice if it were not added, that an untiring energy was at once directed to the reform of abuses, and a system of training and examination instituted, so as to secure masters fitted for their work.

Much credit is also due to the Department for the recognition and adoption of parts of the scheme of the Committee of Council, such as the pupil-teacher system, which may be the means, in provincial schools, of obtaining a maximum amount of instruction, with a minimum cost; and what is chiefly required now is, that the Department should adopt some of the better and bolder, as well as the more *petite* portions of the committee's scheme. For instance, under the Committee of Council on Education, any master of any training college in the kingdom may come up for examination in one of various subjects, such as history, literature, geography, &c. and on passing a successful examination, become possessed of a lectureship on his own particular subject, which carries with it an augmentation of salary of 100l. a year, to which (I believe I am right when I say) the college to which he is attached is bound to add at least 150l. per annum. Now, I trust the nobleman and gentlemen at the head of the Department would meet with no contravention, if by adopting this arrangement they asserted their conviction, that the time had now arrived when art is by all considered worthy of ranking high in our educational arrangements, and especially as art-knowledge has at last been recognised by the Oxford University in its middle class examinations.

The masters of schools of art should also be enabled to feel that some system has been fixed upon, and that there is no fear that by means of arbitrary changes, they may be deprived of even those small money payments now made to them by the Department. There seems a want of common honesty in making an agreement with men one month, and



breaking through it the next; or in inducing men, on certain conditions, to go through a laborious course of study, to obtain certificates that shall carry certain money payments with them, and then changing these conditions for others that in some towns it is impossible for them to fulfil. If the whole question is reopened before the country and Parliament, as it is not unlikely it may be, the injustice of the alteration will surely be insisted on.

Another matter in which the Department might safely follow the Committee of Council, is in the assistance rendered to local effort, in the erection of suitable buildings for carrying on schools of art. If a common elementary or national school for poor children is required, under certain conditions, a large portion of the expense will be met by the Committee of Council: why should not this be the case with Schools of Art? Why, if a local committee are ready to guarantee, say half the cost of building, to submit the plans for the approval of the Department, and promise to provide the greater part of a master's income,—why should not the State step in and give the requisite assistance? It surely would not be an unworthy outlay of a portion of the educational grant, and what is fair at Brompton can scarcely be false at Birmingham, or other provincial towns.

The Department of Science and Art deserves success, and with men of talent at its head, and established firmly as it now is, might throw off some of those ultra-economical shackles that at first restrained it, and by a wise and discriminating liberality (not confined to the metropolis), consolidate itself in public esteem and support. A CERTIFICATED MASTER.

#### THE WATER SUPPLY OF THE SUBURBS.

LEA-BRIDGE.

It has been already stated that a portion of the Hackney marsh has been visited with fever and other preventable diseases, a circumstance not to be wondered at when it is considered that the dwellings are planted without care on the damp soil, and have no thorough means of drainage. I would, however, just now direct attention to the water supply of this already considerable number of houses, which promises shortly to increase. It has been remarked that the East London Water Company have formed a canal from the Lea river at a distance of several miles nearer to its source than this point, it having been shown that the large quantity of sewage discharged from the rapidly increasing district near this stream had rendered it unfit for human use; and notwithstanding this, and that the clear filtered water of the company is within a stone's throw, and could be laid on to all these houses at a small annual cost, the inhabitants of the Lea-bridge take their water from the polluted part of the river, or from doubtful wells.

The matter of the water supply, if provided for the poor of the metropolis, still requires great care, and it should be borne in mind, although the fact has not been generally noticed, that at the time of the breaking out of the last attack of cholera at Newcastle-on-Tyne, the ordinary water supply ran short, and a considerable part of the town was supplied from the Tyne, which was then little better than a huge sewer.

In connection with Lea-bridge, why should the poor people there be obliged to drink water which has been distinctly shown to be unfit for household use?

It is difficult to deal with property already built, and which is often so fettered with ground-rents and other charges, that it is not a source of much profit; but people's lives must be taken care of, and certainly prompt measures should be carried into effect to prevent the growth of such neighbourhoods as Caning-town; and in order to effect this, no time should be lost in extending the circle round London which will come under the sanitary law? Some will say, "Why make a limit of any districts? But render it unlawful, in any part of the kingdom, to erect groups of dwellings which cannot be properly provided with the means of health."

LOOKER-ON.

#### THE APPRENTICESHIP SYSTEM.

At the annual general meeting of the Royal Scottish Society of Arts held last week, Professor George Wilson delivered an address, in the course of which he referred to a paper on "The Apprenticeship System," read recently by Mr. James Robert Napier at Dublin. The subject of Mr. Napier is to urge, in the plainest and fullest terms, that the system of long apprenticeships is a total mistake, wrongful alike to the apprentice, the journeyman, the master, and the public. He discusses the system from many points of view, and, before announcing that he has totally abandoned it, states that "it is evident that apprenticeships or long engagements are quite unnecessary, and that a business is conducted much more quickly without such." He

quotes, in special proof of this, two facts—namely, that the unrivalled tools of Mr. Whitworth, of Manchester, are made by men who at one time were common laborers, and that the engines on board all the vessels built by his father since 1852, when a great strike occurred in the engineering establishments of Glasgow, have been made by "men who were originally house-carpenters or joiners; that many of the best workers in his ship-yard were hand-loom weavers, and that half-starved nailmakers from St. Ninians, near Stirling, made passable riveters in about a month." It is impossible not to be startled by such a statement. If Messrs. Napier and Whitworth can procure fit hands for their nice work, said Mr. Wilson, by subjecting intelligent men to a few weeks' or months' remunerated training, instead of passing boys through five and seven years' apprenticeships, then the sooner—so far at least as the master is concerned—the latter are abolished the better. Mr. Wilson's own experience in the medical profession went with Mr. Napier.

#### COMMUNICATION ON RAILWAYS.

For years we have urged the necessity of enabling passengers to communicate with the guard. The want of the means to effect this is a blot in the system. Numerous suggestions have been made, but railway directors have not felt impelled to adopt one of them. Will Mr. W. Symons, of Dunster, be more fortunate than those who have preceded him? His plan is simple, and has much to recommend it. It provides an inexpensive method of allowing any passenger to communicate to the guard, whilst a train is in motion, a reason for wishing to stop the train. Two methods are provided for. The apparatus is simply a cord passing along the centre of the carriages, under the roof, with proper arrangements to facilitate the abstraction or addition of carriages at intermediate stations, and to allow for the contraction, expansion, and vibration of the train while in motion. There is also provision made to enable the guard to reach the carriage from which he has received the signal. This arrangement consists of a rail which, when not in use, hangs at the side of the carriage, and only projects a few inches, but may be extended to about 18 inches, so as to admit of the guard walking with perfect safety between it and the carriage; and it may be applied to all existing English carriages at probably a smaller expense than the French method. The second plan dispenses with the outside rail, enables a passenger to send a note to the guard, who, if necessary, may reply without leaving his seat, and should he see sufficient cause he can then communicate with the driver to stop the train. The apparatus for which could be applied to any carriage for a very small sum. Objections may be suggested, but we are very much disposed to think they could be obviated: at any rate the system ought to be tried forthwith on one of the lines.

#### NOTES UPON IRON.

South Staffordshire is not now that fiery pandemonium-looking place that it is when money is cheap and commercial credit is good. Between thirty and forty blast furnaces that a month ago were darting forth monster tongues of flame, each one apparently vying with his neighbour in the fierceness of his endeavour to fire the welkin, now stand huge black spectres metonymically used by the offended gods into monuments of their own folly; if not of that of some of their owners also, in fancying themselves millionaires by being permitted to use a portion of the money of those who are such. Taking the number of the furnaces recently put out at thirty, that number would be a decrease of those in fire in September to the extent of one-fifth; and, reckoning the make of each furnace at 110 tons, no less than 3,300 tons of pig-iron per week are now being manufactured in the great iron-making district of South Staffordshire short of that which was being made two months ago. A further reduction will take place.

In manufacture iron a much greater diminution in the quantity made must be noted than in the case of pig-iron. We think that we should be quite willing to mark in setting down the malleable iron works as being employed to the extent of only half their capacity. Say that there are 2,080 puddling furnaces at these works—furnaces where only pig-iron is used—and that by each furnace there is on an average eight tons of puddled iron made every week, we have a weekly reduction of 8,120 tons of puddling iron, or half the quantity that was being made at the beginning of the quarter.

It is evident from these figures that the make of pig-iron is now largely in excess of the demand, and that, to prevent stocking to a large extent, a much larger number of blast furnaces must be put out.

The effect which such a reduction will have upon the labour of the district will be very serious. If every blast-furnace in operation affords the means of

support to sixty families, we have, in the putting out of thirty blast-furnaces, 1,800 able-bodied men unemployed, who, with their families of four in each, become 6,400 persons without bread. Then, if upon each puddling furnace in work there are employed four able-bodied men having families, and two able-bodied men without families, we have a total of 6,090 able-bodied men, who with the families indicated, number 18,270 persons, in all 24,670 deprived of the ordinary means of support, in connection with the immediate manufacture of pig and malleable iron in South Staffordshire. There are very few malleable iron works in South Staffordshire in full operation; we do not know of more than three or four.

Nothing was done at Wolverhampton or Birmingham on Wednesday and Thursday in the way of buying and selling; and scarcely any orders have been received during the week.

At Wolverhampton, the association of coal masters in that district resolved to reduce the wages of their men—the main coal workers—from 3s. 3d. to 2s. 9d. a-day from the 19th December.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On Monday, 30th November, the ordinary general meeting was held at Grosvenor-street, Mr. G. G. Scott, V.P., in the chair; when the following Fellows and Associates were hailed for, and duly elected:—Mr. Gilbert R. Blom, Mr. D. Addington Cobbett, Mr. Thomas Cundy, jun., Mr. Robert Kerr, Mr. John Norton, and Mr. W. Haywood, as Fellows; Mr. C. B. Arding, Mr. Francis Edwards, Mr. F. Hyde Pownall, Mr. Robert Willey, and Mr. W. Lightly, as Associates.

Professor Donaldson, a foreign corresponding member, presented a work entitled "Iconographie des Chapiteaux de Palais Ducal à Venise, par Mr. Burges, Architecte, et M. Didron, aîné, Directeur des Annales Archéologiques." A bird's-eye view of the port, docks, and garrison, at Kingston-upon-Hull, was presented by Mr. Digby Wyatt.

A newly-invented lock, called the "Inaccessible Lock," was exhibited and explained by Mr. Blomket.

A paper, copiously illustrated, was then read by Mr. W. A. Boulois, Associate, "On the Foundations of some of the Metropolitan Bridges of the River Thames;" and, after a short discussion, with thanks to the reader of the paper, the meeting separated.

#### ARCHITECTURAL ASSOCIATION.

At a meeting held on Friday, November 27th, Mr. Norton in the chair, a letter was read from the town-clerk of Plymouth, relative to the competition for the new Guildhall and Public Buildings, stating that he had been unable to return an answer to the request for a copy of the plan and particulars of the competition, in consequence of a resolution of the town-council, passed on November 9th, directing proceedings to be suspended for further consideration. The clerk also stated, that the subject had again been considered at a meeting of the council, held on the 18th, and he was instructed to state that it had been resolved to postpone further proceedings for the present.

A long discussion took place relative to the desirableness or otherwise of locating the Association at the proposed new buildings of the Architectural Union Company, in Conduit-street. Ultimately, a resolution was passed empowering the committee to meet the promoters or directors of the Union Company, with a view to an understanding of terms.

Mr. Wigley read a review of the "Instructions on Ecclesiastical Buildings," by St. Charles Borromeo.

The Chairman announced that at the next conversation a paper would be read on the "Progress and Development of Gothic Architecture," by the Rev. C. B. Hall.

#### METROPOLITAN BOARD OF WORKS.

At the last meeting of the Board, some architectural and building matters were considered and disposed of.

Approval was given for the construction of a factory, 94 feet by 50 feet, two sides to be constructed of iron and glass, by Messrs. Cubitt, the builders, for Messrs. Ely. The factory is situated near to Messrs. Cubitt's establishment, at the back of the Gray's-inn-road, and is to be used for the manufacture of newly invented wire cartridge, in making which no powder will be used upon the premises.

The Board refused an application from Messrs. Scovell, for the construction of an iron bridge or gallery, across Tooley-street, Southwark, having come to the conclusion that such structures and projections are obstructions to light and air.

Approval was given for construction of a winter shelter for the Atlantic telegraph, at East Green-



wich, by Messrs. Glass and Elliott, 850 feet long by 30 feet wide, and 12 feet high, to contain two coils of cable of 200 miles each, so as to protect the cable from frost and snow.

A special committee of the Board has been appointed to consider and report on the course to be pursued with reference to the provision of suitable premises for transacting the business of the Board.

A committee has also been appointed to take into consideration the "Amendment of the Building Act," and also to report with a view to dealing with the matter in the ensuing session, whether any, and what alterations may be desirable in the local management and Building Act.

Mr. Leslie has given notice of motion to the effect, that the Metropolitan Board of Works do offer three premiums, amounting together to 1,000*l.* for the best plan (by public competition), for the surface drainage of the metropolitan area, and conveying the rain directly into the Thames, or its tributaries.

#### THE STAGE AND MUSIC.

"Richard II." at the Princess's.—A crowded audience assembled at the Princess's Theatre on Monday night to welcome the resuscitation of "King Richard II." after its temporary withdrawal, to make way for the later revival of "The Tempest." We were glad to see that during this short recess the scenery had neither lost its brilliancy nor the actors their energy; but still more gratified were we to observe that the audience evinced as thorough an appreciation of this most successful combination of architectural and costumed display, in strict accordance with period and precedent, as when the first of those grand revivals, that have conferred so bright an *éclat* upon the managerial career of Mr. C. Kean, proved how greatly artistic impersonation might be enhanced by rigorously correct scenic accessory, and how strongly public taste was inclined for the innovation. The same scenes that formerly riveted attention, still seem to retain their accustomed influence over the beholder. Neither the impressive solemnity of the bedroom in Ely House, with its "storied" walls, bay-window, and capacious chimney, nor the effective simplicity of the room in the Duke of Lancaster's Palace, with its equilateral vault, and coloured accessories; neither the decorated arches and elaborate panelling of St. Stephen's Chapel, nor the Norman vaulting of the crypt at Pomfret; the feudal grandeur of the Castles of Flint and Pembroke, nor the smiling landscapes that form so strong a contrast with them; neither the gabled streets of old London, nor the quaint characteristic representation of the Duke of York's garden at Langley;—none of these have yet lost their admirers or their freshness. Mr. and Mrs. Kean's reappearance in their old parts was greeted with that genuine applause only accorded to artists of the first rank. Of Mr. Kean's conception of the trying character of the most unfortunate of monarchs, we need only say that it contained all those nice gradations of emotion,—hope, surprise, majesty, humility, rage, and resignation,—according to the alternations of his feelings and his fortunes, which have rendered his impersonation of the fallen king one of the greatest triumphs of his long and arduous career.

Julien's Promenade Concerts.—We confess we have held the present series of these popular entertainments in less esteem than any that have preceded it. A thinness in the occupants of the private boxes, and a cold apathy in the audience generally, may have conducted to our unfavourable impression, but a dissipationate view of the case may easily prove to the most obturate that such apathy is a result, and not a cause, and that the remedy may easily be found in a better programme. The interest in concerts that are not based upon the works of the great masters must ever be but ephemeral. The "Indian Quadrille," too, has done more harm than good, and if it has drawn at all, it must have been from curiosity and not from merit, being lamentably and infinitely the worst descriptive piece of writing that ever fell from the pen of its clever author. A week's festival, comprising the works of the great masters, Haydn, Mozart, Beethoven, Weber, Mendelssohn, and Spohr, now, we believe, in progress, will go far, it may be hoped, to redeem the coldness of this year's audience, and also produce a golden harvest for the entrepreneurs. It is in combination with the immortal works of such writers, that the lighter music of lighter pens may be combined, and a delightful result obtained, but without the former ingredients in full proportion, audiences may be brought together, but will never be thoroughly satisfied.

Iron, Hardware, and Metal Trades' Pension Society.—A concert is to be given at the Hanover-square Rooms, on Wednesday, December 9th, for the benefit of the Iron, Hardware, and Metal Trades' Pension Society, when Madame Bessano, Miss Messent, Mr. Montem Smith, Mr. Frank Boddia, Mr. Chapel, Mr. Elliot Galer, and the members of the

Vocal Association, consisting of 300 voices, will sing, and Madame Coulon, Herr Goffrie, and the Distin Family, will play. The object of the society, which has now been established fourteen years, is so good, that we should on that ground alone invite our readers to give their aid, but beyond this the concert promises to be an excellent one: so that on merely selfish grounds tickets may safely be taken. Mr. George Pitt, of 3, St. Stephen's-terrace, Bayswater, is the secretary.

#### Books Received.

Galleries and Cabinets of Art in Great Britain; being an Account of more than Forty Collections of Paintings, Drawings, Sculptures, MSS. &c. Visited in 1854 and 1856. By Dr. WAAGEN. Murray, Albemarle-street, London. 1857.

This fourth and supplemental volume of the "Treasures of Art in Great Britain," by the Director of the Royal Gallery of Pictures at Berlin, is acknowledged by the author not even yet to complete his voluminous account of the art-treasures in this country. He described those contained in his first three volumes as "almost incredible in amount;" but the vista rather opens upon him instead of closing as he progresses; and doubtless, although he does not promise it, we shall in good time have yet another supplemental volume, containing "a considerable harvest," and "much that is worthy of notice," but admittedly not yet recorded.

In spite of his foreign origin, and the occasional but excusable blunders into which on this account he here and there falls, Dr. Waagen has really done wonders in making our art-treasures known to ourselves; and though it is perhaps questionable whether a native art-savant would have been allowed such access to them as he has had, what has already been done cannot but show us what might be done by one possessing the advantage of being an Englishman, added to such art-learning and powers of research as Dr. Waagen possesses.

Meantime, we have not only to thank this gentleman for the ability and perseverance, as well as the success, with which he has ferreted out, and fixed on record, so many of our art-treasures, but also, to some extent, for the grand exhibition of these treasures which has just been closed at Manchester; and it is to be hoped that the British public will repay him by purchasing copies of the fruits of his labours.

The most important of the collections mentioned in this fourth volume are:—The British Museum,—its additions and changes; the National Gallery; Lord Yarborough's pictures in Arlington-street; Marquis of Hertford's; the late Mr. Morrison's; Sir Charles Eastlake's; Lord Overstone's; the Duke d'Aumale's; Lady Warwick's, at Gatton-park; Duke Folkestone's; the Prince Consort's, at Kensington Palace; Lord Amherst's, Knole-park; Mr. Banks's, Kingston Loecy; the Duke of Northumberland's, at Alnwick and Sion; the Duke of Newcastle's, at Clumber; the Duke of Portland's, at Welbeck; and additional Notes upon MSS. both at Sir John Soane's Museum and University College, Cambridge.

Home Pastime; or, the Child's own Toymaker, with Practical Instructions and Illustrations. By E. LANDELLS. Griffith and Farran, corner of St. Paul's Churchyard.

We have here an ingenious and by no means unuseful development of the card-castle science. It will teach children of ten or twelve years old something like a constructive use of their hands, which may be of practical service to them in after years when the stern realities of life take the place of childish fancy and amusement. How many helpless, helpless mortals do we see grow up to be utterly dependent on others, in every little trifling hand's-turn or petty job that may require to be done, just from want of a little constructive education of the hand in childhood. The objects to be cut out and put together in Mr. Landells's amusing "Home Pastime," are engraved in outline shapes on cardboards, a number of which are enclosed in an envelope, along with the little tract of instructions. The forms are various, from Prince Albert's model cottages to a wheelbarrow, and comprise even such articles as railway and other carriages, engines, tenders, omnibuses, and perambulators, windmills, sledges, bedsteads, &c. By help of a sharp-pointed knife, a pair of scissors, and a little gum, these are convertible into good imitations of the veritable article in the solid, and may then be coloured according to nature. The tribe of little men and women are much indebted for this new pleasure to Mr. Landells, and, indeed (it being an ill wind that blows no one any good), to the illness of his own little son, for whose amusement this very decided improvement on card-castle building was invented.

#### Miscellaneous.

SMOKE PREVENTION.—Messrs. W. B. Wilkinson and Co. of Newcastle, writing to the local *Correspondent*, thus state their experience in smoke prevention:—"As regards common bakers' ovens, which we use for calcining gypsum, we have just made what we think a very manifest improvement, at a cost not exceeding five shillings. We have formed the roof of the furnace, two feet in length from the door, of a fire-clay lump, pierced its entire length with two apertures, opening above the furnace door, through which there passes a strong current of air over a red-hot surface; this, becoming heated, impinges against a vertical surface opposite the apertures, and is driven down on the top of the fire, improving, as we think, very much its heating power. We use small coals, and although a little smoke is made at the time of firing, it passes away in a few seconds after the closing of the door. The perforated fire-clay lump we have used is simply a sewer bottom, or invert block, turned upside down, and as this is now an article of commerce, and easily procured, we hope this communication may induce others to try it. We don't know that there is any originality in the plan."

ALMSHOUSES FOR INDIGENT RESPECTABILITY.—Every almshouse founded by the benevolent in the course of time becomes a home for many who would either have to bear the greatest privation in their old age, or find an asylum in the workhouse, which, from the ignorance and depravity of many of its inmates, must be a wretched abode for those who have been in superior circumstances, and trained in moral and refined habits. For the small sum of 500*l.* or 600*l.* such a home could be erected and endowed, and I wish there was such an asylum, or a pension society, in every parish, for the aged of good character in reduced circumstances,—the scum of society being inmates of the workhouses, which are not, I repeat, it homes for those persons of good character who have the misfortune to be destitute in their old age. In Wales there are very few. Were the gentry of the principality to unite to erect some, under the presidency of the Prince of Wales, for the natives of the twelve counties, it would be a great comfort to many aged persons in the decline of life. In the Isle of Wight, too, some might be founded for decayed natives, or residents of that part of the kingdom, her Majesty and Prince Albert being respectfully solicited to become patrons; and I should like to see some erected in every county as a county institute, irrespective of the local institution of the same description. With your permission, I would respectfully entreat the support of the ladies of England and the clergy to increase such institutions, believing them to be useful, and, in common with our other undertakings, to improve the comfort of our poor suffering brethren.—A.

RAILWAY MATTERS.—On the Cornwall Railway, at Saltash-bridge, the hydraulic presses are said to be most successfully employed in lifting the span of the bridge recently floated across the Tamar. The west end was raised 3 feet in about two hours, and the masons were set to work in building up underneath it. The second span is making progress.—The traffic returns of the railways in the United Kingdom for the week ending November 21, amounted to 421,670*l.* and in 1856 to 419,430*l.* showing an increase of 2,240*l.* The gross receipts of the eight railways having their termini in the metropolis amounted to 169,889*l.* and last year to 173,141*l.* showing a decrease of 3,252*l.* The decrease on the Great Northern amounted to 2,408*l.*; on the North-Western to 1,819*l.*; on the Blackwall to 27*l.*; on the South-Western to 214*l.*; total, 4,468*l.* But from this must be deducted 116*l.* the increase on the Eastern Counties; 882*l.* on the Great Western; 182*l.* on the Brighton; and 86*l.* on the South-Eastern; together, 1,216*l.* The receipts on the other lines in the United Kingdom amounted to 251,781*l.* and in 1856 to 246,289*l.* showing an increase of 5,492*l.* in the receipts of these lines.

DRAINAGE SCHEMES.—Mr. Lipscombe denies that his hydraulic plan can have anything to do with the atmospheric system of a correspondent of last week, but we are unable to go into the question.

THE MARYLEBONE CEMETERY AFFAIR.—Sir: Observing in your paper of the 14th November date, under the head of the "Burial Board and the Contractors for St. Marylebone," that I am one of the contractors in the job, I beg to inform you that I have nothing whatever to do in the affair more than being one of the unfortunate securities. My surveyor stated that he would write to you on the subject: should he have done so, please not to take any notice of this; otherwise, please to insert this, as it stands to do me a considerable deal of harm in my business.—J. CULVERHOUSE.

\* \* \* Mr. Culverhouse is in error. He is described in the article in question simply as one of the sureties. To make the matter clear for him, however, we print his letter.



**CHELTENHAM SCHOOL OF ART.**—On Tuesday evening, the 24th, a joint *conversazione* of the School of Art and the Literary Institution was held in the rooms of the latter Institution, the chair being occupied by the Rev. C. H. Bromby, principal of the Cheltenham Church of England Training College. The large room of the Institution was hung with paintings and drawings by the School of Art pupils, engravings, photographs, &c.; while on the tables were exhibited an extensive and interesting collection of stereoscopic views, a series of specimens of ivory turnings, galvanic and electro-magnetic apparatus, and microscopes, with a large assortment of microscopic slides, and objects, including those minute triumphs of photography which, almost small enough to be covered by the point of a large pin, and almost invisible to the naked eye, become, under the microscope, perfect portraits, and groups of figures. During the evening a paper was read by Mr. James P. Knight, the master of the school, "On Schools of Art," the object of which was to set before the public the advantages to be derived from art education, and the facilities offered for the acquirement of it, in the present schools, reference being made to the establishment of the Schools of Design, and the extension of the scheme into the present Schools of Art, under the Department of Science and Art. A vote of thanks to Mr. Knight, for his paper, was proposed, in flattering terms, by Mr. W. M. Terit, J.P. A paper was also read by Mr. Pottinger, "On Photography, in connection with the Fine Arts," for which a vote of thanks was proposed by Dr. Wright.

"**STEAM SUPERSEDED.**"—Professor R. Ramsay Reingle's application of atmospheric power is thus enthusiastically described by himself, according to the *Oxford Journal*:—"I resolved to get made a rude model of a two-yard pea-shooter, with a trumpet mouth-piece, and a large open conic emission-end. I prepared a piece of lead board to act as a roller on four wheels. At one end of this rude car I nailed a piece of wood as a head-board, against which the conic mouth at the end of my pea-shooter could come in close contact. My experiments electrified me with delight. I could blow my car many yards in a moment, as if struck by a mallet or a cricket-bat! I then placed about 26 lbs. in the form of a large scuttle of coals, and blew the car so weighted over a Turkey carpet about 16 inches almost momentarily. \* \* \* This was the beginning of my invention of a compressed air-engine eighteen years ago. It is now greatly simplified. In an apparatus, consisting of a cylinder, 12 inches in length, with a bore of 1 inch, when the piston, at the last twelfth of an inch, shall have compressed the 144th part of a foot, the density will assume sixty atmospheres, and will support or raise 680 lbs. Now, suppose I submit this vast compressed quantum of air to rarefaction up to 750°, which is equal to 21 times, then it follows that as 21 x 680 = 13,230 13,230 lbs. are raised, if, by hydraulic pressure, I submit that minimum portion of air to a compression of 144 atmospheres (the density adopted by the Portable Gas Company twenty years ago), then, without any rarefaction, the small quantity of air will lift or support 79,720 lbs.: when rarefied up to 750°, or 21 times, the increase is thus: 1 x 79,720 = 1,674,120 lbs. This my engine can effect in half a second, which equals in a minute 100,894,400 lbs. At 200 atmospheres (easily obtained) the total amount raised in one minute will be (nearly) the same. My invention will give me, represented by a much greater amount. When my engine is at work, I can guarantee that it shall work eight and four centuries. It takes thirteen hours before the piston reaches the last inch in the cylinder, and it will cost only half a minute to revolve and set in motion again. Let us suppose that to propel a ship of 2,000 or 3,000 tons burden, globes or cylinders be charged with 200 atmospheres, and kept in the hold. This amount of noiseless, quiescent, terrific power, can be taken to any part of the world. [THE ROYAL MUSEUM AND LIBRARY AT PEELE'S HALL, SALFORD.—The ninth annual report of this rising institution has been printed. The committee regulate the borough council on its progress, "far surpassing all former experience." The total issue of books from the whole Library, during the twelve months ending the 31st of October, amounted to 147,814 volumes, divided in the following manner, viz.—

Reference Library .....	84,342 volumes.
Lending Library .....	63,472 "
Total .....	147,814

These issues exceed those of 1856 by 5,330 volumes, 1855, by 82,357; of 1854, by 82,452; and of the aggregate issues of 1850 to 1853, by 89,143 volumes; and, taking the present extent of the volumes in the library actually available for readers at 20,000, it follows that the whole of the books have circulated, during the twelve months, rather more than seven times; giving a daily average of 493 volumes, from both departments of the Library.

**IMPROVEMENT OF PUBLIC TASTE.**—There is no branch where bad taste is more prevalent than in household furniture, &c. In the theatre of the School of Design at Brompton there is an excellent plan of placing pieces of carpet, printed calico, wall-papers, pottery, glass, plate, &c. of bad design with tickets attached, explaining where the false principles exist. Now, I think there ought to be something of this sort in the Museum, thrown open to the public, with patterns of good design beside them, in order that the public taste may be gradually improved, which is at present at such a low ebb, that even those people who do go into the Museum go as a sight,—they are not improved in taste. The public of the nineteenth century is so ignorant of beauty that they must be taught the very rudiments by examples and tickets. —C. DE VAUGIER.

**RESTORATION OF MANCHESTER CATHEDRAL.**—The churchwardens propose a complete restoration of the whole building, and appeal, not only to the parishioners of Manchester, but to the inhabitants of the whole diocese, for assistance. They state that they are desirous the work undertaken should be strictly a restoration of the ancient edifice. The works necessary to complete restoration of the exterior are the rebuilding of the tower upon its present site, renewal of the stonework of north clerestory to correspond with the south, renewal of the pinnacles, and extensive repairs of the stonework of the walls and Mullions of the windows, and renewal of the lead roof upon the nave and side aisles. The interior, also, requires thorough renovation, the free pews in the nave re-arrangement and renewal, and the unsightly wooden galleries in the nave and aisles should be removed. The plans have been approved by the bishop and the dean and chapter. The estimated cost is 18,000*l.* or 20,000*l.*

**GREEN WALL PAPERS.**—In reference to a subject on which some discussion lately took place in several of the journals of the day, including the *Lancet*, which had urged attention to the injurious effects resulting from the use of green papers, coloured with some green salt containing arsenic, usually the arsenite of copper, or Scheele's green; the same paper now states that after experimenting on the subject, it appears that "green papers containing arsenic, when carefully manufactured and well-sized, may be employed with safety in the papering of rooms. There is one precaution, however, which ought to be observed; that, is not to make use of the room for a few days after it has been papered, and until it has been well ventilated, and this for the following reason: during the operation of papering, some of the arsenical pigment becomes mechanically detached, and is suspended for a time in the atmosphere of the room, and is, of course, inhaled by those who occupy it. We are inclined to attribute to this cause some of the injurious results stated to have followed the papering of rooms with certain descriptions of green paper."

**THE KILKENNY ARCHEOLOGICAL SOCIETY.**—The November meeting of this very active and thriving association was held in the Tholsel at Kilkenny, on the 4th ult. The Dean of Ossory in the chair; when twenty new members were elected, and two societies also received into the community of membership. A number of donations were presented, and various objects of interest exhibited. Several papers were read, including one of a series on the topographical department of the Ordnance survey of Ireland, by the Rev. J. O'Hanlon, the present subject being the county of Wexford. A paper on "The Scandinavians in Leinster," by Mr. H. F. Hore, was presented.

**DAMPNESS IN HOUSES.**—The great evil seen and felt from the damp walls of most new houses, might readily be prevented by adopting a course I witnessed at the village of Cowden, and said to be carried out by a builder, I think, of Penshurst, in the county of Kent. It is to mix hot lime and sand as mortar, with the addition of coal tar, and put one layer of the said composition to receive the course of bricks previous to the plate for ground-floor joists. —ANTI-DAMPER.

**SHOULD ARCHITECTS SOLICIT?**—I want to know whether it is customary for architects to solicit orders from "persons about to build?" After a fire which lately occurred at Wolverhampton, an enterprising firm took the earliest opportunity next morning of "requesting the favour," &c. &c. I don't think this is usual amongst professional men, because I have seen in your papers complaints against architects making their art too much of a trade; but as the above firm make a frequent practice of doing it, even when other parties are engaged, I may be mistaken in my notions, so "I want to know you know." —TITE BARNACLE.

**GAS.**—Will the Builder kindly submit the following knotty query to its learned readers? How is the plural of *gas* formed? Some orthographers make it *gases*, while others contend that it should be formed by adding merely *es*,—*gases*,—in accordance with the rule that nouns in *s* form the plural by adding *es*; and also, as the word *gas* has the sharp sound of the double *s*, the *es* in the plural is all that is required. —J. B.

**NORFOLK AND NORWICH ARCHEOLOGICAL SOCIETY.**—The quarterly meeting of this society was held on Tuesday in week before last, at the Guildhall, Norwich, Sir J. P. Boileau, bart. in the chair, when the Rev. C. R. Manning read a communication from Mr. A. D. Bayne, on "The early settlers in East Anglia," a subject illustrating the connection of ethnology and archaeology. After some discussion on the subject, the members inspected a variety of curiosities on the table, and Mr. Fitch exhibited a curious British vase. The Rev. C. R. Manning exhibited a drawing of the font at Ranworth, dated 1706, which then had a lofty pyramidal cover, painted in red and other colours. Mr. Daveney contributed a drawing of a Latin inscription upon a bell in Plumstead church: the letters presented grotesque figures.

**MR. MOREWOOD'S GREAT TUNNEL SEWER.**—Notice has been given that application will be made to Parliament in the coming session for leave to bring in a Bill to authorize the appointment of commissioners, or to incorporate a company, with power to construct the intercepting tunnels proposed by Mr. J. J. Morewood, for the conveyance of the metropolitan sewage into the marshes east of London for deodorization and utilization, and also to obtain the necessary funds, either from the Consolidated Fund, or by levying rates. Mr. Morewood calculates that he can thus dispose of the whole question of the metropolitan sewage, at one-third of the cost of the B\* plan. It seems very doubtful, however, whatever be the relative merits of the proposed plan, whether, in the present state of the question, Parliament will pass such a Bill as this.

**OXFORD ARCHITECTURAL SOCIETY.**—A meeting of this society was held on Wednesday, 25th ult. the Rev. L. Gilbertson, B.D. of Jesus College, in the chair, when the Rev. E. Hobbhouse, B.D. of Merton College, read a memoir of Walter de Merton. The lecturer regretted that no architectural remains of Walter de Merton's works were now in existence, except the choir of his chapel and small portions of his college. His little hospital at Basingstoke has entirely disappeared. At Maldon, neither in the church nor manor-house is there anything to revive the remembrance of the great and bountiful man who nursed his infant institution there.

**THE ROYAL SOCIETY.**—At the anniversary meeting held on the 30th ult. the balance-sheet showed that the receipts for the year, including sale of 1,500*l.* Consols, had been 4,841*l.* 18*s.* 4*d.*; the payments (including expenses of removal to Burlington House, 1,299*l.* 19*s.* 10*d.*.) 4,814*l.* 12*s.* 8*d.* The principal point in Lord Wrottesley's address was one made by Faraday in a lecture at the Royal Institution a considerable time ago—namely, setting forth how one set of observations may be found to bear on another set made elsewhere on a totally different subject, as illustrated by thirty years' daily observation of the sun's spots made in Germany, and a set of observations on the dip of the needle, the two showing decidedly a certain connection. M. Chevreul, whose works on colour are known to our readers, received the Complément medal.

**ON RETAINING THE SEWAGE OF THE METROPOLIS FOR AGRICULTURAL PURPOSES.**—May I suggest that, if no plan has yet been propounded, or out of the many plans no comprehensive and satisfactory scheme has been devised and perfected, for the solution of this great question, an invitation should be given to all the scientific and practical men of the day to attend a conference, to be held either in London, Manchester, or Birmingham, to consider the different methods proposed, and to discuss the whole question in all its various bearings; at which meeting all the maps, sections, plans, and other documents should be produced, in order that some conclusion may be arrived at which shall be satisfactory alike to the agriculturist and the inhabitant of the metropolis?—T. G. D.

**MEMORIAL IN GATESHEAD CHURCHYARD.**—It will be remembered that the church of this town suffered from the effects of the terrible fire and explosion which swept away an immense mass of buildings, and destroyed many lives. The open space on both sides of the Tyne still remains, and presents the desolate appearance of a town which has suffered a long bombardment. Like the Great Fire of London, this visitation followed closely upon the ravages of pestilence, and has been the means of demolishing many unwholesome places. In order to preserve the memory of this event, a number of blocks of granite, of large size, and other matters, which were cast high into the air and fell through the roof of the church, have been grouped together, and inscribed as below:—

"These stones, with burning timber and red-hot iron bars, were blown into the church by the explosion in Hillgate, Oct. 6th, 1854. Weight of the largest stone, about 6 cwt."

The adjoining church, which so narrowly escaped entire destruction, and has been repaired, although but few traces of antiquity remain, is of early date, and has various historical associations.







# The Builder.

VOL. XV.—No. 775.

**T**HEN the notice of the manufacturing districts, lately given in these pages,\* reference was made to the general merit observable in recent works in our art, and to the suggestive value of the particular steps taken in those localities, in the direction of sanitary improvement. Our readers will probably feel interested in some account of the features and points of importance in the matters in question. In the present state of sanitary science especially, it should be serviceable to look at the conditions in many separate districts, and to note the measures which are adopted. It may be difficult or impossible to apply the means in one case, to the wants of London; but the inquiry and comparison should have some value—whether in affording the model for our application, or only the timely lesson as to a course which we should here avoid.

Our reasons for seeking to draw attention to the circumstances of the manufacturing districts of the north, were very obvious ones arising from the still extending growth of their industry, and their now vast capabilities towards any object, whether in art, science, or general social amelioration. The simple facts that we gave,—the statement that now, after a progress of about seventy years, one-eighth of the population of the United Kingdom are dependent upon the cotton manufacture,—would show the importance of very frequent attention to a locality where there must be so great a power for making or retarding national prosperity, or exerting influence on any tributary object. It is stated that there has been an increase, between the years 1838 and 1856, of 411 cotton factories, in Lancashire and Yorkshire. The magnitude of many of these buildings may be inferred from what we before stated. Of the whole number erected in those districts, during the same period,—as of the buildings appropriated to woollen, worsted, silk, and other textile manufactures,—we have no account; but the importance of these last, numerically, as structurally, must be considerable. They would include the mill of Mr. Titus Salt, at Saltaire, near Bradford, of which we gave a view some time ago. Although, in the opinion of those who are best acquainted with the subject, the manufacturing districts have never passed through such a crisis as that which they are suffering from at this moment, there is no probability that the growth of the interests and capabilities which we have alluded to, will be diminished. The facts, then, that there are being added to the buildings of our country—in factories, warehouses, or offices—so large a number as may be inferred, and that wealth has accumulated which there is the disposition to have applied to the purpose of architecture, or other branches of art, are important in several different aspects.

As to art, in some of the classes of buildings mentioned, great progress has been made; in others, it has yet to be effected. As regards house-decoration and furniture, perhaps in no part of the kingdom has the same liberal expenditure, and, indeed, good taste, been manifested, as in Manchester and its immediate neighbourhood. But, the circumstances of the

population and industry of the districts are important, no less in relation to sanitary science than to art. The very prosperity to which we have referred, is attended with results in addition to the gradual encroachment on, or extinction of, the beautiful work of nature. London has been called a collection of towns, rather than one city; and there is much that is analogous to the metropolis in the populous part of Lancashire: the vicinity and intercommunication of its towns being practically the same as in the case of the districts of London. It is to the condition of the locality as to sewerage, and the disposal of refuse, that we are about to direct primarily, attention.

The population being distributed in towns five or twenty miles apart,—with many intervening mills; print, dye, or bleach works; and groups of habitations,—one “area of drainage,” viewed on the principle shadowed forth in the Report of the Referees on the Drainage of the Metropolis, would include the greater part of South Lancashire, and considerable portions of Cheshire, Yorkshire, and Derbyshire, or of all portions of the country draining into the Mersey and its tributaries. The proportion to number of buildings and population, of house-refuse which would have to be dealt with by sewerage, must, however, for reasons which will shortly appear, be now considerably less than that of the sewage of London. But, on the other hand,—assuming the application of the present metropolitan principle of drainage, and of outfall and disposal of sewage,—the difficulty in the case of the area of the manufacturing districts would be much greater. That is, on the plan of collection into main outfall-channels, or ejectment into streams—methods which it is not shown would be departed from in fact, by either of the proposals for the London sewerage now under discussion—the length and sectional area of constructed outfall-channel, or stream, or both, in Lancashire, would be required to be enormous in dimensions; whilst, we apprehend, nothing is more clearly shown by evidence, than the fact that the bulk or concentration of sewage-matter itself creates an evil, or that length of sewer permits decomposition and the noxious influence which it is the object in future to avoid. We have felt compelled to refrain from positive recommendation of either of the schemes for the sewerage of London, feeling that neither of them offered the real and satisfactory “solution of the difficulty.” This we may at least say, that if the principle of main outfall-channels—assuming the proper discharge from the point of outfall into the sea—be the correct one, it should be capable of being applied to the large area of South Lancashire, now finding its drainage emission at the mouth of the Mersey. Our readers will not have failed to notice that there are opinions, from medical officers, tending in favour of the outfall by numerous sewers, even those into the river Thames, in contra-distinction to the principle of interception and main outfall-channels; and, could the various difficulties in the rise of the tide in the sewers, or the storage of the sewage, and the deposition on the banks, be overcome, it is not clear that, with the immense volume of the river, the principle of numerous places of emission would not now manifest itself as more advantageous than the other plan. The object, however, is to find the correct principle. Such principle, when arrived at, like all good principles, will be remarkable for its simplicity. It will be applicable to the case of all populous districts, like the metropolitan area, or the area of South Lancashire,—although subject to required modifications in plan and contrivance. But, if it be taken as decided that the great volume of the river Thames requires to be freed from sewage, what must be the necessity arising from the present, or the possible, condition of the Lancashire rivers and water-

courses, which, although the houses are drained very partially on the London system, are now charged with filth; and whose shallow streams often have little perceptible flow, or never, except in time of flood, fill the width of their channels. The sanitary condition of the manufacturing districts would be worse than it is, and far worse than the condition of London, were the same system of house-drainage in operation as that which has during late years here been introduced,—or were the disuse of the midden-steads, or ash-pits, enjoined, as the abolition of cesspools has been in the metropolis. Towns like Manchester, Ashton, Stockport, Rochdale, Bolton, Wigan, and others, would have only this non-prejudicial condition,—that their drainage would be not into a tidal river.

It seems to us, the question of principle to be decided is, whether the sewage of all populous districts is to be conveyed to sea, irrespectively of distance. That would be assuming, as we said, that the sewage, when got to the coast, could be made to engulph itself in the ocean, instead of hanging about the shore,—a result which we have lately regarded as possible in the case of London, and as actual in the other case, at the mouth of the Mersey. We have not pursued the chemical question, which we suggested might deserve to be inquired into; but, we think it very probable that difference of specific gravity, or other mechanical conditions of the fluids—without reference to peculiar tidal currents,—would operate so far as to involve present subject-matter for consideration. We would reiterate that the condition of many populous sea-port towns should be looked at, and would urge that the question as to them belongs to that of the sewerage of London.

Though, in the Lancashire towns, the house-refuse is got rid of on a principle different to that adopted in London, the condition of the streams is not sensibly better than it might be expected to be from the larger amount of pollution. What it would be by the adoption of the metropolitan, and, as it would be deemed, more advanced, system, we could scarcely venture to think. The present condition may be compared with that of the Fleet, the Effra, and streams of a like nature, rather than the Thames. In each case, the streams are no longer to be called rivers: they are sewers; and unless they could be restored to their original purity by complete interception, require to be treated according to the existing circumstances. The “conservancy” of such rivers especially should be maintained, and should be in the hands of proper authorities; and we are glad to see that the town-council of Manchester are now applying for the requisite powers, by the exercise of which, owners of property on the banks of the rivers Irwell, Irk, and Medlock, will be prevented from ejecting rubbish and refuse into the stream, or otherwise altering the régime of the river, or volume of the water, for their own purposes. On this subject, however, a few points of information may be supplied in a future article.

The official Referees in the “Conclusions” in their Report on the Drainage of the Metropolis, express the opinion, “That the pollution of streams by sewage, throughout the whole country, is an evil which is increasing with improved house-drainage; and that it is very desirable that the attention of the Legislature should be directed to the subject with a view to devising means for remedying the evil.” But we have referred to the circumstance of excessive pollution where there is, we might say, *no* such “improved house-drainage;” whilst, if that house-drainage were now introduced, the streams would reach to a state to which the pollution of the Thames supplies no sort of parallel. Could more be needed to show that the question of disposal of refuse is a national one?

\* See p. 185, *ante*,—also “A Day in Liverpool,” p. 631.



Some methods of "deodorization," separation of solid constituents, or direct utilization, answer, to a certain extent, in the case of single small towns, at least so far as to free a stream from pollution, and yet render unnecessary any outfall to the sea. It is asserted that similar methods are inapplicable to the case of larger places, like London,—even divesting the question of the interference of the commercial considerations. As to these last, it would be well to put them altogether aside, until the main question—that of getting rid of the refuse innocuously—can be settled. It may remain a proper question whether outfall or ejectment of the sewage or refuse on to the land, would not still be the true "solution of the difficulty." The commercial considerations are virtually abandoned in the scheme of the Referees; it is even apparent that a large outlay in working as well as primary expenses is contingent upon the adoption of that scheme: it seems to us exceedingly probable that a concentrated nuisance at the points of outfall wherever decided upon, and one of serious character along the lines of sewers, covered or uncovered, would be attendant on the realization; therefore, it is with these probabilities, that those involved in the ejectment on to the land, ascertainable after the collation of many data which have found no place in the recently published documents, should be contrasted. It may be necessary and politic, even, to calculate, at least for some descriptions of produce, upon deterioration of the land,—hardly shown to arise, but which, according to the major part of those practically conversant with agriculture, might result from the application of sewage at all times and seasons,—the necessity of such application being involved in the rejection of another arrangement for outfall.

We fear that in the controversy as to covered or uncovered outfall channels, the real question has been misunderstood. If channels, mainly uncovered, be considered, the point is, whether the engineering arrangements will allow the flow to be maintained, and the sewage to be so abundantly diluted with water, as to render the noxious exhalations of no moment. For, it seems to be admitted that on those occasions at present, when the sewage is largely diluted—as on the ten or twelve days of storm waters, in each year—no prejudicial effect could accrue, unless at the first flushing out. If, from the plan of the outfall, or the nature of all sewage-water, this refuse must always be a source of disease, the evil will not be remedied by the arching over of the outfall channels or main intercepting sewers. The covering, without means of ventilation, will but increase the evil. Decomposition, favoured by the great length of sewers, will be going on; the gases will force for themselves exits at numerous points in the course of the sewerage—or more probably by the house-drains themselves; and we once more call for more prominent attention to this element of the question—ventilation of the sewers—than it has received.

In the Lancashire towns, the course deliberately chosen as the alternative from the further pollution of the rivers, or experimental and problematical undertakings, is the retention of the old plan—the use of privies and ash-pits,—only under strict regulations, and careful provisions as to clearance and removal. This is the system retained in Manchester,—a town where great attention has been given to sanitary questions. The regulations of the "Building and Sanitary Regulations Committee," in pursuance of the Police and Improvement Acts, not merely permit, but enjoin the construction of such conveniences and receptacles; and closets are allowed only "under special arrangements with the committee, and by the owners or occupiers agreeing with the Water-works Committee for water,"—also defraying one-half of the cost of removing the ashes,—all which would seem to imply that the construction of conveniences of the modern and more approved character, is not encouraged,—though the water-supply is now abundant. The "Regulations" enjoin that every dwelling-house to be built within the borough shall be provided with a privy and ash-pit (the Act goes even further—having a reference to existing houses), "constructed in a yard at-

tached to the premises, but not in front of" the house: over these conveniences, no sleeping-room is allowed to be built; and "the premises" are to be "so arranged that water shall not flow into the ash-pit." It should be stated that there is a proviso as to drainage of the ash-pit.

Reliance appears to be placed on the ashes as a deodorizing agent. Such an effect would, undoubtedly follow, from the use of earth. Earth is the best natural deodorizer; and in dependence upon it, it is only necessary that it should not be supercharged with the refuse, as hitherto has been the case in populous districts. Mr. Austin, in the slight reference which he makes, in the "Report on the Means of Deodorizing and Utilizing the Sewage of Towns," to the midden-steads of Liverpool and Manchester, though he thinks that the rate of mortality in both these towns supports "the conclusion of those who contend that a high standard of health is not to be expected until the water-closet has been generally substituted for the midden-stead," regards ashes as forming an "excellent deodorizer when properly used." To have the same effect as earth, the ashes, we apprehend, would be required in considerable quantities,—or such quantities as they are seldom found in, except in the case of the Lancashire houses. Coals there are a third or a fourth of what they cost in the metropolis; and they are used, as a London house-wife would think, somewhat lavishly. Lancashire coals, however, appear always to produce a large quantity of ash.

The dimensions and construction of the conveniences are particularly provided for, and the Acts, in some respects, admit of even greater precision and stringency than is attempted in the "Regulations." In one Act, the provision, if required by the Council, of a proper funnel or flue for carrying off any offensive stench, is mentioned; but the applicability of such a contrivance to open ash-pits is not very clear. The removal of the soil or refuse, by the most recent regulations, is in the hands of the authorities; and the practice is (having used deodorizing agents where thought necessary) to cart it to a central depot—where, however, it is not long allowed to remain, and to remove it thence, and convey it in covered receptacles by railway, to districts where it can be disposed of for what it may fetch. A similar system is adopted in the adjoining borough of Salford; and in this case, from an Account of Expenditure and Receipts, we are able to see that so far from there being a profit realized, there is a loss—viewing the subject in the commercial aspect. In the year ending August 31st, 1857, 21,239 tons of soil were collected from about 16,000 pits in the chief township. The value of this in the yard was 1s. 6d. a ton: this was after the expenditure for getting out of the ash-pits, and carting to the yard, besides several items to be taken into consideration in any other case. The sale of the manure, including carriage, would not realise more than 2s. 6d. a ton,—instead of over 3s., which would be required for the return of the mere outlay on the operation.\* Of course this by no means proves that a better commercial result would not follow from other methods of utilization. But it must not be supposed that other means have been unconsidered in Manchester. The question of utilization of sewage by irrigation has been taken up on several occasions; and Mr. Philip Holland and Mr. Edward Corbett may be named as having, at one time or other, given attention to it. The former gentleman, some time ago, pursued a scheme for the irrigation of land adjacent to the Bridgewater canal, by hose and pumps. We have referred to particulars of the early operations, which augured pecuniary success; but for some reason or other, the scheme appears to have been abandoned. The use of midden-steads or ash-pits leads to the provision of back-passages and entrances.

\* The money out of pocket for the past year, we believe, would be about 684. 18s. The estimate of expenditure over receipts by the Scavenging Committee, for the year ending in 1855, is 9557. 5s. The receipts from 23,000 tons, with sundries, are here set down at 2,9007; whilst the expenditure on 25,000 tons, including salesman's commission, wages of clerks, scavengers and carters, loading, boats, and carriage by river and canal, cost of carts and implements, keep of horses, rents and sundries, are set down at 3,7632. 5s.

These have frequently been allowed to get into a dirty state: they are not cleansed by the town except in urgent cases. They can hardly recommend themselves on considerations of police.

The Lancashire principle is that of dividing the nuisance by the receptacles over as large an area as possible, in preference to concentration of it in a sewer-river, or outfall-channel; and to trust to the slight advantage from the best construction of the receptacles, with constant supervision and speedy removal, for mitigation of the effects. The system would not be defended as a perfect one, and is considered to be inapplicable to the houses of the metropolis, on account of the space which it requires in the plan; but this does not form the true objection to the system, or to any analogous to it, in general cases. The houses in London are hardly more confined at the backs than the houses of Manchester. The objection is the sanitary one. This makes it as much incumbent on the people of Lancashire, to pay attention to the question of house-drainage and sewerage, as the people of London,—if not more so. The requirements, and consequent difficulty, are even greater in their case than with us.

Under the existing system of sewerage,—that is, with the advantage in one point of view, of the non-introduction of the closet system,—the outfalls are in a dangerous state. To this point we shall again refer; but, taking the case of Dukinfield\* as an example, the "Report" alluded to in a former article shows that the sewage is ejected chiefly into the Tame, partly into the canal, and partly into "the lake." One outlet, at Dog-lane Station, is,—

"about eighteen feet above the level of the canal; the sewage is allowed to find its way down the bank and upon its surface. Opposite to this outfall, or rather immediately above it, there is a range of houses."

The river follows a meandering course, skirting the more populous part of the township: it is spoken of as "in foul condition, very offensive," and requiring great improvement. The population is rather over 14,000. The stream in many parts is a mere brook, and there are four weirs within the district. Mr. Aspland is reported as saying:—

"If tempted to explore the valley, he discovered that the river, dammed up by a weir, instead of passing onwards the sewage impurities, is converted, during many months in the year, into neither more nor less than a huge cesspool, distilling from its putrid bed the most noxious vapours and gases. These circumstances afford abundant explanation of the high rate of mortality \* \* \* Its impurities are considerably augmented by the sewage from Staley-bridge district and town, situate immediately above Dukinfield."

Below Ashton and Dukinfield, the same narrow stream passes Guide Bridge, and reaches the populous town of Stockport; and what is the state of the solid and liquid compound that gets into the Mersey, might be supposed,—but, it would be well if the deleterious matter were passed on, rather than deposited, or retained, festering, within the populous districts. Other towns are not so favourably situated as to streams. The mortality of such places (in the case of Dukinfield it is shown to exceed that of Whitechapel in London) is of course in great degree due to insufficient number and mal-construction of the conveniences and receptacles of the sort in use, and to many other causes. But the result from the immediate and general introduction of the closet system, in opposition to the best arrangements of the other sort, would, it seems clear, be most disastrous. The question, what should be done with the sewage of houses, is not answered by the metropolitan recommendation of outfall-channels to the sea. How would the work of applying these to the Lancashire district ever be surmounted? or how can the proposed outfalls for London, secure more than a partial or temporary result—the real object being the entire dissipation of the Thames—so long as the "area of drainage" does not include prospectively every town and district draining into the river?

We must pursue the subjects which are before us, in a future number.

\* Dukinfield, in fact, is in Cheshire; but is separated only by the river, from the town of Ashton. Stockport is similarly situated in Lancashire.



## AN AMERICAN TOWN HOUSE.



Elevation.



Ground-floor Plan.



Chamber Plan.

## AN AMERICAN TOWN HOUSE.

In addition to the examples already given from Mr. Vaux's "Villas and Cottages" (see p. 658, *ante*), we add a view and plans of a town house, about to be built in Fifth Avenue, New York, on a plot 25 feet wide, adjoining the grounds occupied by the Church of the Ascension. It is thus more open and airy than is the case in the majority of house lots in New York. It is to be built of brown stone and brick. The recess formed at the end of the dining-room, and the pantry adjoining, project from the main body of the house, to give increased space on the principal floor. The main staircase has a skylight in the roof. This house will cost about 20,000 dollars when finished.

## THE "LEVIATHAN" STEAM-SHIP.

We made an endeavour a few days ago to obtain for our readers, by personal examination, some impartial information of what is really being done at Milwall towards launching the *Leviathan*,—that wonderful piece of iron construction (the last result of Mr. Scott Russell's experiments on wave curves), which, if it were dropped down in Russell-square, would rest upon the houses on both sides;—but we did not succeed; the relation of progress being the privilege, apparently, of a friendly pen or two not likely to say too much. If we may judge from the undeniable want of forethought and the ill-arrangement exhibited on the first day, and at a frightful cost, there may be personal wisdom in this prevention, but there cannot possibly be any in the assertion made to us by Mr. Yates, the secretary of the company, that he cared nothing for the press, or for what the press said. Let us, with equal candour and emphasis, say to Mr. Yates and his directors, while there is yet time, that if the business of the Eastern Steam Navigation Company is to be carried on in maintenance of that feeling, and managed after the fashion which it is certain to induce, that company is as surely doomed to be a failure financially as the vessel now on the ways is a triumph mechanically.

It was a comparison made in our pages in 1854 between the big ship and the houses in Tavistock-square, and reprinted everywhere, which first gave the general public any notion of its enormous size and capacity. The length of it, on the upper deck, we may remind our readers, is 692 feet, the breadth of the hull 83 feet, and its height 60 feet. It consists of more than 10,000 plates put together with three millions of rivets. The decks and iron walls form it into about eighty enormous boxes. According to a published statement, its four paddle-engines are to give a nominal force of 5,000 horse-power, and the screw-propeller of 6,500,—11,500 horse-power in the whole! The engines, when in full work will swallow up 250 tons of coal each day, and yet the collar is large enough to hold a supply for a voyage to Australia and back. Why the iron shaft to connect the propeller with the engine is three times as long as a good ten-roomed house is high, namely, 160 feet, and each wheel is 56 feet

in diameter. Just imagine this enormous work, the conception of Brunel and the production of Scott Russell, completely fitted up with every necessary of life, and dashing across the ocean with 4,400 human beings on board, at a continuous speed and with an ease never before attained (and this it is confidently anticipated will be the case), and you will have before you the most extraordinary result of engineering science and constructive skill that the world has yet seen.

Of the formation of the launching ways, resting on enormous piles and concrete, and the apparatus for pushing the vessel down these ways, and holding her in when she slips too fast, the public are tolerably well informed; suffice it to say for the present that the vessel, which was originally about 800 feet from the line of low-water mark, is now about 110 feet nearer, and that the operations are continued day after day. On the first day, it will be remembered, the ship moved but once, about 4 feet at the head and 6 feet at the stern; and those who saw the advance will not soon forget it: the exquisite beauty and grace of the movement with which she hurled two souls into eternity was a thing to think about.

One word more to the Company, and to some who have said to us, "Will the ship pay?" If the line of policy indicated in Mr. Yates's observation, already quoted, be pursued, we reassert with strong conviction, that the scheme will be a failure. But we will imagine the prevalence of better counsel in that respect, and even then we do not hesitate to say, that to obtain success financially, one of two things must be done; either there must be three or four more *Leviathans* built, and worked by the same board and staff, or its management and agencies must be undertaken by parties who have other duties, also, to occupy them. In other words, if the *Leviathan* is to have her own board of directors, secretaries, clerks, agents here and agents there, manager at this port and superintendent at that, all to herself, there will be very little difficulty in buying shares cheap this day two years. It was a grand work to do;—destined, probably, to produce a revolution and bring wealth to the country,—and those who did it will have earned honour, though they may not get a money return for their capital. We offer these observations, however, with the view of aiding them to get both.

## ART IN ARCHITECTURE.\*

*Aristides continues to treat of Gothic Art.*

It has become very common to employ Gothic for school buildings, and properly so I think; only if we adopt the style for schools, we should be very careful not to fall into the usual error of giving a gloomy expression to them: such a course is quite uncalled for, and very improper. It is astonishing what an effect the expression of a building has on the youthful mind when it is at all imaginative. Gloominess is a

frame of mind extremely repulsive to the young; and as first impressions are then indelible, it will give them a disgust to the place, and associated with that will probably be a dislike to learning, for children will imperceptibly connect one with the other, which no amount of reasoning will afterwards suffice to drive away. Not only are modern schools in many instances gloomy in appearance, but there is an absolute want of sufficient light. I have myself seen some in which this was painfully apparent. Insufficiency of light, bad ventilation, and uncleanness invariably go together. How excessively disagreeable and positively unhealthy must this be to young people, with their delicate susceptibilities and natural buoyancy of spirits, impaired by incarceration in such living tombs as these; instead of their studies being made interesting, they are positively repulsive from the disagreeable associations connected with them. It would, however, be an easy task, with a little management, to give to Gothic schools as cheerful an appearance as they are at present solemn and mournful; for, indeed, one of the beauties of the style is its range of expression. The whole of human sympathies being within its reach, with perhaps the single exception of those constituting the grand and epic.

From what does the expression of purpose in an edifice result? Is it the abstract quality of a certain arrangement of lines and forms, or does it arise from what is commonly termed the sentiment of association? This is a question very difficult to answer, but it is, nevertheless, of vital importance that we should be possessed of some clear and decided notions on the subject, if we are to have principles to guide us in design instead of mere individual preferences. On one hand it has been ably shown by Mr. Garbled, that there are certain forms of expression by which nature informs us of the physical qualities existent in her various works. Angularity expresses power as surely as a contraction of the brows and compression of the lips indicate determination; a curvilinear contour gives elegance with as much certainty as a smile betrays the joyfulness of the inward feelings. On the other hand there are associations which are merely artificial, having no real existence, and therefore are not general, only expressing local feeling, such as confounding Classicism with copyism, or Gothicism with barbarity. These being false, are the most difficult to be dispossessed of, and are, in fact, prejudices imbibed from early partiality or lack of knowledge. We should, therefore, be careful to draw a distinction between individual tastes and essential qualities; otherwise we are unable to perceive whether we design or compose on lasting principles or evanescent partialities.

There also exist other sources of pleasurable feelings, open to the imaginative mind, when contemplating an edifice, be it Classic or Gothic, such as that derived from a perhaps undue appreciation of the race who have perfected it; or if it is a ruin, from the romance of its history; but all associations of this kind depend more upon the disposition of the observer,

\* See page 698, *ante*.



than any actual quality in the example; and, therefore, evanescent, having no existence in æsthetic laws. Though memories like these frequently heighten our pleasure, they often confuse our understanding, and lead us to set a value on a design which it otherwise does not deserve. We should rather try to banish such impressions as these, and study a design from an æsthetic point of view: our ideas must be cosmopolitan to be appreciated by all. One who has been contemplating the majestic grandeur of ancient art is very likely to attribute excellencies to it which it does not possess; and the same rule holds good in every other style. We appreciate best that which we study most; an additional reason for not confining ourselves to the study of one style; for it will always appear super-excellent to the exclusion of all other beauties. Association of ideas, in the sense popularly understood, is a most fruitful source of error; though much expatiated upon in architectural "chit-chat papers," and deserved as the fault from which most art-pleasure is derived. All æsthetic beauty—as the use of the term implies—is totally unconnected with extraneous aid: it is, in reality, self-existent. In a general sense, association is the cause of all the pleasurable emotions of the mind, excited by the contemplation of beauty in any form, and does, in fact, constitute that beauty; but they are associations existing in nature and only discovered in the design,—not of that loose and vague character which they are usually described as being, and which none can understand or explain, excepting by having somehow or other got it into his head previously that this or that form is beautiful, tinged by association all after-thoughts. If this is not a fair explanation of what is usually understood by the term, what do they mean? Why attribute our sensations of delight in beauty partly to that cause, when it can be irrefragably proved that it is the only one? The simple truth is, that the matter is little understood; and their ideas being confused, they give explanations which only serve to mystify. Whether the expression of purpose in a building, properly speaking, arises from an abstract power in the lines and combinations themselves, is uncertain; but it is sufficient for our purpose to know that nature expresses qualities invariably by the same means; and we must copy her principles if we would succeed in giving purpose to an edifice,—as with angular masses, she expresses power; with curves, elegance; with mass and gloom, solemnity; and so on, through all the tones and phases of sentiment which exist. On the proper selection of these qualities artistic expression depends, independently of that which arises from the suitability of the plan to meet its requirements.

What has all this to do with Gothic architecture? many will ask. To which I reply, that it simply proves what this paper seeks to establish: that each style has a sphere of expression peculiar to itself, from which bounds it cannot trespass without intruding on another's province. If we do not distinguish between the capabilities of each style, we shall be likely to reverse the order of harmony, and introduce them in inappropriate situations. Gothic could not be improper in any situation when England was comparatively shut out from the influence of the rest of the world; but now things are so changed, and we have adopted so many new ideas, as to have become so essentially cosmopolitan, that this style, though excellent in itself, is inadequate to satisfy our modern demands. Our field of view is now so much larger than it formerly was, that we are compelled to introduce new scenes, and more various landscapes, to preserve the whole from dull monotony. Undoubtedly, our advantages and knowledge have vastly increased: then why not use that which a bountiful Providence has thrown in our way? Why resolutely refuse to work up the new material, which modern research has opened to us, from the great mine of ancient art?

I know that thorough-going mediævalists will say, "This is all trash;" for those who resolutely shut themselves up in a little island of their own persist in thinking it is the only habitable spot on the globe.

Much as I admire Gothic art, for its manifold beauties and flexibility, I cannot shut my eyes to the existence elsewhere of equal beauties of an entirely opposite character.

Having touched upon the leading features of the three principal styles, I shall conclude my paper with a few remarks on the mixed styles, or Renaissance, now so much in use.

*Rufskinius*.—Your paper has not done justice to Mediæval art; while it professes to touch on all the beauties appertaining to Gothic, half of it consists of irrelevant matter, by which you seek to establish your first false proposition. What you have said respecting its good points, I most cordially coincide with; but you have not said enough. Classic architecture, even if it were excellent for the purposes which at first called it into existence, cannot, surely,

by any sane man, be considered to embody modern sentiments, excepting that it is structurally unsentimental and false, full of disguise, and in its totality a shameless sham. How opposite is the unexpressing truth, the scientific elegance, the unvarnished reality, the natural and easy beauty which distinguishes the Gothic, where the ornamentation is so appropriately distributed and elegantly designed, collected in traceried windows and canopied niches, which shine as polished gems set in frosted gold, so different to the laboured effort and high-pressure system of art displayed in pseudo-Classic designs. If Renaissance, or any other such lascivious style, is so suited to our present wants, it argues badly for the morality of the age.

*Aristides*.—You still run away with false impressions, and indulge in unintentional misrepresentations. The objections you have urged have been refuted a hundred times. Do try and look at the question in a broader light, and be not so wedded to the style of beauty in one woman as to deny the existence of equal attractions in another.

*Scotinius*.—Your simile is plausible, but false: ingenious, but untrue; far be it from me to deny the existence of great beauty in such works as St. Paul's, Greenwich Hospital, or St. George's Hall; but these are the highest efforts of art, and the highest efforts of all styles are good; but to come to the real test, let us examine the vernacular, through which the genius of a style should speak to all beholders. What has been produced? Look at our cottages, our town dwellings, our warehouses, and even our villas. Was there ever anything so ugly, so imbecile, so art-less, and so contemptible? The vernacular style should, in all cases, be an exponent of the straightforward, honest feelings of the English people. Certainly it is not now; and so far from elevating the taste of the uncultured classes, it destroys all their innate perception of beauty, plunging them into such a dark abyss of horrors and corruption, that it will take generations for them again to acquire the natural, healthy tone of mind of which they have thus foully been robbed. Provisionally, there has arisen a school of art fitted eventually to rescue them from the slough of despond which they have fallen into; for say what you will, it cannot be disguised that we have succeeded in restoring Gothic ecclesiastical architecture. Wince at it though you may, we shall, as assuredly as truth is greater than falsehood, introduce Gothic as the secular style of the land.

*Aristides*.—It appears to me that the plan adopted by you Gothicists, when comparing the rival styles, is to contrast the good of the Gothic with the bad of the Classic: the cathedral with the pattern row of cottages. It is needless to say such a comparison is unfair. You have not the boldness or the unfairness to deny that there is some little merit in a structure like St. Paul's; but that we are told is a "high-pressure production": we must see what the style produces in the vernacular. Before that is done, I should like to have explained to me what the Gothic vernacular was. Where are the fourteenth-century dwellings, so artistically superior to anything modern? or who informed you of the innate sense of beauty possessed by, not only the good old Englishman all of the olden time, but also by his retainers? When that point is settled then it will be time to compare the two styles. At present we can only compare modern works with modern works,—Gothic with Renaissance. Builders' Gothic and Builders' Italian are both bad; the Italian may perhaps be passable, but the Gothic is intolerably villanous. This fact does not certainly arise from their "taste" being destroyed by Renaissance; for they never had any: it is simply the effect of speculative building; and with productions of this class you would compare the earnest work of our true old freemasons! Compare the best efforts of modern Italian with those of modern Gothic: where is the disparity you speak of? One suits best with grassy lawns, the other with more picturesque scenery. One, having a heavy sky-line, requires a background of trees; the other, in its quaint pointlessness, requires such aid less. Speculative buildings ought not to be considered exponents of British feeling, except it be for the pocket; but the villa residences of our merchant princes, when designed by skilful hands, are. It is a mere piece of imagination to suppose that everything mediæval was necessarily pretty, because many of the examples left us are so: nothing can be more false than such a supposition, for it is the natural effect of time to destroy that which is poor and mean, and invest with greater beauty all that is originally good and firm. I have not the least doubt that the vernacular style of the fourteenth century consisted more of mud hovels than of anything else; and even the better class of houses would be found dark, dreary, and clumsy; if we were well acquainted with the domestic history of that period. Of course there were palaces of goodly proportions—or rather castles; but they cannot be considered as belonging to the vernacular style, for they are high-pressure productions, and

superior modern works could be easily pointed out. If you admit the foregoing to be true, why complain that St. Paul's is a high-pressure work? For of Gothic there is little left that was not at the time of erection considered to be sumptuous. The manners of the ancients approached much nearer to ours in refinement than ever did those of our Gothic ancestors: then why complain of the unfitness of classic to our character? Gothic ecclesiastical architecture, you say, is now an "established fact," wince at it as you may. Who wince at it? "It is also providential that a school of Gothicists have come to rescue us from the quagmire of despond." I am glad to hear it! and if they should be the providential instruments for replacing speculative building by a better system, so much the better.

*Donaldo*.—A long speech, but a good one; why, indeed, should we give up a style that has been so great and glorious in results, because, forsooth, in the vernacular tongue, there are some ugly words? If St. Paul's is a high-pressure production, is it not merely a proof that the style requires only talent to work it out? and is not, therefore, the credit greater where the difficulties are so many? To give the same dignity to a Gothic cathedral would be impossible, from the vast size it would require to be made. If the difficulties in the way of being original are greater, so are the results more magnificent; and this of itself, if believed, disproves the great plea of a celebrated Gothicist regarding the lavish expenditure, which he says is required, to effect anything good in the shape of Italian. There may be, and no doubt are, advantages peculiar to each style; and these, as my friend Aristides seeks to impress on you, should be well looked into.

*Aristides*.—The united aim required to create a national style cannot be obtained till all our at present divergent ideas flow into one channel. Such a style will be the result of the fusion of two opposite elements. Already I think I perceive a tendency towards that consummation. Gothic will never, in its integrity, be universal: still, no doubt, it will constitute one element, and that not the least, in any new style that should happen to become universal.

*Scotinius*.—"Jerry" building is the accompaniment of a false style of art; of an architecture that admits of structural concealment—sneer at the fact though you may. If we had followed in the steps of our good old ancestors, we should have advanced instead of retrograded. What a lack of thought and original conception there is in all the boasted works of the modern Italian school—if school it can be called! What heavy, ugly, square, monotonous creations—no! copies—are they! How different to the varied, graceful, and aspiring Gothic; which being as truthful as it is beautiful, seems as though a spirit had come down from heaven to clothe truth in vestments woven by angels!

*Aristides*.—The great charm of original thought cannot be claimed by Gothic architects, with any greater fairness than by the so-called Classicists. Show me the porch, the window, the spire, canopy or roof framing, in fact, any portion of a modern Gothic church, and I will engage to find a counterpart in some old example. It is true the members may be more varied than is possible in Classic: that is a beauty peculiar to the style: but of real originality there is very little to be found. Instead of adapting the style to our habits, which it is frequently capable of, the tendency of Gothicism is to adapt our ideas to the old-fashioned ungainly contrivances of our ancestors. No! originality can never surely be claimed by your party; they are too servilely Gothic in their notions. Perpendicular architecture was the result of a want felt, of a tendency to modernism which could not then be met in a satisfactory manner by employing pure Gothic. If we had gone on in the steps of our forefathers, we should have been in much the same position as they; but such a supposition is an absurdity. We must, in order to advance, from time to time abandon a traditional line of proceeding, to adopt new ideas, as fresh lights break in upon us. The question has, however, been gone into so often, and been so thoroughly ventilated, that it is waste of breath for us to discuss it.

*Garblentum*.—Your theory of expression in architecture coincides with my own opinion; but the conclusion you draw from it respecting the employment of several styles is a fallacy: however, we will, though we cannot agree, hear what you have to say respecting the detestable Renaissance.

*Aristides* (sarcastically).—Thank you for your kindness: perhaps a little dissent may give activity to the faculties.

*Rufskinius*.—We wish to be guarded on all sides in an impregnable mail of argument. So show us the way you handle the weapons wherewith you purpose slaying the valiant Goth.

*Aristides*.—Far be it from me to slay so helpless a creature: I only wish to teach him how to fence.

*Scotinius*.—Then measure your ground and begin.



## ARCHITECTURE OF THE RENAISSANCE.

Italian architecture, in its capacity for expression, holds a middle position between the Gothic and Classic. While it partakes of the regularity of one, it combines with it, in a great degree, the picturesque effect of the other. It is more flexible than Classic, and possesses greater dignity than Gothic. These qualities point it out as being peculiarly fitted for street architecture, and for general domestic purposes. A large amount of original design may be displayed in the grouping of the masses; and also much freshness of invention in the details. With a little help from the Gothic, the style is capable of embodying very varied conceptions. We are not tied down to the employment of base, column, and entablature, as we are in the pure Classic, which renders it of such limited applicability; nor are we debarred from the use of those beautiful members, if we require them; for we are at liberty to introduce them where force or prominence is required in the design, or to mark the several ranges of floors. The windows may also be treated with great freedom; and the *ensemble* of the edifice may even receive its effect entirely from fenestration. It is a style which admits of greater breadth than the Gothic; allowing of the introduction of large sheets of plate glass, which in Gothic would be quite inadmissible; indeed, either plate-glass manufacturers or architecture would suffer if Gothic were universal. This again is an additional inducement for the employment of Italian in towns, where as much light and as little dirt is required. Again, it may appropriately be used where great uniformity is wanted, as in a formal row of buildings, which would, in Gothic, appear very stiff and prim. A bold projecting cornice (not held in balance by rods) takes off the baldness which in a line of Gothic houses would be exhibited.

I know many will shrug their shoulders, and *truthful* people will grin, when I express my deliberate conviction, that it is one of the advantages of the style, that it may be executed in cement! Stone is a better material, no one will deny; but the expense prohibits its adoption in nine cases out of ten. The cry against cement is one of those virtuous, puritanical notions, which everybody re-echoes and all practically disregard. Gothicists will shudder at such sentiments; and in their style its use would indeed be monstrous. True, all the nations of antiquity used it; even the Mexicans used it, and also the Chinese use it now: then why not we? It gives a lively and cheerful appearance to streets, which otherwise would be directly gloomy if left to the depressing influence of dirty red brick, legitimately employed, no one ought to object to it as a sham, for it is not. Is the coat a man wears on his back a sham? Then why a coat of cement? Inside it is a "necessary covering," outside, we are taught it is a "sham." By the same logical reasoning we might prove that the *inside* of a house ought to have the bare brick exposed, and the ceiling ought to show the timber joists—such are the absurdities to which a false standard of truthfulness will lead us.

French Renaissance is still more picturesquely treated than Italian; and if not too profusely covered with decoration, which satiates the mind, and has led to its being called *lascivious*, it may also be employed with good effect in town architecture,—in places where a broken sky-line is an object of importance, as in a position where it will be viewed from a distance, towering above and giving variety to the usually monotonous horizon of a modern city; the outlines of which are generally all but neglected.

Elizabethan is purely an English style, and, though much abused by "the best authorities," is still well worthy of our notice. It should be very sparingly used in cities, and, together with the French of the same period, should always be employed with great caution. It offers great inducements to unskillful hands, from the ease with which it may be copied, and it is the bad architecture so produced, together with its worse application, that has rendered it so completely a workhouse style,—hence its disrepute. What style is so suitable for a baronial residence, surrounded as it is with such thoroughly English associations, and harmonising so well as it does with English landscape?

Italian is a style fitted for the expression of commercial prosperity, and the display of accumulated wealth. French Renaissance is partly fitted for the same purpose; yet possesses less Classic taste; and is more extravagantly egotistical in display. But Elizabethan, with its secluded yet cheerful and fantastic quaintness, is far more suited than either for the residence of a nobleman or gentleman priding himself on his English ancestry and his constitutional notions. It is intrinsically a Shakespearean style, possessing the attributes of his age, and partly those of his genius. Vivid and forcible, brilliant and fantastic, homely and cheerful, it is far from being the demoralized bastard offspring of the two styles, which people who ought to know better are never weary of

representing it to be,—and proving it to their *own* full satisfaction.

In advocating the employment of several styles, I would wish to disabuse my hearers' minds of the impression they may insensibly form, that it would be correct to place opposite styles in juxtaposition: nothing is further from my intention; for, though in styles which have an affinity this may be done frequently with good effect, yet the transition should not be too rapid, or the contrast too great. If the surrounding structures be not very ungraceful in outline, attention should be paid to the laws of harmony; working up the whole into a pleasing *ensemble*, as if it were part of a general design, which only required carrying out and completing. Nevertheless, there should exist an individuality, distinguishing each from its neighbours, though the whole should form a composition, or a picture. There should be no inelegant junction, or knuckle-joint, if I may be allowed the expression; no unfinished break—waiting to be continued in our next—but the union should be easy, graceful, and complete in finish; combining them as parts of one composition, yet distinctly marking the extent of each design. A gradation of ideas is necessary to preserve the effect of the sentiments impressed on the mind, both in architecture and poetry; for where the sentiments conveyed are of opposite characters, they destroy each other and become latent, like negative and positive electricity. A Classic building in proximity to one in Gothic taste, will, contrary to the vulgar notion of improvement by contrast, injure it, by giving it an apparent toyishness of appearance; and the Gothic will, in return, re-act and produce in the Classic a certain hard, cold, and formal effect, otherwise not noticeable. I often think that the Gothicists destroy the fine sentiments exhibited in a Classic building, by placing an imaginary edifice in their own much-loved style, in opposition, by the side of it. Such a course will as effectually destroy its beauties, as a comic song will drive away all the pathos of a sentimental one. It is impossible to laugh and to cry at the same moment—unless it be during hysterics or madness: so to perceive and appreciate fully the beauties of each style, we must detach one from the other, and survey them separately—a difficult operation if they adjoin. Some will, perhaps, ask what is to be done, if the adjoining buildings, according to the rules previously propounded, are required to be of opposite styles, as in a hall of justice and a church; to which I answer, something must be sacrificed to each style, if utility says that they must go together. In every scheme there are some disadvantages; some conveniences or some beauty must be sacrificed; but we should choose that scheme which meets *most* of the requirements of the case; and I confidently assert that the proper and legitimate use of several styles, in preference to one, will meet our wants much more effectually—sneer, as many will, at the assertion.

Nothing to my mind has proved the superiority of a modification of Italian for civic purposes more than the late competition for the Government Offices. There were several able Gothic designs submitted; but they were, without exception, uniformly inappropriate. Indeed, Gothicists seem to ignore all attempts at giving a suitable expression of purpose to an edifice—that is left to chance. They are so taken with the beauties of Medievalism and precedents, that expression is generally disregarded; though the style, with proper treatment, is capable of a much greater range than they generally give it. Monastic devices, episcopal attributes, or collegiate conventionalities, are not the things fitted for giving expression of purpose to a range of national offices for the transaction of the business of a great commercial kingdom such as England. Yet, what else is there to give these Gothic designs expression? Nothing! How strangely inappropriate those medieval figures and straggling reliefs with which Messrs. Deane and Woodward decorate their design for the Foreign Office, seem, when we contemplate the purpose of the intended structure, viz. the transaction of the current business of the realm in its relations with foreign powers! How one, irresistibly reminds you of the past! The other of the present! Such a contrast of ideas serves to degrade an otherwise meritorious design into a baby-house for old men in their dotage. There may be extravagances and flagrant copyism displayed in many of the Renaissance designs; but how much more appropriate is the feeling conveyed by that style to the purposes to which the buildings are to be devoted! Every moulding, every line, every bit of decoration, speaks of affluence, wealth, commerce; and withal they possess a certain systematic and business-like distribution of parts, not unaccompanied with dignity and stateliness of carriage.

While I advocate a legitimate employment of Renaissance, it is impossible for me to be blind to the many glaring falsities and gin-palace perpetrations which have brought disgrace upon the style itself, and undeservably so. Farnese Palace cornices, thin and

meagre architraves, Palladian windows stuck in between five-story pilasters, like Tom Thumb between the legs of the American Giant, and gaping shop-fronts with no apparent support. Bonds and string courses filled with patterns of the most approved form of confectionary rosette, occasionally diversified by the spaces between the stories being filled in with border panels, some 14 feet high. Such efforts as these (if they can be dignified with the title) are a stauding disgrace to the age we live in, and it is almost sufficient to make one occur with those who think it one of naught but tasteless abominations, till a little patch of real artistic worth brings us back to the knowledge that art does still exist. The true aim of architecture has been sadly neglected; but the faint streaks of light in the horizon permit us still to hope that the mid-day of art is approaching, and that its sun will yet complete one more cycle.

In this slight review I have introduced little technical matter. My object has been rather to give voice to that part of our art which appeals to the general sympathies of the human mind, for most people have sufficient taste to appreciate a consistent design, though they may not have enough to protect them from adverse and corrupt influences. If we try to place before them some new beauty or appropriate form in everything we do, no matter how small it is, we shall insensibly raise to a higher tone their taste for the beautiful and true.

I have attempted to draw a line of demarcation between association proper and arbitrary association. One is drawn from the overlying and pre-existent principles of nature; the other is the result of a blind following of rules or theories, without once turning round to inquire or to investigate. The laboratory of nature is locked to such as these; they mistake local feeling for universal law.

The opinions I have expressed are not mere visionary analogies, suddenly discovered for the support of a theory, or the refutation of an opponent, and as suddenly thrown on one side as useless when they have served their turn: but the accumulated experience of a life devoted to art, and of much patient observation and investigation. As such I hope they will be taken; and I sincerely trust that the blind partisanship and mistaken zeal evinced by many members of the profession, will give place to more enlarged views of the comprehensiveness of art.

*Rufkinian.*—Are you alluding in your last sentence to the earnest efforts of the party whom I have the honour to represent? If so, I can only say that it is an unequalled and liberal remark.

*Aristides.*—A liberal wish, though.

"I would offend none:  
Those who think thus eap will fit,  
Let them try it on."

The party now breaks up, some betraying great disgust, and others with "smiling countenance serene." As but little benefit might be looked for from the discussion of the last section of the paper by the able Professor A. it is the less to be regretted by the company—or the reader.

THOS. M. READE.

THE ARCHITECTURAL MUSEUM,  
BROMPTON.

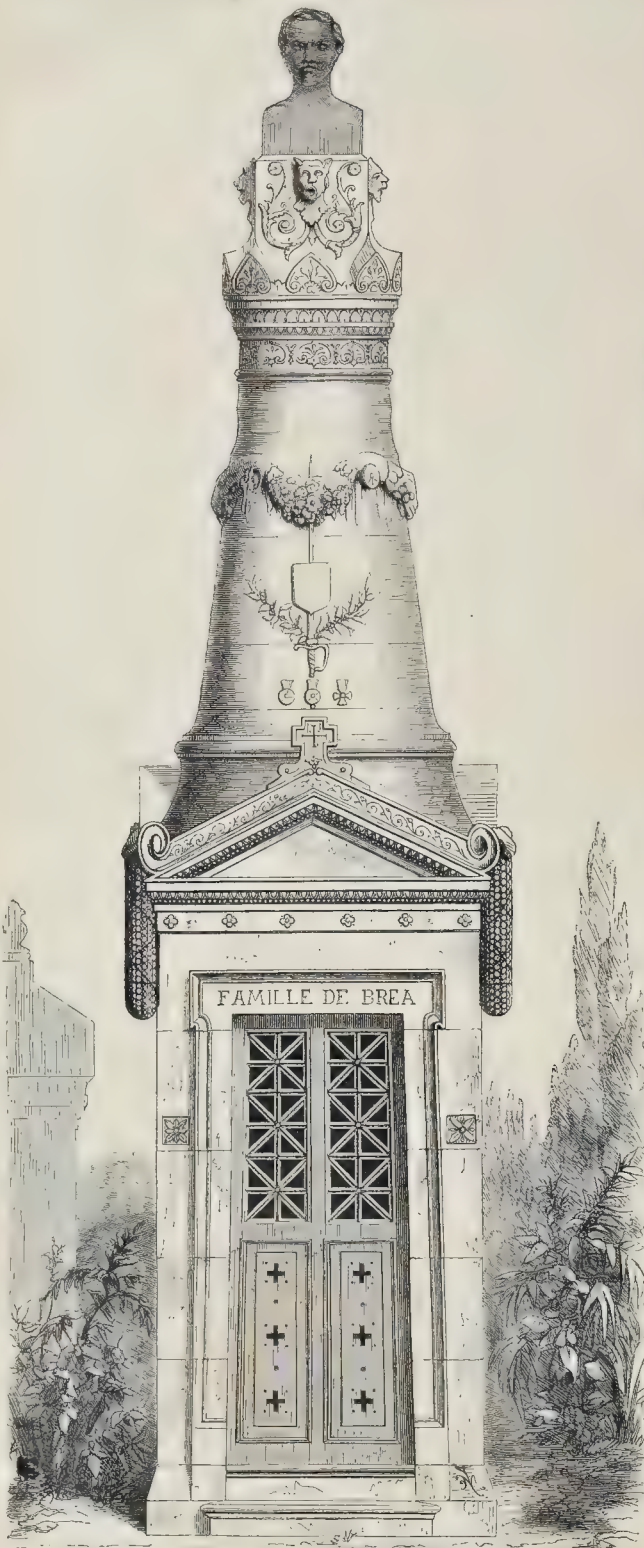
Our advertising columns have already made known the subjects of lectures proposed to be delivered here during the ensuing three months, but we repeat the list to emphasize it:—Wednesday, January 13, evening meeting, Mr. Cockerell, R.A. in the chair. Award of prize by Mr. Ruskin.—Wednesday, January 27, "On Ancient and Modern Architectural Ornament contrasted," by Mr. John P. Suddon.—Wednesday, February 19, "On the Domestic Architecture of the Middle Ages," by Mr. John Henry Parker.—Wednesday, February 24, "On the Right Use of Ancient Examples," by Mr. George E. Street.—Wednesday, March 10, "On Ancient Timber Framing," by Mr. Raphael Brandon.—Wednesday, March 24, "On the Selection of Objects for Study in the Architectural Museum," by Mr. G. G. Scott, A.R.A.

There are but two candidates for Mr. Ruskin's prize, and their merit is said to be nearly equal.

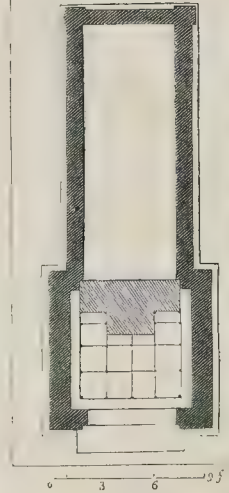
We may mention that the new catalogue will be ready in the beginning of the new year, and that a large collection of photographs is being made to illustrate the casts in the Architectural Gallery.

HINTS AS TO PRICE LISTS: DISTRICT MAP.—Would it not be very much more convenient for reference if the different manufacturers could arrange to print their price lists on the same size paper, so that they might be kept together, and, if thought necessary, bound and indexed? Also, would it not pay to publish a coloured map (like the new postal), showing the portions under the jurisdiction of the different district surveyors? It would be found very convenient.—W. T.





TOMB OF GENERAL DE BREA, AT NANTES.—M. BOURGEREL, ARCHITECT.



Plan of Tomb of General de Brea.

## TOMB OF GENERAL DE BREA.

THE accompanying engraving represents the tomb which has been erected at Nantes, in memory of the brave General de Brea, who died in 1848. It was designed by N. Bourgerel, architect, of Nantes, where he had taken his reputation as laureate of the Academy of the Fine Arts of Paris.

## DOMESTIC ARCHITECTURE, ROUEN.

*Wood and Stone House, Rue Cauchoise.*—This curious house, 39 feet high by 30 feet wide, is constructed of stone as high as the cornice of the first floor. The second floor is of wood, undisguised, the pilasters only being of stone. We may particularly remark the arrangement of what was formerly called *l'étage noble*. Above the two centre windows is seen a pediment which encloses a sculptured subject, representing a strong castle with its towers and battlements. In the tympanum of the dormer which terminates the house is a sculptured escutcheon with the arms effaced. It was probably a little town-house, where, quite at the end of the sixteenth century, some Norman lord was accustomed to spend the months of the bad season. It is situate in the Rue Cauchoise, No. 70, near the boulevard of that name.

*Stone House of Seventeenth Century.*—We add the elevation of a stone-fronted house bearing the date 1637.

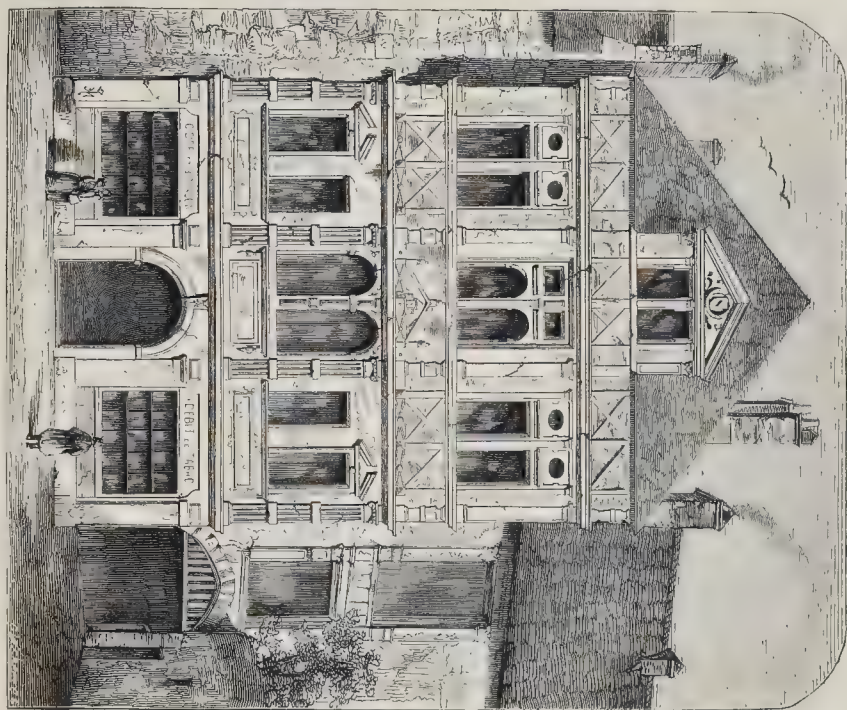
## PROPOSED GOVERNMENT OFFICES.

SOME of our readers are, naturally enough, very anxious to know what the Government has determined on with regard to the proposed Public Offices, and the designs selected in competition. Nothing is known positively; but things get talked about sometimes before they are communicated officially, and this is what we are told as to the Public Offices. A few weeks ago the Treasury informed the Board of Works that the question of new Government Offices had been laid before the cabinet, and that it was determined to carry out the designs made (by Mr. Pennethorne) in 1854, referred to in the Report on Downing-street Extension Bill, 1855, and that the Foreign Office was to be proceeded with forthwith. The Chief Commissioner, if we are correctly informed, urged in reply to this, that something more magnificent should be done, and that it would even be a breach of faith with those whose works were selected in the late competition if the course alluded to were pursued. If our information be correct, the Treasury have, nevertheless, determined to carry out the designs of 1854.

**SIMPLE DISINFECTANT.**—Cut two or three good-sized onions in halves, and place them on a plate on the floor: they absorb noxious effluvia, &c. in the sick-room in an incredibly short space of time, and are greatly to be preferred to perfumery for the same purposes! They should be changed every six hours.

J. B. N.





DOMESTIC ARCHITECTURE OF SIXTEENTH AND SEVENTEENTH CENTURY IN ROUEN.





## THE CHÂTEAU OF CHAMBORD.

The buildings in the debased Italian style of architecture, or that of the Renaissance, as it is more commonly called, are not so well known in this country as they would seem to deserve to be, and it is with the view of directing attention to them that I have been induced to pen the following letters. A residence of about fifteen months in the immediate vicinity of some of the finest monuments of the Renaissance which are to be found in France, or, indeed, in the world, has, I trust, along with a sincere love of the study, to some extent qualified me for the task.

The object I have in view will, I hope, be more readily—at any rate more pleasantly—attained by a particular description of a few of the finest examples of this school, than by any attempt at a scientific description of its distinctive features; and it may not be altogether uninteresting, even to the purely professional reader, if these descriptions are accompanied by brief notices of the historical associations connected with the buildings described. Nor will it, I think, be out of place to inquire into the circumstances which gave rise to the introduction of this style. As the feudal system began to decay in France, and the nobles, instead of warring against their sovereign, began to submit themselves to his rule, and to attend upon him at his courts, the necessity of the royal residences, at least of those of the interior of the country, being impregnable fortresses, no longer existed. The final expulsion of the English from France, and the consolidation of Charles VII.'s throne, also contributed to the future utility of military strongholds. There was yet another motive which gave impulse to the stride made by the fine arts in the fifteenth and sixteenth centuries. During the twelfth, thirteenth, and fourteenth centuries, an exclusive monopoly had been exercised by the priesthood in building fine edifices, as attested by the magnificent cathedrals, churches, and monasteries, which arose in every part of the country. A desire to withstand the power and influence of the Church led to a feeling of rivalry on the part of the nobility. They were actuated, also, by a desire to outshine in magnificence other foreign princes, whose elegant and handsome palaces they had visited in their travels.

Accordingly, about this time we find the *château fort* giving place to the *maison de campagne*. Charles VIII., Louis XII., and Francis I. were all men of highly cultivated taste, and who loved to patronise artists, sculptors, and men of letters. During his campaign in Italy, Charles VIII. had made himself acquainted with all the finest buildings of that country; and, on his return to France, in addition to a large collection of antiques, he took with him a large number of Italian workmen and artists. To him we are indebted for the chapel of St. Hubert, at Amboise, a gem of its kind, and of which I shall have occasion to speak by-and-by.

The style which prevailed in Louis XII.'s time, and which is sometimes called *his*, sometimes the *Flamboyant*, was florid to a degree. It abounded in exquisite details,—the work on the canopies, for example, resembling lace-work, but it was greatly wanting in general effect.

It is to Francis I. justly styled the *father of art and letters*, that we owe that debased Italian style, which is more commonly known as that of the Renaissance, and which will form the principal subject of the following letter. Encouraged by the liberal patronage held out by this prince, numerous foreign artists, sculptors, and architects of celebrity, were induced to visit France. Among others we may mention Primaticcio, Vignola, and Leonardo da Vinci, the latter of whom for a number of years occupied a small chateau in the neighbourhood of Amboise. Owing to her Italian education and tastes, Catherine de Medici no doubt also contributed in a measure to the progress made by the arts in the sixteenth century. These remarks will serve as an introduction to the subject I have in hand, and I now proceed to describe in the first place the royal Chateau of Chambord.

About twelve miles from the ancient town of Blois, in the department of the Loir et Cher, stands the Chateau of Chambord, one of the most splendid monuments of the Renaissance. Its site is unfortunately quite unworthy of this magnificent pile. The surrounding country is a dead flat, the only relief to the eye being the deer forest which encircles the chateau. The atmosphere, owing to the humidity of the soil, is dark and gloomy. Notwithstanding these detracting circumstances, Chambord, once seen, can never be forgotten.

Its erection commenced in the reign of Francis I. who employed no fewer than 2,000 workmen, under the superintendence of Primaticcio;\* was continued

by Henry II. and Charles IX. and brought to a conclusion by Louis XV.

Chambord, however, was not destined to escape unscathed through the fiery furnace of the Revolution, and its walls yet bear the marks of the defacing hammer and chisel. At the same unhappy time the art-treasures collected during three centuries were in a few days destroyed, or dispersed for ever. Its present proprietor, the exiled Duke of Bordeaux (to his honour be it said), expends the whole of the rental which the estate yields, in the restoration of the building, which is done in strict accordance with the original design.

The Chateau of Chambord is so little like any other building I have ever seen, that I have some hesitation in attempting its description. In England, Woolton Hall, Longleat, and Burleigh House, are, perhaps, the only buildings which in the least resemble Chambord. These belong, however, to the Elizabethan style of architecture, which, though nearly contemporaneous with the debased Italian style, yet differed from it in many essential features.

The principal part of the building forms a square with four large round towers at the corners, which have high conical slate-roofs surmounted by a belfry. In the centre of the square is another tower, known as *la tour de la fleur de lis*, which took its name from an immense stone lily, which formerly crowned it. It was thrown down by the mob during the Revolution, and has not yet been replaced. The top of this tower forms an open lantern, which, with its flying buttresses, is very similar to St. Giles's Cathedral in Edinburgh, and of St. Nicholas's in Newcastle, with this difference, however, that its details are Italian, while theirs are Gothic. Within this central tower is a double spiral staircase, so contrived, that two persons may ascend it at the same time without seeing one another.† It opens on to four different stories, each of which comprises four compartments. These compartments being at right angles to one another form a cross, so that the light is thrown from all sides upon the staircase. Above these four stories the staircase opens on to the roof, the whole area of which, with the exception of the towers and the open lantern, is paved; the chambers beneath it being arched to sustain the weight.

A little below the eaves of the towers, and running all round the centre building, is a beautifully balustraded *balcon*, supported by corbels. The dormer windows, with their Corinthian or Ionic pilasters, small arches, and little flying buttresses, are particularly elegant: each of them, in fact, is of itself a study for an architect. The chimney-stalks rise from a basement of a very similar design to that used for the dormer windows.

I must not omit to notice a species of ornament employed here, which is to be found in many of the buildings in Pisa and Florence, and which has a peculiarly striking and effective appearance. I mean pieces of black slate or marble, in the shape of circles, ovals, and other figures, inlaid in the stone, which retains much of its original cream-colour. They are generally, but not always, surrounded by a moulding.

From either end of one of the sides of this square extends a wing, which terminates in a large round tower, the whole forming a long and imposing range of building. The centre part being considerably higher, becomes more prominent, and with its forests of towers, belfries, chimneys, and dormer windows, has a most striking and beautiful effect. In front of this side is the ground formerly employed as the tournament lists. It was originally inclosed by a moat, with a balustraded parapet.

On the opposite side of the building is a courtyard, round which there is a low range of buildings, intended for the accommodation of retainers, which was built by Louis XV. This court is entered by a fine arched portal, which has been the principal entrance to the chateau.

The interior of the building is by no means equal in detail or architectural feature to the exterior. The whole internal decoration of English houses of the same period is of a much higher stamp. Many of the apartments have on their panelled roofs the "F" and crown of Francis I. alternately with his arms, the salamander. The fireplaces are all large, with a broad projecting chimney-piece, which runs up to the ceiling or arch of the apartment. It is worthy of notice, that the staircase and the halls are finished with stone on the walls and panelling of the roofs.

I cannot better supplement this description than by quoting one or two passages from the pen of M. Alfred de Vigny, the accomplished author of "Cinq-Mars." "Between two miry marshes and an oak forest, far from any public road, the traveller suddenly comes upon a royal or rather a magic chateau. It seems as if some Eastern genie, constrained by another wonderful lamp, had built it

during one of the thousand and one nights, and had stolen it from the country of the sun in order to conceal it and the amours of its gay prince in that of the mist.

This palace is buried like a treasure; but those blue domes, those elegant minarets crowning the lofty walls or towering in the air; those long terraces commanding the woods; those light arrows moved by the slightest breath of air; those *arcs-en-ciel* interlaced on every colonnade, would make you believe yourself in the kingdom of Bagdad or Cashmere, if the blackened walls, with their carpets of moss and ivy, and the pale and melancholy colour of the sky did not attest a rainy country. It was, in truth, a genie who built those walls; but he came from Italy, and was called Primaticcio. It was, in truth, a gay prince whose amours were concealed there; but he was a king, and was styled Francis I. Everywhere his salamander sports its flames. It glitters a thousand times on the vaulted roofs, as do the stars in the vault of heaven. It sustains the capitals with its burning crown. It colours the glass with its fires. It winds along with the secret staircases, and everywhere seems to devour with its flaming looks the triple crescents of a mysterious *Diam*,\* twice a goddess, twice adored.

But the basis of this strange monument is, like itself, replete with elegance and mystery. It is a double staircase, rising in two spirals, which are interlaced from the lowest foundation of the edifice, till it towers above the highest belfries, and terminates in a lantern or *cabinet à jour*, crowned with a colossal *fleur-de-lis*, which can be seen from an immense distance. Two men may ascend it at the same time without seeing one another. This staircase by itself seems a little isolated temple. One would fancy that the obedient stone had bent beneath the finger of the architect. It appears (if we may so express ourselves) kneaded according to the caprice of his imagination. The beholder has difficulty in comprehending how the plans were drawn, and in what words instructions were conveyed to the workmen. The whole seems a passing thought, a brilliant idea, assuming, all at once, a durable body, a realised dream."

No one who has seen Chambord will say that this eloquent description is far-fetched or overdrawn.

The visitor is shown the room where Francis wrote on the pane of one of the windows the well-known couplet:—

"Souvent femme varie;  
Bien fou qui s'y fie."

The story goes that his sister, Margaret of Navarre, entered the room as he was writing it with a diamond on one of the windows, and that she retaliated for the libel on her sex by saying she could quote twenty instances of man's fickleness. Francis answered that her reply was not to the point, and that he would rather hear of one instance of woman's constancy.

"Can you mention a single instance of her inconstancy?" asked the Queen of Navarre.

It happened that a few weeks before this one of the gentlemen of the court had been thrown into prison, accused of some neglect of duty, and his wife, who was one of the Queen's ladies in waiting, was reported to have eloped with his page. Certain it was that both the page and the lady had disappeared, no one could tell where. Francis triumphantly appealed to this case; but Margaret warmly vindicated the lady's cause, and maintained that time would prove her innocence. Her brother shook his head, but promised that, if within a month her character should be re-established, he would not only break the pane on which the couplet was written, but also grant his sister whatever boon she might ask. A few days after this conversation it was discovered that it was not the lady who had fled with the page, but her husband. During one of her visits to him in prison, they had exchanged clothes, and he was thus enabled to deceive the jailor, and effect his escape, while she devotedly remained in his place. Margaret claimed his pardon at the King's hand, who not only granted it, but celebrated this instance of conjugal affection by giving a great *fête* and tournament. He also destroyed the pane of glass, but the saying has survived.

Another version of the destruction of the pane is, that Louis XIV. sacrificed it to please Mlle. La Vallière.

The visitor is also shown the room where Molière first brought out on the stage his comedy of "*Le Bourgeois Gentilhomme*" before Louis XIV. and his court.

It was at Chambord that Francis I. confiding in the promises of a man who had been his enemy for twenty years, entertained the wily Emperor Charles, while returning to his own kingdom after quelling the insurrection of the Flemings. Although it continued to be a favourite residence of royalty, it was not (at least so far as my memory serves me) the scene of any other remarkable historical incident. In

\* Some doubts have of late been started by M. Baillargé, as to Chambord being the design of Primaticcio. M. Baillargé is inclined to ascribe it to an architect of Blois, whose name has not come down to posterity. Others, again, attribute the design to Vignola.

† Lady M. W. Montagu, in one of her letters from the East, gives an account of a triple staircase of this kind, which she saw in a mosque at Adrianople.

\* The mistress, first of Francis, and then of Henry II.



later times it was inhabited by Stanislaus, the deposed King of Poland, and afterwards by Marshal Saxe. The former filled up the moat which originally encircled the chateau, a proceeding which, while it was dictated by motives of prudence on account of its insubriety, detracts from the appearance of the building.

After the revolution, Chambord was purchased by public subscription, and presented to the Duke of Bordeaux, its present proprietor.

#### CHURCH-BUILDING NEWS.

**Cambridge.**—The restoration of the church of St. Mary-the-Less is about to be commenced, by the erection of a new oak roof, at the probable cost of 1,800l.

**Maidenhead.**—All Saints' church, Boyne-hill, near Maidenhead, Berks, has been consecrated. The buildings, which are wholly of brick, together form three sides of a quadrangle, on the north being the church, on the east the parsonage, and on the south a school. The church comprises a nave, with two aisles divided by clustered columns, and a chancel separated by a screen. The columns are of stone, the arches being of stone and brick, serrated at the edges, and placed in alternate courses. The walls are of red brick, interspersed with black. The chancel presents a combination of colours by the use of bricks and stone of various hues; and the east end has alabaster and inlaid marbles, of which the prevailing colour is white. The church was designed and mainly built at the cost of the Misses Hulme, daughters of the Rev. W. Hulme, a clergyman well known at Reading. All the windows of the church are of stained glass. The architect of the buildings is Mr. G. E. Street, of London, who also contributed as well as designed the stained glass, a picture of our Lord surrounded by angels over the chancel arch. The contract was carried out by Mr. Joseph Mills, of Stratford-on-Avon.

**Eaton.**—Christ Church, Eaton, near Congleton, was consecrated on the 1st inst. The edifice, which is built of Yorkshire stone, in the Early English style of architecture, consists of nave, chancel, vestry, porch, and square tower, with broken battlements, surmounted by a vane. The site was the gift of Mr. G. C. Antrobus, of Eaton Hall, who has also subscribed 500l. towards the erection: his brother, Sir Edmund Antrobus, subscribed 500l. towards the same object. The entire cost has been about 1,400l. The church will hold about 250 persons. The large east chancel window represents the apostles and the following subjects:—St. John baptising our Lord, with the text, "Repent and be baptised;" in the centre, our Lord holding an orb, the emblem of his power; the Crucifixion, and the Last Supper, with the text, "Do this in remembrance of me;" &c. the Freemasons' emblems are displayed, the window being the gift of the Freemasons of Congleton, Macclesfield, and Crewe. The two south chancel windows represent the birth of our Saviour, Christ disputing with the Doctors, and Christ blessing children, with texts. These windows were the gift of the pupils of the Rev. J. P. Firmin, of Dane Bank, the incumbent. The north chancel window is a representation of the Resurrection, being a memorial to Mrs. Brown, the wife of Mr. Raffles Brown, of Liverpool, the architect of the church, by whom it was presented. These stained glass windows were executed by Messrs. Edmondson and Sons, of Manchester.

**Wheaton-Aston.**—The church here has been rebuilt and consecrated. The edifice, which is of stone, has been erected by Mr. Godfrey, of Birmingham, from designs prepared by Messrs. Bidlake and Lovatt, of Wolverhampton. It consists of nave, north aisle, north and south transepts, and chancel, with vestry between the latter and north transept. On the north side of the west front is a bell-tower, and on the south side a porch, both of which form entrances to the interior. The pews, which will accommodate nearly 300 persons, are open, and about one-third free. A gallery across the nave provides space for the organ and sittings for children of the school. The style adopted is the Early Decorated. The roof is open-timbered, stained and varnished. A stained-glass window in the chancel, from the works of Messrs. Chance and Co. of Smethwick, has been presented by Mr. John Hartley, of Wolverhampton, who also subscribed liberally to the building fund.

**Liverpool.**—The foundation-stone of a new church, to be called Holy Trinity, was laid on the 1st inst. in Parliament-street, by the Rev. Dr. McNeill. It will be rather a small edifice, of Pointed Gothic, having an unpretending front elevation to the street, opposite the Park Theatre. The church is to be built from designs furnished by Mr. George Williams, an architect. The chief feature will be a bellry 57 feet high. The edifice is to contain sittings for 581 persons; and, in addition to the church, the scheme embraces plans for schools for 450 children. The whole scheme, it is estimated, will cost 4,500l. of which 700l. are yet unprovided for, the rest having

been made up by subscriptions. The contracts for the excavation, brickwork, and masonry, have been taken by Mr. Tomkinson; for the joiner-work and carpentry, by Messrs. W. Leyland and Co.; and for the plumber-work and glazing, by Mr. Edwards.

**Glasgow.**—The united Presbyterian Church in St. Vincent-street, is in progress. The masonry, says the *Gazette*, of the wings (corresponding with the aisles of a Gothic cathedral), is now all but completed, being carried up to the height of the gallery roofs: the two porches, forming the north and south ends of the central portion of the building, and which correspond to the nave in Gothic architecture, are now considerably advanced. Considerable progress has also been made with the tower, which occupies the north-east corner of the site. The architects are Messrs. A. and G. Thomson, of Glasgow. At the Dean of Guild Court, according to the same paper, authority has been given to West Nile-street Congregational Church, for the erection of a chapel at the north-west corner of Campbell-street and Waterloo-street. The designs were furnished by Messrs. Barclay and Watt, architects. The style is Roman Doric, adapted to meet the requirements. The principal front is towards Waterloo-street, and the entrance is by a flight of broad steps leading to a portico of four columns, which stands in advance of the staircase wings extending on each side. There are no windows behind the galleries, but the space above the galleries is contracted in width, and forms what in Gothic would be the clerestory, along both sides and ends of which lunette windows are carried. The ceilings over the galleries are segments of a circle. The pulpit end of the chapel is formed into what may be termed a recessed portico with square pillars and platform behind communicating with the vestries. The church will accommodate nearly 1,000 sitters, and in the basement story there is a lecture-room, seated for about 200, and a large hall for Sabbath schools. The cost of the building, including the price paid for the ground, will exceed 10,000l.

**Kells (Drogheda).**—A Roman Catholic chapel is in course of erection in connection with the range of buildings comprising a convent, schools, parochial residence, and church, at Kells. In the chapel, says the *Drogheda Argus*, one of the first objects that strikes the eye is the large circular space or stucco canopy on the ceiling over the sanctuary, which is divided into sixteen compartments, radiating from a small central circle. All these radiating spaces are decorated. The prevailing colours are green, gold, and saffron, forming the ground for passion-flowers and shamrocks interwoven. The central circle and the mouldings are all gilt. In four spaces at the corners of a square, within which the large circle is formed, are the four Evangelists, painted in full size. Four panels, running along within straight lines above the altar, are filled with medallions of St. Peter, St. Paul, St. Patrick, and St. Columbkille, in life colours. The stiles and bordering spaces are enriched with scroll-work. The grand altar and the surrounding parts are decorated in the florid Gothic style. Red, blue, white, and gold prevail, and the mouldings are brought out in gold. The space about the tabernacles of the side-altars is painted imitation of Caen stone on paper, after designs by Pugin (?). The mouldings and stucco work around the altar-piece, representing the Assumption, are gilt. Mr. H. Maguire is the contractor.

#### STAINED GLASS.

**Winchester Cathedral.**—The stained glass memorial window to the officers and men of the 97th regiment, who fell in the Russian war, is now fixed in the western end of the south aisle of the cathedral. The window, which is a perpendicular one, and was built by Bishop Edesing, in 1866, consists of ten openings, besides nine small spaces in the apex and sides of the arch, the top one of which contains the heraldic insignia of the Duke of York, who was colonel of the 97th, and from whom it derived its name—"The Ulster Regiment," the duke being Earl of Ulster. The small compartments on each side contain roses. Below the duke's arms are the figures of St. Michael the Archangel, who is represented vanquishing the Prince of Darkness, and St. George, the patron saint of England, overcoming the dragon. The openings on each side of these saints contain angels, bearing the emblems of peace and victory. In the spaces near these is introduced the shamrock, the 97th having been raised in Ireland originally. The middle series of lights are filled with representations of Joshua, Gideon, David, and Jonathan, four of the warrior kings of the Israelites; the lower series with four figures of Saxon monarchs, in the following order:—Ethelbert, Egbert (the founder of the English monarchy), Ethelred, and Alfred the Great. The background of the figures is a dispersed colour, and each of them is surmounted with a perpendicular canopy on a coloured ground. The glass is of the "perpendicular

period." In the Gothic panelling under the window are fixed four tablets of Caen stone, in which are carved, in perpendicular black letter, with coloured capitals, the inscriptions. Mr. Charles Gibbs, senior, of New-road, London, was the artist.

**Christ Church, Macclesfield.**—Another stained glass window has been added to those already in this church. This window has replaced the one on the south side, formerly filled with stained glass of an inferior description, which has been taken out. The style is a mosaic, with large medallion in the centre, containing "the good Samaritan." The priest and Levite are represented as passing by "on the other side," while the good Samaritan, who is pouring oil into the wounds of the "man that had fallen among thieves," occupies the foreground. The window is a memorial one. The work was executed by Messrs. Edmondson and Son, of Manchester, making the fifth window put up in this church by the same firm.

**Gloucester Cathedral.**—We understand, says the *Gloucester Chronicle*, that the Rev. T. Murray Bowne, honorary canon, has addressed a letter to the Dean and Chapter, stating that it is proposed, with their consent, to remove the dingy glass with which the great west window at the cathedral is at present filled, and substitute for it stained glass, as a memorial to the late Bishop Monk.

#### DISEASE AND THE BOARD OF HEALTH, AND HEALTH OF TOWNS BILL.

THE tocsin of alarm has been sounded very judiciously by the Board of Health. The approaching cholera has given us due warning, in the same manner that it has invariably and unerringly done before: its advent (and that before long) has been preceded by severe diarrhoea all the autumn, and unequivocal cases of cholera have shown themselves in London as well as in the country.

It has twice invaded us from the shores of the Baltic, and will do so again. If we neglect the precautionary measures which ample experience has demonstrated that we possess—the effectual means of checking the earlier forms of the disease,—the condemnation for our neglect will be a just retribution for our indifference to the greatest calamity which has ever afflicted the human race. It is the duty of every man to urge on the public authorities the fulfilment of their duties and powers which the Government has liberally placed in their hands to avert or mitigate an impending and great scourge.

Under the provisions of the Health of Towns Bill, there is given to boards of guardians the power to appoint medical inspectors over the whole kingdom,—over towns and hamlets; whose business should be to ferret out the sources of danger and poison which infect, in a thousand forms, our towns and villages; in alleys, and holes and corners, in gutters and drains, in ditches, and stagnant pools and ponds, which breed malaria, and thus unsuspectingly poison thousands of our fellow creatures.

A large amount of these distressing evils may be averted. This is not the time for a heartless and frigid economy to nullify the means of doing good and saving the lives of ourselves and neighbours: we must be up and doing. The appointment of medical inspectors by the boards of guardians of towns and unions should be at once determined upon: their duties are onerous and most responsible. It is not enough to constitute parish surgeons as local inspectors: their hands are already too full in visiting the sick. It is competent for guardians to provide medical gentlemen as inspectors who are not burdened with other engagements, and who could investigate large districts of country, and bring to light the causes of epidemics with a view to remedy them. There are not more than twenty to thirty inspectors as yet in the whole country, owing to the ignorance of boards of guardians in not comprehending their duty, or to their extreme selfishness, if not wickedness, in saving a paltry tax,—the salaries of the inspectors. Thus the lives of thousands are perilled rather than use the means of averting the awful spread and mortality of cholera. The humanity of the Legislature is completely ignored and thwarted by the cruel and ill-timed economy of those public authorities who have refused to carry out, or have very imperfectly carried out, the benevolent means at their disposal, in the several Acts of Parliament,—in the Act for Removing Nuisances, and the Health of Towns Bills, and other Bills.

As before, the old adage will be realised of shutting the stable door when the steed is stolen; so, if the providence of God wills that we should again suffer the dreadful evils of pestilence, as we have suffered so fearfully in 1834, 1849, and 1854, we shall be found as helpless and unprepared as we were then. It is of little use to contend against the dire cholera when it bursts out with unrelenting fury, destroying one-half of those attacked. What I urge is the prevention of those calamities by discovering all the causes and



sources of epidemics, and adopting the means of checking them,—means which usually are within our reach if duly pointed out and liberally used. Even in an economical view, there might be vast saving to parishes by diminishing the mortality of those heads of families whose dependants may be thrown on the rates.

Coincident with the necessity of averting cholera, I would beg to advert to a great public want,—the great want of public conveniences. London is the least commodious place of any large town: all the capitals of Europe are better provided, and especially Paris, where common sense and utility have prevailed over a ridiculous modesty.

The powerful press is the best friend of the people, and their strong advocacy of an universal want will bring them a grateful, though silent, thanksgiving. In the hope that the subjects to which I have referred above will be admitted to have a strong claim upon the journals of the country, I have not hesitated to plead for their prompt co-operation.

Paris.

R. W. M.D. F.R.C.S.

#### WREXHAM MUSIC-HALL.

ON Wednesday evening, the 2nd, Mr. Davidson, of the Chester Government School of Art, delivered a lecture on printing, in aid of the funds of the Wrexham Literary Institution. In closing the lecture, Mr. Davidson said:—

"And now let me again urge on the attention of all present the claims of the Institution, through whose instrumentality these lectures are given.

I have spoken of the days when books and papers were scarce, and obtainable only by the few. Thank God, that day is past, and public reading-rooms are numerous; but they want support, not only from the rich, but from the working classes, for whose special benefit they are intended. Let me beg of all present to bear in mind that, whilst schools under government and clerical inspection are established, these must fail in accomplishing their ultimate end, if the great work is not taken up and continued when the boys and girls become men and women. In towns like this, for instance, where there are few, if any, amusements for the people, is it not our bounden duty to provide for their moral and intellectual culture? The tavern, with its plate-glass windows and glaring gas-lights, with its singing-room and its sporting paper, holds out its attractions, and lures especially those who "have nothing else to do," for idleness is the source of all evil. Ought not we then to gird on our sword and take up our shield to war with ignorance, idleness, and intemperance?

Ought we not to provide places where the better qualities of a man's heart and mind are brought out, and from which he can carry to his home, not blasphemy and passion, but instruction and peace?"

On the following evening the public distribution of the prizes gained by the students at Wrexham under the tuition of Mr. Davidson took place. The mayor (Mr. T. Edgworth) took the chair, and opened the meeting with an address, in which he urged the usefulness of drawing either in business or as an accomplishment, and earnestly begged the rising generation to avail themselves of the advantages of the drawing classes now established in the town. Mr. Davidson next addressed the meeting at some length, firstly detailing the origin of the Wrexham branch School of Art: he next illustrated on the black board the influence drawing has had on our manufactures; sketched the jug of the past and the jug of the present day, our toys, the dog of former days and the toy-dog our children now have, our nursery pictures, &c.: all have their influence in educating the eye and cultivating the love of the beautiful.

#### CONVERSION OF WOOD BY MACHINERY. INSTITUTION OF CIVIL ENGINEERS.

At the meeting on the 1st instant, Mr. R. Stephenson, M.P. president, in the chair, the discussion upon Mr. Molesworth's paper "On the Conversion of Wood by Machinery," was continued throughout the evening.

Exception was taken to the author's preference for the wood framing generally used in America. It was admitted, that whilst it was new it might be sufficiently steady, and might absorb, or neutralize the vibration; but it was asserted, that the screws soon worked loose, the joints became slack, and the framing trembled. On the other hand, however, cast-iron framing was more durable, the joints continued firmly attached, and the whole fabric remained steady; it was easy to neutralize the vibration by inserting beneath the plunger blocks, sheet lead, or strips of wood, which prevented any jarring, and the shafts continued to run evenly, for a greater length of time.

Great difficulties had been originally experienced in setting circular saws, so as to make them run truly;

but since a soft packing had been adopted, they could be run at much higher speeds, and the large plates could be made much thinner. It was asserted, that none of the American circular saws could produce such a good surface on flooring boards, as could be given to them by the fixed planes, under which the boards travelled. It was only necessary to keep the planes in good order, and to make the boards travel sufficiently quick. Straight-planing could be performed at the rate of 50 feet to 60 feet per minute, by fixed planes; whilst the edges of the boards could be worked off square, or be ploughed and tongued by circular cutters. The speed of the circular saws in this country rarely exceeded 7,500 revolutions per minute; at that speed thin saws were worked, whilst those used in America were much thicker.

At the large establishment of the late Mr. Thomas Cubitt all the sawing was performed by circular saws, and beautiful specimens of work were exhibited. The timber could be cut to any angle by saws fixed in rising and falling spindles, some of which made as many as 6,000 revolutions per minute; the men, however, generally preferred about 3,000 revolutions.

Smart's circular saws were originally about one-eighth inch thick, thus wasting much timber. The late Sir Isambard Brunel then introduced the large veneer saws, put together in segments. Holland invented the system of packing the saws, and now they could be worked at very high speeds, when 36 inches diameter, and only 14 gauge in thickness. It was found advantageous to leave a space of 2 inches between the teeth, when the saw had its full diameter of 36 inches, and when by constant sharpening the diameter of the saw decreased, the space between the teeth diminished in a regular proportion.

It was urged, that the production of high finish by machinery was a difficulty but not an impossibility. Hitherto the study had been to produce quantity; and quality of work had been sacrificed to it.

#### ROYAL ENGINEERS' MILITARY ARCHITECTS.

##### CONDITION OF BARRACKS.

It is pleasing to find that your admirable observations relative to the sanitary condition of our Indian army have received the attention of Government, and that it is probable your suggestions will be adopted. The experience gained during the late war should be put into practice. We cannot forget the fearful havoc that was made in the ranks of our proudest legions by the ravages of disease, accelerated, if not in a great measure produced, by inattention to sanitary measures; nor can we forget the great improvements which followed the successful operation of the sanitary commission subsequently appointed: we therefore earnestly hope that similar results will reward the labours of those who seek by sanitary measures to promote the health of our countrymen in India. But while we sympathize with all such undertakings, let us not be unmindful of those nearer home. The present state of many of our military establishments calls for the special attention of Government: in fact (as Mr. Rawlinson suggested at Birmingham), every barrack occupied by British soldiers should be inspected, with a view not only to sanitary, but other improvements; for, notwithstanding the large sums of public money annually expended on these establishments, through the medium of the Royal Engineers, urgent wants are unsupplied, and improvements, naturally expected in proportion to the outlay, are sought for in vain; no general plan is laid out, or permanent improvement aimed at; old defects are perpetuated; changes, involving considerable expense, are made to suit some present purpose, which is no sooner answered than a further alteration is made for some new requirement; and so, year after year, buildings are changed, altered, and modified, and left in no better state than they were found. Married soldiers with their families, perhaps to the number of five or six, have, in some instances, no other "quarters" than one common barrack-room, without even a single division or screen, which ordinary decency itself would demand.

Lavatories, or wash-houses, are often placed at inconvenient distances, so that the soldier to reach them must cross his barrack-square for the purpose of washing, and he will find the house provided for that purpose so badly drained, that he is obliged to stand on an inverted washing-bowl, or some such article, to keep his feet from wet, while he washes in the water as it flows directly from the cock. Surely these things cannot promote either the moral or physical welfare of our army. Defects, we know, are common to all, or most, large establishments, but there can be no excuse for many that now exist in our barracks, particularly when the country pays so dearly for their removal; indeed, so long as the care of these places is intrusted to engineer officers who have no interest in the work, or, at least, rest satisfied so long as the

mere formal routine of the duty is gone through, it is to be feared no great improvement can be expected.

Where, may we ask, are our military architects? Are they not required as well as military surgeons or engineers? Let facts be considered and allowed to answer, and they will show the many evils resulting from the present system; the vast expense of all works undertaken by the Royal Engineer Department, not excepting the mere ordinary barrack repairs, which in some cases cost more than with judicious management would be sufficient in a short time to remodel the entire structure; and these facts, speaking louder than words, would further show the benefits which would result to the public service if each military district was placed under the charge of an architect who would constantly reside in that district and be solely responsible for the proper maintenance and efficiency of the several barracks under him, and who would, at the same time, be independent of all other local military authorities. He would thus be enabled to devise and adopt for his guidance some general improved plan of each barrack, subject of course to the sanction of the Inspector-general of Fortifications; and, having this plan before him, all changes and improvements should be made with a view to the perfecting of it: our barracks would then become objects of national pride, and not be, as at present, objects of national disgrace. C. E.

#### THE NATIONAL GALLERY OF PORTRAITS: SCULPTURES AND PAINTINGS.

THE portraits of celebrated and historical characters have got a temporary home in Great George-street, Westminster, but what precise degree of progress has been made in the collection we have not very lately heard. Our purpose at present is twofold,—first, to draw attention to a suggestion of M. Delpeche, the reducer of sculptures, that a gallery of sculptured portraits reduced from original busts, &c.: to a certain uniform standard—and of which copies might readily be multiplied for local or provincial galleries, public and private—would be preferable in many respects to painted portraits. This is too obviously a good idea to require much expatiation in detail. M. Delpeche is an excellent authority as regards the practicability of faithfully reducing such portraits, having already made himself favourably known in London by his own system of reduction, whereby, for example, the bust of Clytie, in the British Museum, was reduced for the Art-Union of London, and of which reduced copy, rendered in Parian by Alderman Copeland, the Art-Union of London has distributed no less than 500 copies to its members. M. Delpeche is also well known to have reduced various other sculptures, such as Marochetti's Princess Elizabeth and Prince Albert, Mary Thynne's Dukes of Kent and Gloucester, Wyon's Engineers, and Monti's Louis Blanc. The superiority of sculptured over painted portraits in some respects is unquestionable, and especially so in the multiplication of portrait-galleries; but why not combine the respective excellences and advantages of both, even in the same gallery? The other purpose we had in view was to point attention to the fact (which seems, so far as we are aware, to have been overlooked) that already there is a fair beginning of a national portrait-gallery of paintings hid away in the dark, on the walls above the ornithological and other collections in the British Museum. Why should not some of these portraits be added at once to the collection in progress?

#### THE DUNFERMLINE SCHOOL OF ART.

THE Dunfermline School of Art will perhaps be worth your attention, now that the public are taking a little more interest in such matters; and, in my opinion, the non-success of Dunfermline school should not be allowed to die away unnoticed. Its history is soon told. In 1854, efforts were made by the local committee, and a sufficient sum collected to justify their building, and getting all the et ceteras required—at a cost of nearly 700*l.* or 800*l.*: a school-house, and examples, &c. were obtained. The Department appointed a master (Mr. Leonard Baker) to open the school. The committee obtained everything that could be wished: there was, then, no cause of complaint on this head. Unfortunately, though, a good cause for complaint did exist: no one on the committee understood anything about the management of an art-school; and what was even worse, the fact of a school being connected with Government does not seem to be any minute particulars to explain what took place, I will only inform you, "leaving the rest to known facts," that after two years' hard work, the master found it impossible to make the Dunfermline school succeed, unless the committee agreed to introduce a course of instruction and of encouragement, so that more interest could have been excited; and, after a long illness, he



felt it his duty to resign. An inspector was sent down by the Department. Great efforts were made, and for a time things looked pretty well, but it had not been rightly arranged, and all I need say is this, that on the 3rd of last month everything was put up for sale. Only one person attended the sale—a very aged gentleman—who had been persuaded that all the examples and fittings would be useful to him for completing a scheme for an institution which he intends leaving to the Bridge-of-Allan people. Everything, independent of the building, was sold for 50*l*. No person attended to bid for the building. There is something not quite right in the system, depend on it.

ONE WHO WATCHES IT.

#### SCHOOL OF ARTS, STIRLING.

MR. LEONARD BAKER, of the High School of Stirling, delivered a lecture on "Art" to this Institution on Wednesday evening, the 2nd inst. The chair was occupied by Sir John Hay, bart. and the audience was large. At the close he said:—"Since I have been in Scotland, I have not found that interest taken in art which I could have wished. Art-education is not yet appreciated anywhere in Britain, and it is only among a few that we observe any progress. I am exceedingly desirous that everybody should seriously take into consideration the propriety of establishing an art-school in Stirling. I am sure it would succeed well, and I do not say so without having fully considered the subject. I know that many look upon art simply as an amusement. Why is this? It is because all they know of art could not suggest anything else but its being an amusement; and many when they find it more difficult to learn than they anticipated, throw it up in disgust, and make no attempt to overcome the difficulties in the way of the acquirement of a thorough knowledge of its principles. It is all settled in this way—that they have no taste. No one denies that to excel in anything requires superior ability; but we are also aware that no one can attain such perfection without close and careful study. We are accustomed to hear that, unless we have taste, art is of no use to us; but I conjecture it might be as well said that unless the child has a taste for it, there is no use learning the alphabet or multiplication-table. You will, perhaps, say that the cases are not similar, because in the latter it is a necessity, and taste must not be consulted. I think it ought to be the same in regard to art, because at a time not very far distant reading and arithmetic were not thought any more necessary than art is now as a branch of education; and I have no doubt that in the future a similar illustration may be drawn from the way in which art was looked upon in the nineteenth century, to enforce the teaching of some other branch of human knowledge as of universal use.

#### RYE CHURCH CLOCK.

HAVING seen in your interesting paper a letter from "An Inquirer," wishing to be informed of some particulars, to be relied on, respecting the old clock of the old church of the old town of Rye, and being an old inhabitant of the town, I hasten to satisfy his curiosity, as far as I am able. In the first place, I must premise that "Inquirer" has made a slight mistake as to the position of the clock: he thinks it is placed on the east face of the tower, over the great east window; instead of which it is placed on the north face of the tower, and over the north window, through which latter the pendulum, which is, as he says, withinside the church, may be seen in motion. The pendulum being the principal object of inquiry, I will first speak of this, and inform "Inquirer" that our pendulum is 18 feet in length, being 4 feet more than that of the great clock at Westminster, but the weight falls considerably short of that of the latter, which is over 6 cwt.; whereas ours is only 3 cwt.

Having disposed of the pendulum, I will next proceed to an examination of the antiquity of our clock. On reference to the article, "Horology," in the "Ency. Lond." I find it mentioned that the first pendulum-clock made in England was in the year 1662, by Mr. Fromant, a Dutchman. Had we no other evidence to adduce, this would decide the age of our clock not to exceed about 200 years; but some few years ago Mr. Octavius Morgan, a gentleman who has devoted much time to the study of old clocks, came to Rye for the express purpose of examining our clock, when he did me the favour to call on me, to ascertain what information, if any, I could give him; when, in the course of conversation, he said that our clock was not originally a pendulum one, as was apparent from many of the works still remaining, and that he was of opinion that the Rye clock is the oldest clock in England now going. Of this fact I will give what additional proof I can. There has long been a tradition in the town that our clock was taken in the Spanish Armada, and presented to the

town by Queen Elizabeth; but in all the researches (and they were not a few) that I had occasion to make some few years ago among the records of Rye, when I was preparing to publish my history of our ancient town, I never could trace the slightest indication of such having been the case. However, we have proof (I should rather say proofs) of Rye Church having had a clock several years before the period of the Spanish Armada, which will appear from the following entries:—

1513.—Paid the cooper for a barrel for the chime .....	£0	2	8
1515.—For working upon the frame of the clock and dial in the steeple .....	0	2	0
The man who made the clock-work and dial .....	2	6	8
The man of Winchelsea, that made the clock, in full payment of his bargain .....	0	6	8
1561.—The clock-maker for making the chimes go .....	1	16	0
The house over the clock .....	0	1	6

This last item seems to mark the certainty of our town having a clock at that time, as we still have a covering, or house, to shelter the two boys, who stand underneath with hammer in hand to strike the quarters, each on his own separate bell.

The same article in "Ency. Lond." says:—"The oldest clock which we have in England that is supposed to go tolerably, is of the year 1540, at Hampton Court;" but if our entries of 1513 and 1515 prove the existence of a clock here at that time, and we have no evidence of any new one since, then we may conclude that the old clock of the old church of the old town of Rye is the oldest in England now going, and that it has the longest, though not the heaviest, pendulum in the kingdom.

WILLIAM HOLLOWAY.

N.B. The extreme lightness of the pendulum is accounted for from the shaft being of wood, with a slight piece of iron on either side, the ball alone being of lead. The sexton tells me that a few years ago the pendulum was shortened, previously to which it was 25 feet long instead of 18 feet.—W. H.

#### LIVERPOOL ARCHITECTURAL SOCIETY.

A MEETING was held on Wednesday, the 2nd inst. Mr. Huggins in the chair, when a letter was read from Mr. R. Rawlinson, re-urging that while there was no memorial foundation stone under St. George's Hall, a stone with coin and tablets was buried on the site originally intended, and ought to be taken up.

The proceedings of the Liverpool Academy, especially in connection with the favour they show to one particular school of painting, have displeased some of the community, and Mr. Boulton gave notice of a motion he intended to bring before the next meeting, calling upon the town council, who grant aid to the Academy equivalent to 200*l*. a-year, to require from the Academy a detailed report of their proceedings.

Mr. Pieton then read a memoir of the late Mr. A. H. Holme, architect, of whom a short notice appeared in our last number.

#### GLASGOW ARCHÆOLOGICAL SOCIETY.

GLASGOW CATHEDRAL.

THE December meeting of this society was held on Monday, the 7th inst. Mr. Robert Hart, in the chair. Several candidates for admission were balloted for, and duly elected. Mr. A. Bell read a paper entitled "Notices, Historical and Antiquarian, concerning Glasgow Cathedral," in which he threw some new light on the early history of the see, and criticised the various opinions regarding the age of the building, which have been advanced by writers on that subject. Upon the whole, he was inclined to think that Mr. Honeyman had set that matter at rest, though he still thought it possible that the crypt may have been commenced in the twelfth century.

An animated conversation followed the reading of Mr. Bell's paper. Mr. Roched called attention to examples of early architecture in Scotland which have never been described, particularly referring to several small chapels on the coast of Kintyre, which, he had no doubt, were erected by the Culdees, at the same period as the ancient chapels in Ireland of a similar character, so ably illustrated by Mr. Petrie. He objected, however, to these being called specimens of Norman architecture, as they belong to a period anterior to the conquest.

Mr. Honeyman exhibited a drawing of the only part of the cathedral belonging to the twelfth century. It is a small respond in a dark corner of the crypt, displaying the characteristics of the Transitional period,—a rudely sculptured capital with massive abacus. He contrasted this with one of the other capitals of the crypt, which are most exquisitely moulded, and showed that they were evidently about seventy years later.

Mr. Gildard considered the hypothesis of Mr. Bell satisfactory, that the cathedral was reared over the spot where the cell of St. Mungo stood, and that this sufficiently accounted for the selection of such a peculiar site, and the consequent erection of the crypt. The society resolved to hold a meeting in the cathedral on Saturday first.

#### THE ROYAL ACADEMY MEDALS.

On Thursday evening, the 10th inst. the award of medals made by the Academy was announced, Sir Charles L. Eastlake, presiding. The following is a list of the successful candidates:—

Gold medal for the best historical picture in oil colours: subject, "The Good Samaritan."—Philip Richard Morris.

Gold medal for the best composition in sculpture: subject, "The Good Samaritan."—George James Miller.

Gold medal for the best finished design in architecture: subject, "A Design for a National Gallery."—Francis T. Gompertz.

The Turner gold medal, for the best landscape in oil colours: subject, "An English Landscape."—Neville O. Lupton.

Silver medal for the best painting of a figure from the life, in the Life School.—Alexander Glascock.

Silver medals for the best study from the living draped model, size of life.—James Waite, Henry Garland, and J. M. Barber.

Silver medals for the best drawings of Academy figures, done in the Royal Academy.—Ebenzer Bennett and Samuel Lynn.

Silver medals for the best accurately figured drawings of the West Front of Spencer House, with details.—Thos. Vaughan and Henry M. Eytton.

Silver medals for the best drawings of a Statue or Group in the Antique Academy.—Wm. Hullyoake and Frederick Graves.

Silver medal for the best models (in clay), in the round of a Statue or Group in the Antique Academy.—John C. Worman.

Silver medals for a Perspective Drawing in Outline, applied either to a known building (exterior or interior), or to a design.—Thos. Vaughan and Geo. Atkinson.

Silver medal for a specimen of Sciography.—Thos. Vaughan.

There were three candidates for the gold medal, which the president regretted on the part of the council was not more responded to; and four for the silver medal, in architecture.

#### NOTES UPON IRON.

THE quotation for small lots of the ordinary pig-iron of South Staffordshire is now 3*l*. 10*s*. Sales are, however, made in certain instances at 3*l*. 5*s*. and in some few cases as low as 3*l*. 2*s*. 6*d*. A statement has been circulated to the effect that "an eminent firm has purchased 8,000 tons of pigs at 3*l*. per ton, which were quoted a few weeks before the panic at 4*l*." The statement, however, if founded upon fact, must not be looked upon as representing the condition of the pig trade generally. If, however, the existing relative proportion between the supply and demand should continue, the period cannot be far distant when in many, though not all cases, pigs will be sold at 3*l*. The demand for manufactured iron, as we have intimated, is not equal to the supply of pig-iron. A vigorous effort continues, however, to be made to produce more similarity between the two, and to keep pigs from receding below their present level.

More blast-furnaces have been put out since our last, and yet stocks are not kept worked up. We have summed up thirty-five blast-furnaces unfit that were in fire before the panic, and more are to go out.

The reports of malleable-iron makers, announced on Change at Wolverhampton on Wednesday, and at Birmingham on Thursday, were of a more cheerful character than last week. The advices from America show a rapid progress towards a restoration of prosperity; and more remittances are to be had from thence this week than last. Monetary affairs at home also are evidently improved. With these "signs of the times," makers appear disposed to be satisfied, even if, as is the case, they are not accompanied with orders from either the home or the foreign market. From some directions at home there have been inquiries in the week, which it is hoped will lead to orders being given out; but, with this exception, no alteration can be noted upon our last notice of the state of the iron trade of South Staffordshire.

INFANT SCHOOLS.—Infant schools are to be built in Weymouth-terrace, Mr. Charles Laws, architect. Tenders have been received, ranging from Wood and Sons, 583*l*. to Smith, 418*l*. The latter was accepted.



## Books Received.

## VARIORUM.

A PROSPECTUS, in form of a tract, has been issued by Mr. John W. Papworth, architect (Great Marlborough-street), of "An Alphabetical Dictionary of about 50,000 Coats of Arms, belonging to Families in Great Britain and Ireland, forming an extensive Ordinary of British Armorial, upon an entirely new Plan." An example of the new scheme is given. On this plan the arms are systematically subdivided throughout, and so arranged in alphabetical order that the names of families, whose shields have been placed upon buildings, painted glass, seals, plate, brasses and other sepulchral monuments, sculptured or painted portraits, &c. whether mediæval or modern, can be readily ascertained. At present, any family name being given, the appropriate coat of arms may be easily enough found; but by the new plan the reverse process will become practicable, so that any coat of arms, or heraldic symbol, or combination being given, the family names to which they are appropriated may readily be ascertained. An arrangement such as this cannot but be of great and general utility.—In treating of the smoke of towns question, we have occasionally drawn attention to a collateral question well worthy of consideration, namely, how far the conversion of smoke into carbonic acid gas may militate against the sanitary objects in view, even in spite of the law of the mutual diffusion of gases. In a tract titled "Coal, Smoke, and Sewage, scientifically and practically considered; with Suggestions for the Sanitary Improvement of the Drainage of Towns, and the beneficial Application of the Sewage," Mr. Peter Spence, of Manchester, urges the importance of this question in a sanitary point of view, and proposes a system of atmospheric or gaseous sewerage, and the complete removal of all gases to a safe distance from our towns. The original suggestion of a mode for effecting this object, Mr. Spence observes, is not his; but he is not aware of its having ever been given to the public in a practicable shape, and there are some views of the matter, he adds, which may be safely presented as new. He would combine this gaseous sewerage in such a form with our town drainage, as would bring all the liquid sewage into contact with the gases from our furnaces and our house fires, the liquid sewage being kept, as now generally proposed, separate from all surface drainage. "The semi-liquid and fetid mass," he continues, "being brought into contact with the sulphurous acid gas (the result of our perfect combustion), would have its putrefactive process arrested, and the foul emanations neutralised, all its ammonia converted into sulphate and thus permanently fixed, and all the sulphuretted hydrogen and other unwholesome gases decomposed. When concentrated in this innoxious form from various districts to a convenient place, it might with perfect safety be manufactured into manure more valuable than the richest guano, as I shall afterwards attempt to show. All the gases from our coal combustion would have to be conveyed along the same tunnels to centralizing conduits converging to a point, where an immense chimney, at least 600 feet high, should be erected, to discharge these gases into the atmosphere,—the ascensive power being obtained either from the retained heat of these gases, which would probably be found quite sufficient, or if not, artificial heat could then be supplied to effect that object." In a "Special Report of the Medical Officer of Health to the Strand District on Slaughter-houses," published under the authority of the Board of Works for the district, the medical officer, Mr. Conway Evans, after treating of the abominations of slaughter-houses in and about the crowded dwelling-houses in the Strand, calls upon the local Board of Works to oppose the grant of every license for slaughtering in a kitchen, cellar, or area under an inhabited house,—or behind such house, might have been added. We happen to know of an instance in which a Strand slaughter-house, in a narrow and close area behind the street houses, must not only have been an abominable nuisance to the lodgers in the house itself to which it is attached, but was so to many other houses, the windows of which are close to it; and the stench from the slaughter-house drain was so intolerable inside an adjoining house that the drains had to be overhauled and renewed, but without amending the evil to any extent. Moreover, from the constant incursion of animals, even this adjoining house was infested with troops of various kinds of fleas, and particularly a very small black species, of which more complaint was made by the inhabitants than even of that wonderful species of the bug tribe, "the Temple Bug," with which the same unfortunate dwelling was infested. Why the practice of slaughtering beasts in the midst of crowded dwellings is still permitted one can hardly imagine.—The "Toll Reform Association" (19, Strand) have published a "Statement of Committee, with map and case," transmitted to Lord Palmerston, in which reasons for sweeping away all

tolls within six miles of the metropolitan centre are urged,—and good reasons they are too. As the Government is believed to give their good-will towards the very desirable end in view, it is to be hoped that Parliament will not see another session close without putting an end to the metropolitan toll-bar nuisance.

## Miscellaneous.

THE VICTORIA SEWER.—The consideration of this unfortunate work has been again brought before the notice of the Metropolitan Board of Works, and it is recommended that the sewer, from a point near the United Service Institution and the Penstock-chambers, be re-constructed, at a probable expense of 6,000*l.*; and that, from the peculiar nature of the work, three contractors of high character be invited to tender for its execution, on a schedule of prices and specifications framed by the engineer. The motion gave rise to some discussion, and it transpired that the cost of this work up to October, 1857, was 60,315*l.* 2*s.* 2*d.* Mr. Bazalgette stated that this sewer was constructed in a quicksand, and the ground was honey-combed, and was constantly being washed away by the tidal water forcing its way into the sand. It would be necessary to make a solid foundation for the houses to stand upon. The portion of the sewer under discussion did not form part of his main drainage scheme, although the northern part of it did. He thought that any further delay would be exceedingly dangerous. An amendment, "That the Board should abandon the sewer altogether," moved by Mr. Leslie, was rejected.

COLDBATH-FIELDS PRISON.—At the usual meeting of the magistrates of Middlesex, it was moved by Lieut.-col. Eisey, "That the plans for the enlargement of the House of Correction, Coldbath-fields, laid before the Court on last Court-day, whereby it was proposed to provide additional accommodation for 600 prisoners, be approved, and the Clerk of the Peace be directed to transmit the said plans to the Secretary of State for his approval; and that, subject to such an approval being received, the Visiting Justices of the said House of Correction be authorised to carry such plans into execution, at a cost not exceeding 46,500*l.*" The motion was carried.—[It is painful to witness the continued increase of our prisons—in this instance, at a cost of close upon 50,000*l.* and an annual expense for prisoners (allowing 20*l.* per annum each) of 12,000*l.* per annum for the new comers. The cost of keeping people out of gaol, and doing so in it, is not yet properly considered.]

LIABILITY TO PAY FOR SPOILT WORK.—Mr. W. Cox, a stonemason in the City-road, having received an order from a gentleman for a vase with wreath round it to be sculptured in marble, employed Jacob Harris, a Pole, who had previously worked for him, to execute the order on Mr. Cox's premises, marble being supplied to the Pole for that purpose. The agreed price payable to the latter was 5*l.* 10*s.*—the work to be done in ten days. Though Mr. Cox had refused to allow the marble to be taken off his premises, the Pole was allowed by the wife of the former to take it away, and the work proceeded at a mason's yard near Bow, where, as alleged by Mr. Cox, the work was entirely spoiled. He refused to pay, and was summoned after the customer himself had condemned the work. The magistrate's decision was, that Mr. Cox employed the Pole, and must pay him, with costs. Doubtless the decision was based on the ground that before giving work to a man to do, the employer ought to have satisfied himself that the workman was capable of doing it. Had not Mr. Cox conscientiously refrained from insisting on his customer fulfilling his agreement, another question might have been started, namely, whether the customer was still liable to fulfil his agreement with Mr. Cox on the same grounds; for the vase was finished, though not well done, and might have been pressed upon the customer.

HOW THEY ACT TOWARDS PROFESSIONAL MEN IN ROTTERHAM.—The election of surveyor to the Local Board at Rotterdam, took place on Wednesday week, when Mr. Hartley (a mason), of Sheffield, received the appointment. There were fifty-six candidates, and out of them three were selected, one engineer and two masons (one of them being also an innkeeper), all local men; so advertising was a mere farce. I am informed by a member of the Board, that the testimonials of the fifty-three rejected candidates were not even read by them; therefore they had their trouble and expense for their pains. I think, in strict justice, they are entitled to some compensation. I am told the present happy surveyor will not hold office long, as he cannot possibly work with the materials of which the Board is composed. I trust, in fairness to the candidates, you will publish this statement. I forward you my card as a guarantee of good faith.

A LOOKER-ON.

SURREY ARCHEOLOGICAL SOCIETY.—Nearly forty of the members of this society met at the Bridge-house Tavern, Southwark, to reconsider the proposition made by a number of their body to extend the limits of their society, and amalgamate it with the county of Kent. Mr. Crosby opposed the resolution, in which he was seconded by Mr. Corner. After a discussion of about two hours, the meeting proceeded to a division, when there appeared twenty-six for the amendment, against thirteen; so that the resolution was rejected.

SOMERSETSHIRE ARCHEOLOGICAL SOCIETY.—The first *conversazione* meeting of this society for the season 1857-8, took place on Monday before last, at the Museum, Taunton. There was a large attendance. Mr. W. F. Elliot read a paper "On Photo-Flemish Painting," in which, says the *Taunton Courier*, he claimed public attention for a new style of pictures, some of which were exhibited in an adjoining room. A paper was also read by Mr. B. Pinchard, "On Dartmoor." Next followed a lecture by the Rev. W. A. Jones, "On the Geology and Antiquities of the Mendip Hills."

OXFORD ARCHITECTURAL SOCIETY.—The last meeting of this society for the current term was held in the society's rooms, in Holywell-street, on Wednesday before last. Mr. Freeman, M.A. gave an account of a visit to Toulouse and Albi, illustrating his lecture by drawings of churches and buildings of interest. It is proposed to read, in course of next term, a series of papers on the history of Oxford, as illustrated in the architectural features of her buildings.

CAMBRIDGE ARCHITECTURAL SOCIETY.—The third meeting of this society for the October term was held on the 26th ult. at the rooms of the Philosophical Society. Mr. Luard, of Trinity College, read a paper on the Cathedral of Orvieto, in Etruria; in which he described the front as being of marble enriched with mosaics. Several photographs were handed round, one showing the general elevation, and the rest portions of the sculpture in detail. A few remarks were afterwards made by an honorary member, disapproving of certain galleries which are about to be erected in Trinity church.

BELFAST BANK COMPETITION.—A correspondent, under the signature, "First Gem of the Sea," complains, as a competitor, that a perspective drawing of his, of much labour, and all perfect when sent in along with ten other drawings, by rail, was returned to him, after repeated demands for it, by post, doubled up, crushed, and completely spoiled. Compensation, he remarks, could only be got by suing the Ulster Bank directors in Ireland. The premium was given back to Glasgow where the branch bank is to be erected. Our correspondent concludes by observing that the competition system must break down unless conditions be issued from authority. Some trades, as he remarks, have a common fund for the protection of their members.

THE VALUE OF THE BAROMETER: KNOWLEDGE IS POWER.—It is a circumstance that cannot be too generally known, that before the commencement of the late storms on the northern coasts, which caused the loss of a large number of brave fishermen, one village avoided the disaster through the inhabitants being better educated than in other places; they understood the working of the barometer, and believed in it. In consequence of the aspect of this instrument, the men determined not to venture to sea; and it "would have been well," says a northern contemporary, "if they had also taken the precaution to drag their boats out of danger," and then they would have escaped without the destruction of either property or life.

PUBLIC FOUNTAINS IN MANCHESTER.—In the Manchester council last week there was some discussion on three experimental fountains erected by private benevolence in Manchester, respecting which, according to the *Courier*, there has been a good deal of unpleasantness and mismanagement. A letter was read from Mr. Barnes at the council meeting, to the effect that he thought, if he gave the fountains, the council might reasonably be expected to supply the water freely. So thought the majority of the councillors, but Alderman Pilling, the deputy chairman of the water committee, held that his committee must have entire charge of both the fountains and the supply of water, or they could not furnish the latter. The fountains, it appears, have been placed in inconvenient positions, causing interruption to foot passengers, and for want of proper drainage with two at least, the flags have been constantly wet with the waste water. The following not very elegant lines have been placed above Mr. Barnes's fountain, near the Victoria station:—

Here, traveller, you may quench your thirst  
With that which never harms;  
But while you quaff the gracious draught  
Think well of Robert Barnes.

Mr. Barnes deserves a better poetaster.



# The Builder.

VOL. XV.—No. 776.

**I**N the subject of stained glass, as regards its ancient and modern characteristics, able pens have from time to time contributed observations in these columns; and in other quarters such views of the subject have been discussed almost to exhaustion. The battle of styles, too, has been fought with warmth and energy, leaving the issue in a truce, unless, indeed, the reasoning of Mr. Powell, of Birmingham, as lately printed in these pages, turn the scale. We are disposed to believe that, in the zealous inquiries into the archaeology of the subject, and in the earnest championship of its principles, this way or that, the incomparably most vital point has been utterly lost sight of, namely, the causes by which have been brought about the almost entire absence of health in the present condition of the art, and the urgent necessity and means for its reformation.

It has been declared that our artists on glass have as yet exhibited but unfavourably in contrast with the old masters, to whom the world is indebted for the painted glories of Chartres, Canterbury, and Fairford; moreover, they have been said to compare unsuccessfully with the Germans of the present day.

Notwithstanding the scenic trickery of the German artists, and their efforts to neutralise the finest,—i.e. the most natural elements of stained glass in its material and individuality as an art,—the new windows for Glasgow Cathedral are to be commissioned, not of English artists, but of those of the Munich school, by whom were lately erected the academic though rapid transparencies of Peter-house College Chapel, Cambridge.

Despite the honest opposition which has been evinced by those of deeper knowledge of the subject than was exhibited in the dictum of the Glasgow authorities, it cannot be denied that there now exists such wide-spread disease in the English system of stained-glass work, that the conclusions referred to may possibly be explained on the forlorn principle that the most mistaken application of art is preferable to the ignorant burlesques upon it which mark eight out of every ten of the windows erected in the present day. In so far, this charge and practical demonstration against our own artists approach the point upon which the attention should be drawn of those who still evince some solicitude for a true art, sickening, and unable to conceal its plague-spots, yet capable of cure; at the hands too of those by whom it has been so ineffectually spurned.

The great question which should present itself to those who would pass judgment in the case, is involved in the consideration of how far artists, in the true sense of the term, can be said to have had, or been encouraged to have, anything to do with the subject at all; and thus, how fair it may be to arraign for sentence those who can so obviously prove an *alibi*.

The practice of stained-glass work, in its natural condition, is either an *art* (as we conceive it to be, in the strictest sense), or it is a mere matter of manufacture. That it is the former may be asserted from the fact, that there is no aptitude that an artist can possess by nature or education, for colour, poetry, or com-

position, no power of expression, draughtsmanship, or invention, that may not in glass be legitimately wedded to its materials, and the true principles of its requirements in design. If, then, these premises are correct, we have to point out one of the strangest anomalies of the day.

With few exceptions, modern windows, purporting to be of high character, emanate from establishments in the names of men whose art-skill does not reach even to a microscopic proportion, and whose existence in the assumed authorship of even the degree of art produced in their pay, depends wholly upon their scrupulous avoidance of giving to their patrons the most trifling evidence of their own handiwork.

Thus it is, and has long been. By a general absence of due discrimination and selection on the part of those who dispense the patronage of the subject, men of purely trade instincts and commercial adventure have started up, craving the "favour of orders," succeeding abundantly in their speculation, and finding upon the fair field in which such art as Durer's was once fostered, a fruitful arena for per-centage calculations and business enterprise. And this has existed, nay, flourished, in the name of art!

"Can merchant-authors—they who range  
Between Parasitus and the 'Change,  
Sole denizens of neither—  
Who seek to play a double game,  
To grab for gold and fly at fame!  
In truth, be blessed with either?"

In trade matters, the position of the vendor of stained-glass work, as a producer, may, of course, be paralleled *ad infinitum*; but, let it be remembered, the most powerful element of commerce may be the deadliest poison to art. Were the great works bequeathed to us by former ages created under this "cold shade" of Mammon? Will an artist, whose works are worth having, and who (like his art-brother that controls the stone vault, or imparts breath to the marble block) finds in reputation the best part of his reward, give warmly the full flow of his invention and aspiration, at so much per diem?

Can such a one sink his name and lovingly pursue his art under the paymaster whose interest in him is represented by pounds, shillings, and pence? Can, indeed, anonymous art long remain art at all?

The only one who can, in fairness to a patron, consistently hold himself responsible for any art (but especially for that all-important phase of it which embraces the illustration of the sacred books), is the artist himself.

We do not criticise a poem in favour or disfavour of the publisher, nor are poetic conceptions in architecture or sculpture attributed to the authorship of the mason or of the quarry masters of Carrara. In whose name, then, may most of our modern windows, good or bad, be fairly reviewed?

As matters of detail, there are other pernicious influences acting with deadening effect upon glass-painting, to which allusion may be made, namely, those which have resulted from the importation of German prints after Overbeck, Schorn, Füch, and others of the school. These engravings and lithographs, together with those after Rubens and even West, have formed the stock-in-trade of many of those practitioners who enjoy, under the present state of things, a positive reputation as "artists on glass." Sometimes, by a not unusual effrontery, a whole composition derived from such sources, and cruelly mangled in the ignorant rendering, may be seen as intact, as the circumstances of the case would permit; at others, an attempt to cloak the clumsy theft by a torturing of figures by, say Füch, into part compositions of Overbeck, &c. &c., may be easily detected; and then, worse than all, will come a few "make up" figures and accessories by the artist (?) himself. Thus has mo-

dern glass, in one of its most abject forms, been bolstered up and encouraged.

This is no exaggerated statement of the condition of stained-glass work in this nineteenth century of ours; but the evil, deep though it be, is not past cure. Let those to whom art is something, and who at once regret and deride its position in relation to glass, who by their purse and influence would encourage it to better things, not despair of its easy emancipation. Let them probe the matter deeper than they have yet done, and seek the artist on glass as they would his brethren of painting, architecture, or sculpture. Let them, in simple justice to those who devote to the art their best years and warmest studies, thus open the doors of truth to true authorship. Let all evidence of the miserable print plagiarism and trade system be sought out, as a wholesome preliminary in determining the choice of him who shall commit to future centuries a thing of beauty or a chromatic eyesore.

Pursuing such means glass-painting will not long remain what it now is—a reproach to English art. Those few true men who are steadfastly devoted to it, will, under fairer encouragement, be joined in art-brotherhood by others who are now scared from the pursuit; and the present trade of glass-painting will give due place to the banished art, which has so long yearned for the day upon which the veil shall fall from the eyes of those who, with good intent, have sought it in darkness and in error.

## POLYCHROMATIC DECORATION.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday evening, 14th December, the ordinary general meeting was held at the Rooms, in Grosvenor-street, Mr. J. B. Bunning, V.P. in the chair. Mr. R. Kerr and Mr. Norton, attending for the first time, were admitted as fellows, and Mr. C. Arding, as associate.

Mr. Digby Wyatt, hon. sec. announced a long list of donations, including from the Minister of State, Paris, "Archives de la Commission des Monuments Historiques, Livraisons 19 et 24," Paris, 1856; "Observations on Metallic Art," by Mr. Wyatt, extracted from the Art Treasures of the United Kingdom, edited by Mr. J. B. Waring. 4to. London, 1857; from the author, "L'Art moderne, par Theophile Gautier," from the author, "Ninereh and its Palaces," by Joseph Bonomi.

Professor Donaldson said, amongst not the least important presentations of the evening, was the donation by their president, of two noble medals. The first was a medal struck by the corporation of the City of London, on the occasion of the visit of the Emperor of the French. It was a medal of large size, and did honour to the City. The other medal was struck to commemorate the visit of the King of Sardinia, in 1855. They gave the portraits of the imperial personages, had beautiful reverses, and were executed by Mr. Benjamin Wyon. It was a gratifying thing to the Institute, to find that their chairman, on that occasion, had urged the City of London to take the steps they had taken so recently, in promotion of the fine arts. It was he who had induced the corporation to cause a number of statues to be executed, to fill the niches of the Egyptian-hall, at the Mansion-house, where 6,000, had been laid out, besides the sum that had been expended for the Wellington monument, in Guildhall. He had promoted the striking of these medals, and as the representative of art in the city of London, they were indebted to him for having excited its citizens in the laudable promotion of the fine arts of this country.

The Chairman explained that, at his suggestion, it was determined to strike these medals for the encouragement of art, in the promotion of which it was gratifying to find that the corporation of the city of London had never been backward. He trusted that as long as it existed it would continue to do so, and as long as he remained their servant he would never lose an opportunity of assisting.

Professor Donaldson.—Their chairman had said as long as he was "a servant" of the corporation. Now, if there were a man who was less a servant, but rather a more worthy officer of the corporation, it was Mr. Bunning. His independence of character peculiarly qualified him for the office, and rendered him superior to all manner considerations in the exercise of a sterling, honest, English independence of spirit. It was very rare that medals were struck, and rarer still to



find the opportunity of doing so seized by Government, and when it happened to be otherwise, the execution of them was confined to one family,—that of Wyon, undoubtedly a man of great talent and worth: but was it not a shame that, in the production of these works of art, only one family could be found capable of executing them? The Art-union of London had been anxious every year to strike a medal in commemoration of the history of the fine arts; one year striking the portrait of a painter, another of a sculptor, and another of an architect. But the great difficulty was to find artists to produce these medals. It was, he thought, disgraceful to our Government that they so rarely seized the opportunity of striking medals of the size of those before them, and he could not help suggesting that the approaching auspicious union of the Princess Royal would be a fit and fine subject for such a commemoration.

Mr. Wyatt announced that the Britton memorial had been completed, and was erected in its place in Salisbury cathedral.

Mr. T. H. Lewis, fellow, then read "A Brief Account of an Experiment made upon Concrete, expressly for the Committee of the Architectural Publication Society, and of some others," which we give in full on another page. After a short discussion, and a vote of thanks for the communication,

Mr. George Aitchison, jun. read a paper, polychromatically illustrated, "On Colour as applied to Architecture," to which we shall return. At the close of it,

Mr. Burges was afraid he could add very little to what Mr. Aitchison had told them. His (Mr. B's) studies had been confined to Mediæval and Pompeian buildings. When at Pompeii, he thought the style of buildings exceedingly agreeable, and rather forcible. The natives of hot climates were fond of rich colours, because their windows were so constructed that the light penetrated very little. Mr. Aitchison classed the Mediæval system under the white, the blue, and the gold ground; but they would likewise bear being classed under the finished and the unfinished. When a cathedral was built they put stained glass in the windows, and obtained colours by that means. There was so little wall space that there was no room for pictures. The consequence of this was, they left it white, each of the piers being exceedingly small, and then they continued the colours of the windows by picking out the hollows of the principal mouldings with red, the only parts strongly decorated being the bosses and the mouldings of the ribs, for about 1 foot from them. This system was found at Chartres, Beauvais, and Ely. Occasionally, but not very often, the capitals were coloured and gilt, as at Cologne, where, however, they adopted strong colouring, as at the Ste. Chapelle, and coloured the space between the windows: the effect was exceedingly bad. As regarded coloured decorations, however, he thought the Ste. Chapelle was something horrible, and that it would not bear comparison with the Lower Chapel at Assisi. The western and eastern systems could not go together. If you wanted colouring in a building, you must give up moulding, or *vice versa*: and for his own part, he would always give up the mouldings. In the case of the chapter-houses at Salisbury and Ely they went further than in the cathedrals. At Salisbury they gave very little colour in the glass. It was nearly all grisaille. They then coloured the hollows of the mouldings, richly decorated the bosses and the space immediately surrounding them on the vaulting, the rest of the vaulting was covered with red lines in imitation of stone-joints, a very common system of decoration in the lower coloured buildings of the Middle Ages. On one occasion he was in the little church of Molliet, near Rouen, and found that it was almost in the same state it was in during the Middle Ages, and nearly every square inch of it was covered with some decorative pattern. In the case of Salisbury Chapter-House, the colour was gradually brought down from the bosses by means of a little white, red, or yellow on the ribs, until it reached the windows. These had the circles in the tracery, and a band of shields running along, horizontally, through all the lights in full lined rich-coloured glass. The borders continue this colour to the bottom of the windows, where the arcade that runs round the whole of the building was most richly and fully decorated. It was the same in the Lady Chapel at Ely. They brought the colour carefully down; the windows were all of stained glass, with a far greater proportion of white and yellow in them than at the Sainte Chapelle: the effect of which latter he could not help thinking was unmitigatedly bad. In Italy, if they wanted colour in a church, they used Mr. Aitchison's blue ground, and separated the picture by borders with a thin white line on either side of them, for it was these white lines, and not the borders, that made the real line of separation. On the other hand, they took care not to deaden the effect by mixing white with it. It was pure good blue, and upon it they painted, in tender colours, such as light pink and light red, and white, shaded with

different tones of blue and red; and sometimes they even used a scarlet figure to vary the effect. At other times they used a beautiful light purple, which was so great a favourite with the artists of the Middle Ages; and all these colours were to be seen in perfection in Van Eyck's picture of the Adoration of the Lamb. Then when they used gold grounds, as at Palermo, they still used light colours, but separated by means of darker ones, only in much smaller proportions. After all, the effect of a building would depend a great deal upon light. The Upper Chapel at Assisi looked nearly as bad as the Ste. Chapelle, because there was too much light in it; on the contrary, one of the reasons for the Lower Chapel looking so beautiful was, that the light only penetrated into it through the windows of the side chapels. As to the future of architecture, in regard to decoration of buildings, we must have figures and employ the painter, for all decorations without figures always appeared to him to be exceedingly tame. We must get the painter to treat the building as an architect would, and put an architect over him to look after him; but it would be better still, although we might have to wait for two or three generations, if architects turned painters themselves. Let them erect the building, and then decorate and paint it, and so leave a thoroughly perfect good work behind them.

Mr. Penrose questioned whether, in the present state of polychromatic knowledge, it was possible to lay down many dogmatic laws. A few, perhaps, might be pointed out, such as the necessity of placing delicate white or thin black lines between certain colours, the immediate opposition of some colours producing discord, if it can be pointed out and asserted; but it was dangerous, he thought, in their present state of polychromatic knowledge to assert anything very strongly on the subject. Many more experiments, and much more research, were necessary, and he believed that many persons were deterred from approaching the subject by reason of its very great difficulty. The study of flowers, of the colours of skies and landscapes, of butterflies and birds, would do more for them than the study of scientific books. He believed that the great success of the untutored nations in colour rather surprised us, and was referable to the fact that they looked to Nature in the first instance as their guide; but commentaries on the higher applied laws of specimens in colour drawn from the great buildings of antiquity, were of the utmost importance. From thinking on the subject generally, he had been led to the conclusion, that on the particular purpose of the building depended very much the key in which it should be coloured. In some cases a white ground, or nearly white, was to be selected as the best; in others, where a moderate light was admitted, the very strong colours, the deep blues and deep reds were used, and he believed that in all cases the deeper colours were better for adoption, always excepting mosaic, which, from the brilliancy of its gold ground, and the peculiarity of its reflection, enabled it to bear much greater varieties of light; but, at the same time, it would not bear a very strong light. Hence, the apex of the Triclinium of Leo certainly had an unsatisfactory effect.

Mr. Lockyer could imagine nothing finer than the large mosaics at Orvieto and Sienna. At sunset they displayed a perfect floating sea of gold and colour, which told out in the most beautiful manner.

Mr. Baker would not discuss the question as to whether the white line or the black line affected the appearance of colouring, but it was of considerable importance to insure that the various colours should be in light and shade, as it were, duly proportioned, as in a picture; and, as in the specimens before them, effect depended on brilliancy of contrast. Were any one to paint on a piece of paper a series of colours of very nearly even depth, it would surprise them to see how difficult it was to distinguish one colour from another of nearly the same depth of colour. One would be bright, and another dark, and the contrast was most beautiful. The specimens of coloured mosaic showed a beautiful effect when the dark blue background was brought out into good outline. He was sorry to hear Mr. Aitchison's general condemnation of the Pompeian painting; for although the contrast to the general outline was occasionally disagreeable, the tones of colour were very beautiful, and gave us delightful hints for its adoption in our own climate.

Mr. Fowler alluded to the case of a chapel which, some fifty years ago, on being deprived of its coatings of whitewash, disclosed rich specimens of polychromatic decoration of the time of Henry VII. At the period in question it was thought nothing of, but then there were no architectural or archaeological societies, ever ready to appreciate such discoveries. He had always felt that the polychromatic branch of their art demanded more study than it had hitherto received, and he was glad to see it taken up by the rising generation, and followed out with so much research, as well as being so ably illustrated that

evening. Whatever might be said about the Sainte Chapelle, he thought they must give the French credit for having, at immense labour and expense, worked out a very striking experiment. For his own part, he thought the experiment unsuccessful, but still it was valuable as a fact to refer to. Some people might think it was over-done or under-done, but there it was as a matter for speculation. If he might express his own opinion, he should say it was exceedingly over-done; and it was unfortunate in the effect where decoration was spread over the integral parts of a structure which ought not to be interfered with. Decoration came in, and told well subsidiarily, but the structural parts of a building should stand out in their integrity. It was a mistake to imagine that the columns should be diapered and scrolled over, or covered with what he would term impertinent decorations. In the case of the Monreale at Palermo, with which they had become familiar by means of the productions of their late worthy member, Herr Zanth, it appeared to him to make one of the most charming instances of polychromatic decoration, and, as he conceived, one of the most successful and genuine. But he could not form a decided opinion, not having seen the original, but he mentioned it as one of the successful instances of art-colouring when it was better understood and more extensively used than it had been since.

Mr. Lockyer protested against the condemnation that had been indulged in both as regarded the Pompeian and Giotto Romano decorations. Any one who had seen the Villa Papp, the Villa Malama, and the works at Mantua of Giulio Romano, must feel that he was a thorough master of his subject, knew what he was about, and used no colour or form injudiciously. He (Mr. L.) might be impure, perhaps, in his taste, but in upholding his works, it was from a conviction that there were few works in Italy that struck him so much as the performances of that artist, both as to design and arrangement of colour. Mr. Aitchison seemed to find fault with the deep masses of red, but in that climate you rather required masses of colour. They were very well lighted by the subjects painted upon them, but certainly the brilliant sunlight and atmosphere of Italy seemed to require those masses of colour which are dispensed with in England. With regard to mosaic decoration, Mr. Aitchison mentioned the better effect of gold when produced on a green ground. Now it struck him that in the case of most of the mosaics of Italy the gold was on a reddish ground, and very few on green. In the San Lorenzo it was on green, but there the effect was poor.

Mr. Wyatt.—The earliest mosaics in the Santa Sophia are on deep white; in later ones they became red.

Mr. Kerr was quite of opinion that polychromatism was one of the principles of their art that ought not to be passed unnoticed. He understood Mr. Aitchison to say that the art of colour was a matter of instinct and not of rule; that it was not a matter of science but of intuitive and instinctive knowledge, under the correction of an experienced eye. Now, nothing, in his opinion, could be a greater mistake in the abstract. If he were called upon to define colour in relation to architecture, he should say it was the music of their art. Nothing could be more correctly weighed, estimated, or definitively reduced into system. Not that he would say that it had been so weighed and estimated, and its elements accurately reduced into system; but the work of Chevreul on the subject was exceedingly mathematical in all its processes for the determination of principles on which every one might very safely rely. The interior decoration of a building in modern times with colour must be a peculiarly interesting subject of inquiry to the architect. When he spoke of colour as being the music of their art, he was not speaking altogether figuratively, for he fancied that the interior of a building might be decorated in any one of many ways, just in the same manner as a piece of music might be set to any one or many expressions or sentiments. When we wished to decorate the interior of a structure in a bold and striking manner, or if, on the other hand, we wished to carry out the work in a smooth and graceful manner, we adopted the desired material and design in order to produce the wished-for effect on the mind of the beholder. In the classical times of antiquity he was inclined to think—notwithstanding all that had been said, and perhaps proved, with regard to chromatic decorative building—that it was not carried on to a very great extent. He, for one, as an admirer of Greek architecture, should be sorry to admit that they did colour the exterior of their buildings. The operation of the mind at that time and in that age was more stern and severe; but when you came to the Middle Ages, you found the mind losing its severity—losing that sternness, and more involved in complication of lighter details; and then in after-time, and by gradual progression, the use of colour became more applicable to the mind and the purposes of art, and in the Mediæval and Renaissance works,



which were governed by principles almost entirely by Medieval examples, we found that colour began to be adopted and used, not only with profusion, but with something more than gusto—with success, with intuitive success. Now, the colouring that was to be found in Medieval buildings, successful as it was, was not successful by accident, or by the application of rules, but the existence of rules may be easily discovered. Chevreul discovered a great many, and laid down remarks on position. If Mr. Aitchison would only collect the specimens that were hanging about, and assort them in various classes, he would find that certain principles governed one class, and certain principles another, which must inevitably be, and without which colour decoration could not be successfully employed. It was different with form, the other great principle and department of their art. They could not make form, but they could, as we weigh, the music and poetry of colour, and so lay down fixed principles of action. Indeed, there was no subject in the present day more deserving the attention of scientific men in relation to architecture than colour.

Professor Donaldson was of opinion that the great principle that should guide an architect in the decoration of his building, should be its character and its object. When he had gone into a building decorated to any extent, he really oftentimes could not appreciate what the intention of the architect had been. It appeared to him that primarily in a building, architecture should take the leading position,—that is, the place of prominence and honour, and that all decorations should be subordinate to its members, in order to fill up the plain spaces, and give effect, by decorative contrast, to the severer features of architecture. Mr. Burgess had very well said that he perceived very frequently in the Medieval buildings, that the colour was in the hollows, which threw out in greater relief the small shafts of the piers. There he (the professor) thought that colour was very admirably introduced. But when they found colour usurping the proper place of architecture, and architecture, instead of itself being represented in natural materials, relieved, as it were, here and there by accidental portions of colours; when he saw the white surfaces of buildings themselves coloured by artificial pigments,—colour usurping a place it ought not to possess, and architecture put in a secondary position,—he could not help thinking that it was degrading to art. If architecture was to be decorated, it should be by varieties of material, that is, by different tones of coloured marbles and stone, of which the shafts and friezes should be constructed, and not to admit of artificial decoration. When they went into the Temple of Jupiter, at Pompeii, and noticed the podium, with its horizontal cornice, and then the courses of stone above, which were all of different colours, it seemed absurd that colour should be made to represent material, and you did not see anything to justify it. But here the colour introduced was *bona fide*, and part of the material. It represented architecture, whereas in other cases it did not, and only represented subordinate ornamental decoration; and so it should be whether it be simple diaper, or other colours, or other ornamental forms, like those given in the illustrations. When they talked of the Sainte Chapelle, what could be the purpose of the architect in the decoration of the building (he had not recently seen it himself), in covering with an artificial coating the whole of the beautiful architecture? About forty years ago, he saw a representation of the decorations of St. Stephen's Chapel, Westminster. It was altogether covered with colour, which had a very gorgeous and magnificent appearance, but to his (Professor Donaldson's) mind, the proper, legitimate, and sober effect of the architecture was lost, and it seemed to be more an adaptation of mere tapestry hanging than a proper matter of architectural effect. These, he thought, were the principles on which buildings should be decorated, *i.e.* what should be the proper purpose and appropriate interest of the architect. He differed with Mr. Aitchison in his condemnation of Pompeii, but it should be remembered that where these decorations were placed, rather in the shade than exposed to the sun, nothing was more proper than the introduction of brilliant tints. Mr. Aitchison stated that he noticed there were little columns and diminutive entablatures, and capricious decorations introduced, for which he could see no use; but it should be remembered that these objects doubtless represented a class of architecture of which no remains have survived at the present time, and that the domestic details of their buildings were of a small and delicate kind; and if we recollected what we can do in iron and wood, though at that time they appeared to be in bronze, the representations would appear to be harmonious. He (Professor Donaldson) was not pleased with what he saw in the baths of Titus at Rome, but he was delighted when he studied the villas in the neighbourhood; some of the paintings were on a white

ground, and told out with very beautiful effect; while others were on a dark ground, and brought out the colours even more brilliantly than those on a peacock's tail. Among Mr. Aitchison's drawings, the black spots were in very small masses, else they overpowered; and they were used sub-ordinately, so as not to produce a heavy effect. With respect to the white lines, the Egyptians understood the value of them. We should find this in the Egyptian paintings in the British Museum. We should there see that a white line separated the greens, the blues, the reds, and yellows, and gave to each tone its true and proper quality. When he thought of the Palazzo T. he could not go the whole way with Giulio Romano. The decoration appeared to him in many parts to be puerile, and the result of caprice rather than of genius. There was so much extravagance of contrast and proportion, that he left the Palazzo with disappointment. He thought that Baldassari Peruzzi da Sienna had designed great works in this style, as well as Giulio Romano, who had a heavy hand, and was frequently capricious; and most beautiful works were also designed at the Villa Caprarola by Vignola, who perfectly understood these decorations. Professor Donaldson concluded by moving a cordial vote of thanks to Mr. Aitchison for his paper.

Mr. Aitchison briefly replied, with much spirit and effect, to the observations that had been made; and the meeting adjourned for the holidays.

#### EXPERIMENTS ON CONCRETE.

The experiments here described were chiefly made with a view of verifying some facts mentioned in the description of "Concrete," in the Dictionary of the Architectural Publication Society. But I have incorporated with these the results of some other experiments previously made by me. The general idea with respect to this material is,—1st, that there is a sensible loss in bulk of the ballast, independently of that of the lime; and, 2nd, that the materials, on being mixed together, expand considerably. So much is this idea prevalent, that a respecting that he did not believe to be true,—required, in calculating the price of the concrete, that I should allow him one-seventh more ballast than the concrete cubed to, he depending on the published statements of the loss of ballast being thus great. It was this demand that first led me to experiment. The following trials were all made in the same manner, and, with one exception, I was present at the whole process from beginning to end. Several of the committees of the Architectural Publication Society also attended at the trials. A wooden box was made, holding exactly one cubic yard. This was filled with a fair sample of the ordinary Thames ballast, and such as is used for concrete in London. To this was added ground Medway grey stone lime, in the proportion of one of lime to six of ballast. The whole was there turned out and mixed together in the ordinary way, the cube yard taking about forty gallons of water. The whole bulk would thus stand as follows:—

Ballast.....	27 feet cubic
Lime..... $4\frac{1}{2}$	10½ do.
Water c. 6 )	
Total.....	37½ do.

The concrete, thus mixed, was thrown into the box from the level of the ground, so that the lower part would have a fall of about 4 feet, and the upper part of 1 foot. The experiment was also made of throwing it in from a platform, 10 feet above the ground. In each case the result was the same, *viz.* the whole mass, made into concrete, occupied precisely the same space as the dry ballast, *viz.* one cubic yard, all the bulk of the lime and water, being about two-fifths of that of the ballast, being lost, but none of the ballast itself. The surface was carefully levelled, and thin boards tacked over, so as to ascertain if there were any expansion in the setting, but none could be perceived.

The weight of the mass was 27 cwt. I then had some more ballast mixed with a similar proportion of *unground* lime, broken into small pieces, and wetted for a quarter of an hour. It was in that time pretty well slaked, but there must have been a good deal in the centre of the lumps not so. We know, from our every-day experience of the blistering of plastering in internal work, that a very long time is required to slack lime thoroughly, and I thought that, as this operation was going on to some extent after the concrete had been mixed and put into the box, a sensible expansion would take place.

This, however, certainly did not, for not the slightest increase of bulk was perceptible. I had the first tripped portion (mixed with ground lime) broken up about a week after it was made. The parts immediately below the surface, and all underneath them, had not set, but the whole formed a compact mass without any vacuities whatever, the upper parts seeming to be as solid as

the lower, although the difference in the fall was 3 feet.

A portion of it I put into water. I examined it in a fortnight, but it had not then set. I am sorry to say that I omitted to look at it again for a considerable time, so that I cannot speak as to the exact time of its setting; but when I took it out of the water, seven months after, it was quite hard. I mention this, in order to show that the concrete was at least a good average sample.

In order to try the matter more in detail, I had a box filled with very clean sand, such as is used by masons. The box was then well shaken, and the sand settled down so as to lose about one-fifth of its bulk. The box was then filled up, so that, in fact, it was made to hold about one-fifth more than its ordinary quantity of sand.

This was turned out, and well mixed with water. After this it filled the box, but on being shaken subsided down to the same level as before, thus losing, in addition to the bulk of water, one-fifth of its own bulk as before.

This wet sand was then mixed with one-third of its bulk of ground lime, and made into mortar, which just filled the box. The surface was levelled, and carefully tested during the setting, but neither expansion nor contraction could be perceived.

Another experiment was then tried, at the suggestion of Mr. Wyatt Papworth. A box was filled with coarse ballast, and one-seventh of *unground* lime added to it, the lime being broken up into smaller pieces, but not very carefully, and then mixed with the ballast. Water was poured on, and the mass thrown into the box when only partially slacked, the object being to see the effect of this process, which might be considered a tolerably fair example of what the men might do if they had a certain portion of work to do with *unground* lime, without proper inspection, and careful only to get the whole done as soon as possible. The result was a slight but a decided expansion.

I then had another box filled with ballast, which was mixed up dry, with rather more than one-sixth of its bulk of ground lime. On being put into the box again, the two together occupied a rather larger space than the ballast did separately. The mass was then levelled, and about as much water poured over as would be used ordinarily. The result was, as before, a decided expansion.

One other experiment I should be glad to mention, as it is a curious one, and bears upon a part of the subject very little, I think, understood, *viz.* the setting or hardening of the concrete or mortar.

A friend of mine, who is a first-rate chemist, suggested to me some time since that the addition of a carbonate to the mass would cause it to set more quickly, and for this obvious reason; that as the lime is supposed to be hardened by the absorption of carbonic acid, any substance in combination with that acid would offer to the lime its hardening medium in greater quantities than could be procured from the air in the same time. He further stated, though he could not procure me the details, that the experiment had been tried, on a somewhat large scale, with carbonate of soda mixed with concrete used under water, and with complete success.

I, therefore, had some more concrete made, and mixed with carbonate of soda as directed. It was put into water, and, in sixteen days, was finally set. Similar concrete, but without the soda, was not set at that time. I tried some mortar made in the ordinary way, and some also mixed with carbonate of soda, but in a larger proportion than with the concrete. This experiment was, however, not encouraging, as the mortar on setting crumbled to pieces. I think this artificial hardening might, as the process is a cheap one, be experimented on further with advantage.

T. HAYTER LEWIS.

#### THE POINTED PENDENTIVE DOME AS A RIBBED VAULT.

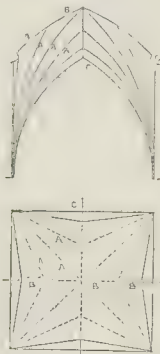
In making the remarks to be found at page 465 of this volume, on the pointed pendentive dome, I merely considered it as a simple shell; but with this vault, as with others, the greatest economy of material and the greatest structural efficiency are to be attained by the application of a system of framework or ribbing.

In applying ribs to this vault, we shall find them to be of several different kinds:—first, main ribs, being the arches in which the chief strength of the vault is placed. These spring from the angle of the plan, and spread over the surface of the vault. Secondly, ridge ribs, which spring from the apices of the enclosing, otherwise termed forming or wall-arches, and meet in the central boss of the vault. Thirdly, we should name the horizontal ribs which serve to stiffen the main ribs, struts: these, of course, not being absolutely necessary, or not so in all cases. For the main ribs to be in equilibrium it is neces-



sary their central planes should be vertical; thus, of all the ribs springing from one angle, only one can have its central plane normal to the vault surface. The central planes of the ridge ribs will, of course, be vertical. The number of main ribs one of these vaults might need, depends, as well as their dimensions, on circumstances. It is quite certain that few things can be more simple than one of these domes, in a case in which only a single main rib springs from each angle. But when several main ribs spring from each angle, the matter becomes more complex. As all these ribs will be close together at the springing, I conceive that a very ill effect would be produced if the intrados did not coincide with a spherical surface, concentric with the surface of the vault. A little consideration will show that the main ribs would in this case be somewhat greater in depth than the central or diagonal main ribs of the vault (those which alone are normal to the vault surface). The main rib nearest to the central rib would be a little deeper, the one beyond that somewhat deeper than that, and so on: this difference of dimensions, however, is a mere nothing. But the result would be not only the greater grace from the preservation of the geometrical figure, but that the joints or meetings of the ridge rib and the main ribs would mitre fairly, as well as the joints of the latter with the struts. I should think the mitred joint more suitable to this vault than the boss-concealed junction: either mode is applicable, however. By these arrangements the arched ribs transmit the thrust of the vault only to the angles of the plan. But it may be seen that the ridge ribs descending upon the apices of the inclosing arches, exert outward pressures on these points. The way of resisting this thrust which has suggested itself to me as the most simple, is that of extending the wall arch into the vault, and giving it sufficient solidity to have an inclination to fall inwards, the ridge rib pressing outwards, and thus at the same time that its own outward tendency is restrained, restraining the inward tendency of the overhanging wall arch. In this manner these forces tend to the strengthening of the whole construction. This member, which might be named the hanging wall arch, is not needed where another ridge rib counteracts the thrust of the first, as in the length of a vaulted avenue.

It may be remarked, that it is by no means difficult to make many modifications in this vault. Various circumstances would suggest these, such as the cases of the dome having to support a superincumbent vault or lantern, or in its being finished with an open eye (which, perhaps, constructional reasons would dictate to be of a starlike form), &c. I give a modification of this vault, which might not be unsuitable at times.



AA. Main ribs. BB. Ridge ribs.  
CC. Hanging wall arches.

The plans to which it is applicable are oblongs, hexagons, octagons, decagons, &c. which are not perfectly regular figures, but which have every alternate side longer than the others; so that there would be two dimensions of sides, an equal number of each dimension. The longer sides being spanned by semicircles, pointed arches would span the shorter ones. These vaults would consist of half the number of sections of which there are sides on plan, i.e. two to an oblong, three to a hexagon, &c. of a sphere, the radius of which is the same with that of a circle which would circumscribe the regular oblong, hexagon, &c. (as the case might be) having its sides equal to the longer sides of the plan. In the case of an oblong, the radius is a  $\sqrt{2}$ ,  $\pi$  equaling the longer sides on plan. Any plan that can be covered by this vault may be likewise covered by the ordinary pointed pendentive.

As compared with other vaults, the pointed pen-

dentive dome possesses, like the fan groin, the great practical merit of all its ribs being portions of circular curves, and in common with fan and other groins, that the whole thrust is concentrated at the angles. Over the fan groin it has the advantage of having all its enclosing arches, as well as its diagonals, of the same figure, whether equilateral, higher, or lower. It has the advantage of affording greater spaciousness of effect than any groining can have. It has the great advantage, above other pendentives, of its loftiness. Over the various groinings it has the advantage of possessing a smaller extent of surface than any of these, if pointed in section, as well as the advantage of the spandrels requiring much less loading, because containing much less cubic space. The less extent of vault surface of course requires fewer ribs than that of groins: one result of these circumstances is the smaller weight of this vault, compared with others.

I almost think that a sufficiently strong case has been made to induce some architect, of geometric attainments, to take this wandering vault into his protection,—this offspring, shall I say, of the systems of groining and of doming, partaking in so large a degree of the nature, as well as assuming the decoration of both,—the paternal rib, ramifying in strength over the surface, and the maternal grace of panning and interlacing works, spreading in elegance over the space between the ribs, besides its own more particular adornment, which might be richly carved with foliage, or with geometrical patterns—the hanging wall arch. I wish, then, so some one would, and work this almost or altogether untried form into something which, while altogether our own, might be worthy of British architecture in the nineteenth century. S. C. R.

#### EDUCATION AND PROFESSIONAL LIVES OF THE EARLY ITALIAN ARCHITECTS, PAINTERS, AND SCULPTORS:

AS CONTRASTED WITH THE EDUCATION AND PRACTICE  
OF MODERN TIMES.\*

TEACHING and illustrating by biography has always been a favorite means of inculcating and enforcing good precepts, and we have the highest authority for its use in far more important subjects than that which I am about to bring before your notice; and it seems to me that, in treating of particular professions and occupations, the consideration of the circumstances, educational helps, obstacles, and early influences in childhood, friendships, antagonisms, affections, and patronage of manhood, and the honours, the reputation, the hard-earned independence, or the unfortunate dependence, the results of the training of the child, and the habits, whether good or bad, of youth, to be traced in age, and the final tribute to a life well spent by their survivors, with the consideration of modes of practice of their particular branch of their profession, brought about by their particular education and influences, is especially valuable to the living and working students of those particular professions who have present with them many of the great achievements wrought amid encouragement and discouragement, sickness, pain, and anxiety, in spite of obstacles, misapprehension, and even ridicule, by their predecessors. Therefore, at the present time, when, though the profession abounds in able men, greatly skilled and highly educated, especially in certain attainments, yet considering the many advantages possessed by us, the number of works of every preceding age open to us, and brought home to us by the great modern inventions of printing, and every form of illustrative engraving and photography, the perfection of manufacture in almost all branches, and the great facility of conveyance for materials, and also for the concentration of all required talent to any point of our land required, the art produced is not of that standard of originality and beauty attained by the men of old, and certainly not of that proportionate standard might be expected from our marvellous advantages.—I trust it will not be deemed lost time to endeavour to consider what important differences exist between the education, professional lives, and practice of those who, in days past, produced works which we in the present time look upon as worthy of admiration and imitation and make long pilgrimages to foreign lands to see, and those of modern times; and whether the same order of men practised architecture in those days as at present.

With this view I shall give some brief sketches of those particular points, in the lives of the early Italian artists, as related by Vasari, that I consider elucidate the subject in question. I choose the early Italian, because, thanks to Vasari, we are better acquainted with the lives of those who have produced celebrated works, and because their mode of practice is that which I particularly wish to bring under your con-

sideration, my main point being to show that in those days men were selected to give designs for buildings, in consequence of their artistic acquirements, they often being men that up to that period had not turned their attention particularly to architecture, but were considered competent from the imagination and powers of drawing, shown in the sister arts of either sculpture or painting (and often both) up to that period; and it will be my object to point out, though the existing examples of the various periods render it scarcely necessary, that as long as this state of things lasted, the buildings produced were remarkable for originality of thought and beauty of design; but when men came to give their attention to architecture alone, their imagination was less exercised, and a less amount of knowledge of drawing was considered necessary, whereas the other arts cannot be practised at all without them; and the architects being no longer artists in the same degree as formerly, the practical, or rather scientific part of their two-fold character, began to have the pre-eminence, and the consequence was, that gradually precedent took the place of originality, and measured proportions, and forms copied from ancient works, and composed principally of straight lines, took the place of the free lines of the pencil and the artistic reproduction of natural forms. In going through Vasari, whose work I have found sufficient for my purpose, one of the first passages that arrested my attention was in the life of Cimabue, a painter alone, and which is as follows:—

“By these and other works, Cimabue had acquired a great name, as well as large profits, and was appointed, together with Arnulpho Lupi, an artist then greatly renowned in architecture, to superintend the building of Santa Maria del Fiore, in Florence,” those that had the direction of the work evidently thinking that his taste and experience in art, though in a different branch, would be of great service to the work. The first architect we find noticed is Buono, who was sculptor as well, a list of his works being as follows:—

The Castel del Uovo and Castel Cupano, Campanile of St. Mark, Venice; St. Andrea, of Pistoria, the marble architrave over the door of which containing many figures in the Gothic manner, name and date 1166, was sculptured by his own hand; the enlargement of Santa Maria, at Florence; and the Palace of Arrezzo, showing that those who were skilled in sculpture were nevertheless entrusted with important architectural works. But to see more fully the way in which they managed these matters in those times, and the gradual change that took place in the mode of practice, and consequently in the works produced, let us inquire with this view into the lives, education, and practice of a few men whose names are well known in the history of architecture, and many of whose works are at the present time the object of admiration and study.

Let us first take Arnulpho, born 1282, died 1310, architect of Sta. Maria del Fiore, and of the Or San Michele. We do not know much of his education. Vasari says that he acquired the art of architecture from his father, Jacopo IV. (note this), studied design under Cimabue, for the purpose of employing it in sculpture; he was also a pupil of Niccolò Pisano, altogether an education not often considered necessary in the present time, being as though a student of architecture were now to learn composition and constructive architecture with an architect, as at present; and, in addition to that, the art of design from Eastlake, and that of sculpture from Gibson. And what was the result? Two of his works are Santa Maria del Fiore, and the beautiful building, originally designed by him as the corn-market, and thus called the Loggia of Or San Michele. This education did not, however, spoil his practical usefulness, as it was by his advice that the Florentines issued a decree that no building should ever after be erected on the river banks, when they had sunk; and much ruin would have been saved, says Vasari, had the decree always been adhered to. In 1285 he founded the Loggia and Piazza of the Priori, rebuilt the principal chapel of the Badia of Florence, the campanile of the same church, and the church of Sta. Croce, after which came his great work of the Duomo, or Santa Maria del Fiore, “in which,” says Vasari, “he proceeded with so much care and judgment, making his excavations wide and deep, and filling them with excellent materials, such as flint, and lime, and a foundation of immense stones, that they have proved equal, as we still see, to the perfect support of that enormous construction which Filippo di Brunelleschi erected upon them, and which Arnulpho had probably not even thought of placing thereon.”

His next works were the city walls and gate towers, after which he designed the Palazzo di Signori; after which many other works, among which was the tomb of Cardinal Braye, in the church of San Dominico, at Orvieto, where he displayed equal power as an architect and mosaic worker. At length, at an advanced age, he died, laden with honours, in 1310.

\* Read by Mr. Druce, at a meeting of the Architectural Association, held on Friday, December 11th.



His original model for Santa Maria's, showing the manner in which he intended carrying the dome immediately above the piers, was lost, with those of Brunelleschi, they being apparently not more careful of the original models of their great masters than we of Wren's of St. Paul's.

Having traced the career of one who, though well skilled as a sculptor, yet applied himself almost exclusively to architecture, and whose greatest works are in that art, we now come to one who was educated and practised as a sculptor, and whose great work is in sculpture, he was, from his fame in that art, chosen to design and superintend works of architecture; namely, Nicola Pisano, born 1205, and died 1278, who is celebrated as having opened a new road to sculptors, and by his practice and influence led the way to truth and nature. He was born at Pisa, and according to Vasari, his first lessons were from Greek or Byzantine sculptors at work at the figures and other ornaments of the Duomo and the Baptistery; but, according to other Italian writers, from Pisan artists; but his chief instruction was derived from the diligent study of antique sarcophagi, then at Pisa, in which, says Vasari, "The nude, as well as the draped figures, were perfect in design, and executed with great skill." This, of course, in the then existing state of sculpture, gave him such a correctness of outline and finish that placed him above all others of his time. "His first work," according to Vasari, "was a tomb in marble to San Domenico, founder of the order of Preaching Friars, and in 1231 he completed the construction of the tomb, with the many figures still to be seen upon it, to the great extension of his fame, the work being considered one of extraordinary merit, and superior to anything that had then been seen. While engaged on this work, he also prepared plans for the re-building of the church and the greater part of the convent." I take this opportunity to point out in the works of Nicola and others more particularly given to sculpture, an advantage the inverse of that which I am advocating as applied to architecture of the same man uniting the two arts, that while architecture becomes sculpture and artistic, on the other hand, those works, such as monuments, tombs, &c. generally entrusted to sculptors, and in the present time generally consisting of one statue, and the pedestal neglected, or if attempted to be decorated, barbarous in the extreme, become architectural in their character, meriting the term construction, and enriched in the present instance with many figures, for as long as the architect lacks power of drawing, and the sculptor the art of architectural composition, no perfect work can be executed in either art.

To show that the sculptor and artist is not necessarily a bad constructive architect, note that Nicola was the first to found buildings in Pisa, where the soil is so bad for foundation on arches raised on piers, which in their turn were supported by piles—*for*, says Vasari, "where this was not practised, the whole edifice was frequently ruined by the sinking of the foundation, whereas the piles rendered all entirely secure, as experience fully demonstrates."

One work noted is a deposition of our Saviour on the facade of the church of San Martino at Lucca, which is full of admirable figures. After many other works, we come to the well-known church of St. Antonio di Padua, of which I have a sketch, and also the church of the Friars at Venice, sketches of which are in Street's "Brick and Marble Architecture." Another interval of unknown works, and we come to the marvellously beautiful pulpit in the baptistry at Pisa, and that at Siena. Thus we see in these few notes what seems to us a singular mode of practice. At one time we have a man diligently studying classic figures, and showing the result of his studies in a tomb noted for the beauty of its many figures (not one, remember). At another we find that his skill in composition, as shown in this, has, as we should now say, got him a job in architecture. His success in this gains him many others, which cause him to travel to Rome, Naples, Venice, and other places. We next hear of him, chisel in hand, at Lucca, at a deposition, and finally achieving his great triumphs in sculpture—*i.e.* design and execution—in his native city and at Siena. Soon after which we find him retiring from his labours to Pisa, and leaving his two-fold practice to his son,—

Giovanni Pisano, sculptor and architect.—Now let us mark his education: Vasari says, that being constantly with his father, he attained early proficiency both in sculpture and architecture, so that in a few years he not only became equal to his instructor, but, in some respects, surpassed him; and what was the result? A tomb was wanted at this time at Perugia, to Pope Urban IV., who had just expired. What did the Perugian do; give the job to some incompetent townswoman? No; they wanted a first-rate work: Nicola had indeed retired, but Giovanni had qualified himself to succeed him, so Giovanni was employed, and, as is sure to be the case when a man has really

qualified himself for his work, this first work immediately led to another: a water-course had been just made to the city; a fitting fountain was required for it, "they now, therefore," says Vasari, *i.e.* he, being satisfied with his first work, "confided the erection of the fountain, with all its ornaments, whether in marble or bronze, to Giovanni Pisano." And now let me ask, how many of our existing sculptors would make a fitting, harmonious, and architectural design; how many of our architects would successfully design and execute the details, figures, &c. and why? I think from the want of Giovanni's education; he, while qualifying himself for his profession as a sculptor, which secured the detail, bore in mind that he would some day or other be called upon to design buildings, which secured the composition and constructive knowledge. This underlaid being completed; mark this, as he was a sculptor, executing the stone carving himself, and making the casts for the bronze work, he could not leave till it was finished. He left Perugia for Pisa to see his father, who was ill; but passing through Florence he was compelled to delay some time there, for the purpose of assisting with other architects at the mills on the Arno, which were then in course of construction. "Hearing of his father's death," says Vasari, "he departed for Pisa, where, in consideration of his talents, he was received with great honour by all the city, every one rejoicing that although Nicola had passed away, yet Giovanni remained to them, the heir to his virtues as well as his abilities." Do we ever hear now of an architect being received in this way on his return to his native city after executing two or three works in London, or any other place; and why not? I do not mean to the same extent, for we are not so excitable or enthusiastic on any matters as the Italians of the present day, much less as the Italians of those days in the matter of art. We do not, you will say, take any works of our great painters in triumph through the streets as the Florentines did that of Cimabue; therefore you cannot expect that they will accompany any of our great architects through the streets of his native city; but I will remind you that a great soldier is received with as much enthusiasm as we are capable of; and moreover, a great painter or sculptor alone is also treated with the same honours if he happens to visit his native place; but when did we hear of a great architect being thought so much of, or treated in the same manner? And why is this? you will perhaps say, "Partly because comparative excellence is not so clearly defined, and partly because the public do not value architecture so much as they do the other arts. True; but we must go deeper. Why is comparative excellence difficult to define, and why do not the public appreciate this art as much as the others? I will tell you why, in my humble opinion. Because in the profession itself it is looked upon and treated more as a business than an art, because, in training young men to an art that requires an intimate knowledge of the other two sister arts, to an art to which the others are often called upon to become handmaids, and which requires all the outline drawing, and at least some knowledge of the execution of the sculptor, and all the subtlety of composition, and some of the knowledge of colour of the painter; all this is often ignored; the extent of drawing is confined to a small power of sketching buildings. The other knowledge required to raise works of architecture to works of art is left unlearned. A little archaeology and a large supply of works on old buildings are substituted, which, as most make use of them for reference to Classic or Gothic buildings, may, perhaps, account for the difficulty of defining comparative merit, which is never the case when men are alone dependent upon their imagination, power of drawing, and study of nature. Moreover, the public know, to a certain extent, the amount and difficulties of the attainments considered necessary, and respect the profession accordingly. But to return to Giovanni—the Pisans did more than *help* him, for the men of those days were greedy to possess the works of their great artists. As his first work had been in another city, and had proved his talents and acquirements, they resolved that their city should also be enriched by his works, for, says Vasari again, immediately after recording his triumphant reception, "Nor were the Pisans disappointed when the occasion came for putting them (his abilities) to the proof, for, resolving to make certain changes in the small, but richly-adorned church of Santa Maria della Spina, the charge of these was entrusted to Giovanni, who, with the aid of his disciples, brought the decorations of thatatory to the perfection we now see." His success in this last work caused the Pisans to confide to him the design and execution of the Campo Santo, which I need not tell you was successful also. After which followed many works, including, Vasari says, "the facade of the Duomo at Siena, the high altar of which he covered with figures, foliage, and other ornaments in relief, the whole work being bisected into compartments by fuc mosaics and enamels on plates of silver, fixed into

the marble with great nicety and care." While engaged in restoring a convent, he received a commission to execute a pulpit for the church of Sant Andrea, similar to what Niccolò had executed for the cathedral of Siena. This took Giovanni four years. At this time, having executed so many famous works, like a true artist, considering that he was always a student, he resolved to proceed to Rome, that he might profit, as his father had done, by the study of the few antiquities then to be seen there; but this design he afterwards abandoned, and returning to Pisa, he was commissioned to execute the pulpit in the Duomo: he also executed figures on the tympana of two of the doorways of the same building. His last work was a small chapel in the church at Prato, to contain the girdle of the Virgin, which, having been stolen, the people, as usual, resolved to put it in a safe place. He died in 1320, and was honourably interred in his own work, the Campo Santo. Besides being an architect and sculptor in marble, Giovanni was also a worker in ivory.

We next come to a master-mind, one who has produced one of the world-known treasures of architecture, yet who nevertheless, under the present system, would not have turned his attention to architecture at all, and the world would consequently have been deprived of his work, for during many years of his life he was a painter alone,—need it be said that I allude to Giotto (born 1276, died 1336),—thanks to the system of those times, styled by Vasari, in the heading to his life, painter, sculptor, and architect; and do you think his work in architecture would have been so beautiful had his mind, eye, and hand not been previously trained by his long course of painting, and consequent long study of nature? I am sure not. It is the only way. You cannot get water out of a dry well; and even the study, *i.e.* the knowledge got by the study of nature, is of no use if you have not the power of hand and eye to reproduce her forms and those with which the mind becomes filled; and this can only be attained by years of practice.

So that in Giotto's case, his education as an architect, *i.e.* a designer of architecture, was his practice as a painter. But you must always bear in mind that it was the system or custom of combining the arts that rendered it practicable. I would not pretend to say that at the present time any one of our great painters, after ten or twenty years' practice in painting alone, would make a good architect, or even perhaps turn out a really good design. Though he would possess three of the great desiderata, *viz.* power of drawing, experience in composition, and continual study of nature, he would lack a fourth even to practise architecture as an art, *viz.* the power of applying these acquisitions to architecture; but the artists of those days, whether painters or sculptors, knowing that their fame in their special art would very probably lead to employment in architecture (a first-rate artist of any kind being looked upon as the best designer of the day, and, consequently, the most fit man to whom to confide any work which it was wished should possess peculiar beauty), took care in their leisure time (which was not much in those days when church walls were not of white-wash or colourless plastic) to qualify themselves for such an emergency, and often to such a degree that, as we have seen in the life of Nicola Pisano, a sculptor, that their works are noted as models of construction as well as of beauty. With regard to Giotto's early life, all are well acquainted with the story as told by Vasari. \* \* \* A remark occurs to me now, in looking over the list of works of Giotto—a painting which may as fittingly come here as anywhere else—that in those days the painters and sculptors had great opportunities of studying contemporary architecture, as nearly all their works, instead of being executed in their own studies, were done on or within the walls of the churches, religious houses, and other public buildings; and I can well imagine that the artists' minds were occupied during many a spare five minutes of rest from their labours in admiring and observing the buildings whose walls they were enriching, and much knowledge was probably in this way stored up and made use of when the opportunity occurred.

It is not my intention, nor would time permit me to make mention of any of the extraordinary numbers of paintings executed by Giotto, or to endeavour to trace the events of his life, which would, indeed, be much the same thing.

However, Vasari goes on recounting his principal works, till we come upon this:—"In the year 1327 Guido Tarlati da Pietra Mala, bishop and lord of Arezzo, died at Mossa di Marcenna, when returning from Lucca, whither he had gone to visit the emperor, and his body was carried to Arezzo, where it received the honour of a most solemn and magnificent funeral. It was then resolved by Piero Larcione and Dolpho da Pietra Mala, brother of the bishop, that a sepulchral monument in marble, worthy of the greatness of a man who had been lord spiritual and temporal of the city



as well as chief of the Ghibellini party in Tuscany, should be raised to his memory. They wrote accordingly to Giotto, requesting him to prepare designs for a very splendid tomb, adorned with whatever might most worthily enrich it, and, sending him the required measurements, they prayed him at the same time to procure them a sculptor, the most excellent, according to his opinion, that could be found in Italy, they referring the whole affair entirely to his judgment. Giotto, who was very obliging, made the design and sent it to them, when the monument was erected accordingly, as will be related in its proper place." *i. e.* in the lives of the selected sculptors, Agostino and Angelo, of Siena. Here, then, is an instance of what I remarked above, viz. that the greatest artist of the age, whatever his special profession, was looked upon as the greatest designer, and therefore called upon when any work more than usually beautiful in design was required, whether in his peculiar province or not. After this we hear of no more works in sculpture or architecture till we come to the following:—"After completing these works, and on the 9th July, 1334 (*i. e.* if the dates are correct, when he was fifty-eight years old, and only two years before his death), Giotto commenced the campanile of Santa Maria del Fiore. The foundations were laid on massive stones, sunk twenty braccia; he caused the remainder, namely, eight braccia, to be formed of masonry. The bishop of the city, with all the clergy and magistrates, were present at the foundation, of which the first stone was solemnly laid by the bishop himself. The edifice then proceeded on the plan before mentioned, and in the Gothic manner of those times; all the historical representations which were to be the ornaments being designed with great care and diligence by Giotto himself (would that the architects of the present time would do so, and not leave so much work to the carver), who marked out on the model all the compartments where the friezes and sculpture were to be placed, in colours of white, black, and red. The lower circumference of the tower is of 100 braccia (25), that is, one each of the four sides. The height is 144; and if that which Lorenzo di Ghiberti has written be true, as I fully believe it is, Giotto not only made the model of the campanile, but even executed a part of the sculptures and reliefs—those representations in marble, namely, which exhibit the origin of all the arts. Lorenzo also affirms that he saw models in relief from the hands of Giotto, and more particularly those used in these works.—"An assertion that we can easily believe," continues Vasari: "for design and invention are the parents of all the arts, and not of one only. This campanile, according to the design of Giotto, was to have been crowned by a spire, or pyramid, of the height of fifty braccia; but as this was in the old Gothic manner, the modern architects have always advised its omission, the building appearing to them better as it is. For all these works, Giotto was not only made a citizen of Florence, but also received a pension of 100 golden florins yearly—a large sum in those times—from the Commune of Florence. He was also appointed superintendent of the work, which he did not live to see finished, but which was continued after his death by Taddeo Gaddi" (also a painter), so we see now the connection between the shepherd-boy and the Giotto Campanile. Years have gone by—educated by a painter as a painter, and living and practising as a painter, almost exclusively, till he was fifty-eight years old, we now see his powers of drawing, subtlety of composition, his long experience as a designer, his long study of nature, and his matured and full imagination at last concentrated on a work of architecture, as if it was intended to be a lesson for us, that it is not a light thing when we sit down, pencil in hand, to design a work intended to last for centuries; that they are not light acquirements that the art requires; that it is an injury, rather than a benefit, that our knowledge of construction and building is good and that the walls will stand for ages, if, at the same time, our preparation of our powers of design has not been commensurate with the importance of the art, and with our skill in making our work permanent; if, in fact, our art is not worth preserving, for the pleasure, the instruction, and the benefit of succeeding ages. Do not for a moment misunderstand me: I do not say, know less of construction skill,—you cannot know too much; how grievous, for instance, would it have been if there had been the slightest flaw or sign of weakness in this building, upon which so much art has been lavished by Giotto, if his parting gift had perished from bad construction. No; the constitution should be good, and the bone and muscle strong, where the form is so beautiful,—but still the form should be worthy of the bone and muscle. But, mark the way in which this great artist set to work: from his previous life perhaps it might have been imagined that a dashing sketch would have been the way in which his imaginative design would have been communicated; but, no. Should we then have had the full benefit of all his

knowledge and experience? No; he himself must make the model, or the proportions would not have been sufficiently considered. All the detail must be marked out by himself, or the design would not have profited by his powers of composition. The coloured decorations must all be designed by him, or we should not have derived all the full benefit of his having been a painter; and, lastly, all the detail itself must be designed by him, and, as far as he was able, modelled by his own hand, or of what avail to the work would have been the marvellous power of drawing possessed by its designer? Only two years after the first stone of this great work was laid, Giotto died, in 1336. I cannot better conclude my few notes of his life than by quoting, with your permission, the last few lines of "The Lamp of Beauty" in "The Seven Lamps" expressing, as it does, all my views in so much more glowing words.—"And if this be, as I believe it, the model and mirror of perfect architecture, is there not something to be learnt by looking back to the early life of him who raised it? I said that the power of the human mind had its growth in the wilderness; much more must the love and conception of that beauty, whose every line and hue we have seen to be, at the best, a faded image of God's daily work, and an arrested ray of some star of creation, be given chiefly in the places which He has gladdened by planting there the fir tree and the pine. Not within the walls of Florence, but among the far-away fields of her lilies, was the child trained who was to raise that head-stone of beauty above her towers of watch and war. Remember all that he became; count the sacred thoughts with which he filled the heart of Italy; ask those who followed him what they learned at his feet; and when you have numbered his labours, and received their testimony, if it seemed to you that God had verily poured out upon this his servant no common nor restrained portion of his spirit, and that he was indeed a king among the children of men, remember also that the legend upon his crown was that of David's.—"I took thee from the sheep-cote, and from following the sheep."

As Taddeo Gaddi—born 1300, died 1366—was the successor of Giotto in the superintendence of the works of the campanile, we will next consider a few passages from the life of this master, who was his godson, and who was with him for twenty-four years; "and, after his death," says Vasari, "was considered the first in his art, for judgment, genius, and other artistic qualities, being superior in most of these to all his fellow-disciples." After enumerating many works on painting, we come to this passage:—"Having returned to Florence, Taddeo continued the works of Orson Micheli for the commune of the city, and refounded the columns of the Loggia, for which he used stone, dressed and hewn, instead of the bricks of which they had previously been formed, but without altering the design left by Arnolfo, who had directed that spacious magazines should be prepared above the Loggia, with vaults for storing the reserves of grain laid up by the people and commune of Florence;" and that you may see in how much earnest the authorities and people were in their practice of the art of architecture, as well as the artists, allow me to read the following passage, which I am the more induced to do, as I hailed as a sign of better times the revival to the letter of one of the modes of proceeding here alluded to. Hear Vasari—"And to the end that this work might be completed, the guild of Porta Sta. Maria, to whom the charge of the fabric had been entrusted, commanded that the tolls of the Corn-market, the tax of the Piazza, and other imposts, should be made over to the building; but, what was of more consequence, it was further ordained, and with great judgment, that each of the guilds of Florence should construct a column at its own charges, and should furthermore place a statue of its patron saint in a niche of the same. It was, moreover, decreed that every year, in the festival of each saint, an officer of the respective guilds should make a collection, standing each by his own column, during the whole day, for that purpose, with standard elevated and ensigus displayed." The revival I heard of the other day, when in Oxford, was, that each of the principal heads of colleges and others had contributed a column to the museum. In 1331, he was called upon (Giotto being at Milan) to prepare a model and design for the Ponti Neechoe, his instructions being to construct it with all possible beauty, as well as solidity. The bridge of San Trinita was also built by him. "While all these architectural works," says Vasari, "were proceeding, after the designs and under the direction of Taddeo, he did not neglect his paintings"—he painted whole chapels and other works. He died at Milan.\*

ARCHITECTURAL EXHIBITION.—The opening conversation will be held at the Gallery in Suffolk-street, on Saturday, the 2nd of January. Professor Cockerell will preside.

\* To be continued.

#### ON THE ARTS CONNECTED WITH ARCHITECTURE IN TUSCANY.\*

THERE is no district of Europe entitled to greater respect from all who honour art than was that portion of Italy, during the thirteenth, fourteenth, and fifteenth centuries, which we now recognise as the Duchy of Tuscany; tested indifferently by the excellence and variety of its monuments, the spirituality of its artists' productions, or the honourable consideration in which their works were held by all ranks of society. This high distinction was in a great degree due to a fortuitous union of elements in the constitution of Florence in the thirteenth and fourteenth centuries such as may never again recur. The favourable position of the city for commercial pursuits, and probably some congenial sympathy on the part of the citizens, early made it the seat of a prosperous trade in, and manufacture of, woollen goods. Its association with the Ghibeline cause nourished aristocratic feelings of veneration for feudal nobility, while the sanctity of the relics with which its earliest religious structures were endowed, fostered, more particularly among the democracy, a fervent devotional respect for everything ecclesiastical. Through these three sources,—an enlightened oligarchy, a proud nobility, and an ever-active Church,—ample patronage was provided for artists; and, as has ever been the case, genius sprang to life in profusion at the all-powerful summons of wealth and honour.

There was, however, yet one more charm of great potency at work to aid, and which indeed mainly generated the particular class of excellence to which I propose to draw more special attention. I allude to that particular veneration for technical excellence and honest work which the municipality expressly desired should characterise every work of art for which they gave a commission. Men whose fortunes had been made by the reputation of their skillful weavers, and of their sterling florin,—the only pure gold coin of its time,—could scarcely tolerate, in those magnificent structures which were to be the outward and visible emblem to foreigners of their state, either bad work or dishonest material. Handicraftsmen of all kinds were honoured each in their several degrees: guilds and confraternities were erected with special privileges; and the services of all were enlisted to heighten with every external magnificence the pageants of the community, and the monuments of architecture and its sister arts, which were to be produced for the public enjoyment, and yet more for the public honour. The triumph of the artist was to Florence the triumph of one of its skillful children, whose talent was the manifest source of ease and prosperity to all. Hence the public rejoicings in the "Borgo-Allegro" over the strides made in painting by Cimabue; the public congratulations over the exquisite manipulation of marble work and mosaic by Orcagna, in the Or San Michele, over the brilliant ability of Donatello, Ghiberti, and Luca della Robbia, in sculpture, and over the originality of Giotto, and the daring of Brunelleschi in architecture.

The public buildings in those palmy days of art were looked upon as demanding the co-operation of all; and as each man who brought of his best to the work received, at the hands of his fellow-citizens, both in money and good esteem, the full value of whatever he added to the common stock of beauties, neither the greater men were permitted to appropriate the honours of the less, nor were the less permitted to siphon the credit due to the loftier spirits. Hence arose a co-operation among artists and artisans of all kinds such as has been scarcely ever known in the world's history, and hence is derived much of the peculiar excellence and interest of the principal structures time has spared to us upon the almost classic banks of the Arno.

It had been my intention to dwell upon many of the technical arts which contribute to this excellence, but heavy and unexpected engagements have curtailed the time at my disposal, and I have been forced to limit my attention to three of special interest;—viz. stained glass, which has not received the attention it deserves at the hands of art students; painting in fresco, which is so eminently characteristic of all Early Italian architecture, and Tuscan in particular, and marquetry, of which Tuscany appears to have been at least the European nursery.

Amongst all the arts connected with architecture, there is not perhaps one so capable of imparting splendour to a building as that of stained or painted glass; a fact which appears to have been known and practically applied from the earlier period of the Christian era to within the last century or two. In the first recorded examples nothing more appears to have been attempted than filling in windows with a species of mosaic-work of different coloured pieces of stained glass; nor is it until the eleventh or twelfth century of our era that we have satisfactory records

\* The following is part of a paper read at the general meeting of the Royal Institution of British Architects, on November 18th, by Mr. J. B. Waring, already referred to.



of the application of figure-subjects in this method of decoration,—a system which reached its apogee, with all the other decorative arts, in the fifteenth and sixteenth centuries. There are three methods of executing these glass pictures, which may be termed the Mosaic, the Enamel, and the Mosaic-Enamel. In the first, the composition is formed of small pieces of stained glass, or glass coloured throughout by metallic oxides, termed pot-metal, welded together in small pieces, and producing all the required tints in local colour: the shadows, which are slight, are produced by the application of enamel colour upon them with a brush, and then fixed by burning in a kiln: the best examples of this class are, perhaps, those of the twelfth and thirteenth centuries. In the second, or Enamel method, which was most in vogue during the sixteenth and seventeenth centuries, the artist painted his subject entirely with enamel colours on a ground of white glass, sometimes on one side only, sometimes on both; the entire design being welded together in pieces of much larger size than those usual in the Mosaic method; and, when complete, fixed by exposure to heat in a kiln. In the third, or Mosaic-Enamel method, we find a combination of both the former: it was the most in vogue, as might naturally be supposed, at a transitional period between the first and second methods, and is, indeed, characteristic of the works of the fifteenth, and of the early part of the sixteenth century. In this method, the use of pot-metal for the large masses of colour imparts all that brilliancy and power which is peculiar to the material; whilst the use of enamel colour for the more delicate portions of the picture, as the flesh, the hair, the ornaments, and the general accessories, permits a delicacy and minuteness of finish otherwise unattainable.

In the revival of this art during the present century, the artists of France, Italy, Belgium, and Germany have taken the lead, and far surpass any efforts made by the English; yet in the best of these there is much that is unsatisfactory, and neither in drawing, colour, nor solidity, do they bear any comparison with the best works of the fifteenth and sixteenth centuries in Tuscany. This arises principally from an insufficient adoption of pot-metal in the masses of colour, the false idea that the numerous lead lines of the small pieces of glass in the mosaic method are antagonistic to the general effect,—the contrary, I believe, being certainly the case,—the insufficient use of large masses of shadow, and too minute attention to blending the several local colours: such were the defects which struck me in the otherwise beautiful works of Capronnier of Brussels, and of Bertini of Milan, in the Great Exhibition of 1851, and in those of Petit Gerard of Strasburg, of Lafaye, Gérante, and Lussan, of Paris, and of Vincent Larcher of Troyes, in the Paris Exhibition of 1855.

The notices of the magnificent stained-glass windows of the Duomo of Florence are very meagre: some of them are merely stated to have been executed in 1434 by a Florentine artist, Domenico Livi da Gambassi, at Florence, who had learnt the art at Lubek. This may apply to the series of which an example is given, though that even appears improbable, and some of the subjects in the upper windows of the transepts, of which St. James is an example, are certainly of much earlier date. The entire series is remarkably rich in colour, and consists of the prophets and kings of the Old Testament, and the Apostles and Saints clad in most picturesque and striking costumes, such as Preilgrath describes in his "Pictorial Bible," presenting a fine example of those "storied windows richly dight" which Milton has celebrated in verse.

They are formed of small and irregular pieces of stained glass, and in the *ensemble* present no extreme delicacy of execution nor peculiar depth of shadow; the effect being obtained by a rich combination of colours, excellently arranged, and very much in accordance with the scientific principles enunciated by M. Chevreul: the robes are seldom of one plain tint, but are richly worked with ornamental patterns of a bold and effective character. The faces and drapery are seldom strongly marked in shadow; and the former, though in some cases, as in Moses and the king, very finely expressed, yet in others, as in St. Simplician, are very rudely formed,—a defect, however, not easily remarked at the distance they are placed from the eye, whilst the object which the artist evidently sought, namely, a rich combination of colour, is perfectly obtained. The dark leaden lines with which the small pieces of glass are welded together, without any regard as to where they occur, are also lost in the distance; while the important result is produced by means of these black lines, that much greater solidity and a much stronger effect of colour are obtained. They give increased contrast and distinctness to the separate colours and to the entire composition, which, if not treated in this manner, is apt to become confused and dimly-looking even at a short distance: indeed, it may be taken as a general

axiom, that the blending of tints, unless in subjects very close to the eye, should be avoided in stained glass as simply labour thrown away.

Proceeding now to fresco as an ornamental adjunct to architecture, we find that between the Byzantine epoch, when mural decoration could boast of the rich and solemn effect produced by the use of mosaic inlay, and the revival of the art of painting in the fifteenth century, there extends a long period, embracing the works of the Romanesque and Gothic styles, neither of which has been illustrated in the manner they deserve; an omission arising chiefly from the few remains which exist at this day in a perfect state, at least in the Cisalpine countries. As regards the first-named style, we have frequent records that painting was extensively applied as an internal decoration, where mosaic-work could not be obtained; and we constantly find notices, during the eleventh and twelfth centuries, of the walls of churches being covered with painted subjects, illustrating the Sacred Writings or the lives of particular saints.

The general characteristics of this Italian Gothic, or Giottoesque style of mural decoration are,—a dado, or base, panelled with imitations of various marbles, contained within borders painted in imitation of the glass mosaic-work usually known as Opus Grecanicum, having at times central designs of intricate geometrical and leaf ornament. About 6 feet from the floor is a cornice with small brackets or consoles, all radiating in perspective to a central point of sight: above this the wall is divided into large compartments, containing historical or religious figure subjects, the figures being strongly outlined, and the colours flat and distinct, with but a slight use of chiaro-oscuro. These compartments are also enclosed in painted mosaic borders, and beneath each there is a description of the subject illustrated, written in peculiar Gothic letters of a very good style. The vaulting of the roof springs immediately from above these pictures, the only actual projection being one large central rib, ornamented with winding foliage and mosaic borders, and painted mouldings to carry it more agreeably on to the flat surface of the vaulted compartments, which are almost always painted of a deep blue, studded with gold stars, and in the centre of each of which are painted figures, usually holding written scrolls descriptive of their meaning. Sometimes the names are written on the clouds beneath, from which they frequently appear to rise. The intersection of the rib is marked by a gold boss, carved and gilt, but not of great size, having a ring in the centre, from which a lamp was suspended. The ornament is generally a mixture of mosaic-work, Roman reminiscences, especially in the painted mouldings, and transcripts from nature; the two first, however, being predominant. The colours are well arranged, and the ornamental accessories, such as dresses, buildings, thrones, armours, &c. are of great variety and beauty, and very carefully executed.

Such are the general characteristics of most of the mural decoration in vogue up to the close of the fifteenth century, as seen in the works of Orgagna at Pisa and Volterra, of the Lorenzetti and Bartoli at Siena, and in the several Italian schools of Italy. And although the works of Paolo Uccello, Masaccio, Ghirlandajo, and Signorelli, present many points of divergence, the principal feature being the greater importance attached to the historical subjects, and a very superior style of execution, yet it is not until the time of Perugino that we find a completely different system adopted; and to him appears to be certainly due the introduction of a style in every way superior, which was extended and improved by his contemporaries and pupils, amongst whom Pinturicchio and Raffaele are most prominent.

I will now bring under your notice the last division of my subject, which is the art of marquetry, or inlay in wood. Although a passage in the treatise of Theophilus on Painting (twelfth century) appears to bear on the practice of working in several kinds of wood,—"*cupri, ferri, lignorum, lapidumque*,"—yet the earliest examples with which we are acquainted are to be found on the ivory boxes, ornamented with inlay of various coloured wood, chiefly manufactured at Venice during the fourteenth century. In these the art was only employed as an adjunct; and it is not until the close of the fourteenth or the commencement of the fifteenth century that we find it applied as an ornamental art by itself, and developed on large surfaces. Vasari and Lanzi state that Brunelleschi gave lessons in perspective and tarsia, to architects and others, of which Masaccio, in painting, and Benedetto da Maiano, in his inlaid works, availed themselves. Vasari says that several works of the kind were executed by the old masters, "*da nostri vecchi*," and were termed by them works in "*tarsia*," or intarsiatura. In his life of Benedetto da Maiano, he states that this practice was first introduced in the time of Brunelleschi and Paolo Uccello, "that, namely, of conjoining woods, tinted of different colours, and representing with

these, buildings in perspective, foliage, and various fantasies of different kinds." The earliest artist in this manner mentioned by Vasari, is Giuliano de Maiano (1432—1490), architect and sculptor, who commenced his artistic life with works in *tarsia*, and executed, as his first work, the seats and presses of the sacristy in the Church of the Annunziata at Florence, with Giusto and Minore, two masters of *tarsia*.

The moral that may be deduced from these few observations on some out of the many arts associated in the production of the great monuments of Tuscany, is the following:—It has been the great misfortune of architecture, from the last century up to the present time, to be considered as a study *per se*; as an art perfect in itself, and requiring no adventitious aid from the sister arts of sculpture, painting, &c.; but if we search antiquity through, we shall find no example of such a disconnection of the one from the others; and those buildings are the most interesting, the most beautiful and satisfactory, which have sought the aid and guided the aim of all those varied and ingenious methods of ornament, which the skill of mankind has discovered and brought to perfection. It is true that constructive science is of primary importance to the architect; yet it can do no more than form the skeleton which it is his duty to render, not merely useful, but agreeable to the eye; and in order to effect this, he must of necessity call in the aid of the artist in stone, in colour, in metal, in wood and mosaic work, and possess the knowledge and good taste requisite to apply them effectively to his subject: the useful should never be separated from the beautiful: the last is the complement of the first, of which every work of the Divine Creator, the great Architect and Artist of the Universe, affords striking and inimitable proof.

To one deeply penetrated with this feeling, the study of architecture is no longer confined to the few years spent in an office to obtain a knowledge of the different styles, and the usual methods of professional business, but demands long-continued attention to all the arts of design, with a view to their general application to architecture. And here let me say a word on the subject of servile imitation—an evil almost necessarily attendant on the revival of any style or manipulative art. Novelty and beauty excite admiration, and naturally produce imitation: but this will be only for a time; for we should not be human beings if finally we did not endeavour to strike out a new path for ourselves; and then it is that we shall bring to bear our knowledge, not for the purposes of imitation, but of progress. With all just deference to the studies of our predecessors, with all our admiration for the styles of the past, our present object should be to consolidate and arrange the information we now have; and from the lessons thus gained, the examples thus given, strike out a new path for the powers of the architect, and bring back the art to its normal state, which is one of gradual but sure progress, founded on scientific and artistic knowledge; we should perceive that merit exists more or less in all styles, and is irrespective of fashion, which is mutable and often unjust; that the principles of our art are fixed and certain; that however much long-received rules may be altered as circumstances may require, they are not to be despised or disregarded without careful consideration; that true construction is the vital principle of real progress; and that, besides the excellent and numerous examples of ornament we already possess, Nature has still varied and inexhaustible resources in store for our study; and above all, that for the applianee of these means at our disposal, an earnest study, a just appreciation, a practical knowledge of *all* art, are indispensably necessary, and can only be obtained by an industrious use of the hand and of the eye, as well as of the mind.

But to what purpose should we do this? What incentive has the architect of this country, and this day, to undergo an education of so protracted and so difficult a nature? Let it be owned at once, that the artist's own improvement, and the development of his own powers, with the personal pleasure consequent thereon, must be the only reward he can reasonably look forward to. Such studies for an architect are "*as casuare to the public*"—"that public which requires builders not artists, and looks with jealousy and distrust on any architect who thinks more of his profession as an art than as a trade. How differently was the architect of the fifteenth and sixteenth centuries in Italy situated! In Tuscany especially, that classic home of art where the old Etruscan spirit, though dormant for centuries, rose from its temporary grave in all the glory and majesty of a bright resurrection, the appreciation and admiration of the public were not confined to one art or to one set of men, but to everything which was calculated to lend a grace and charm to all the requirements of civilized life. The church, the government, the municipality, the noble, the wealthy merchant, delighted to honour all that related to the arts, and the artist might labour



contentedly at his own improvement with the certain assurance that the better he succeeded the wider and deeper his talents were, in that same measure he might count on the applause and appreciation of his fellow citizens. After all, to the generous mind, what reward in money, what payment, however great it may be, for services as a man employed to do a certain work—as a servant, in fact—can compensate for the want of appreciation as an artist? But not for this let us falter or be cast down, the good work must still go on, and though the task be a thankless one, though the seed be cast on a stony and rough soil, yet it is necessary to proceed, trusting that in the future such studies will bear fruit, and be of service to our country.

#### SOME RECOLLECTIONS OF THE INTRODUCTION OF ILLUSTRATED LITERATURE INTO ENGLAND.

At the end of our former notes on this subject\* we alluded to the large increase in the number of artists and engravers caused by the improved means which have from time to time been discovered, of rendering their talents available to the multitude, and have no doubt that movements which are in progress will, to an amazing extent, increase the ranks of the army which is engaged in diffusing knowledge by means of illustrated literature. Without further speculating on the coming wonders, we will glance briefly at the system by which, at the time of the publication of the annals, and the illustrations by the Findens and others, the numerous book-engravings were produced. In Hagarth's early days he was wont to execute his book-plates with his own hands, carry them when finished to the publisher, receive his money, and then come home, do his sword and better suit, and sail forth to study life; and it is probable that the chief part of the numerous engravings which were produced by this great painter and moralist was the work of his own hands. Woollett, the famous master of landscape engraving, generally had his subject etched on the copper by Browne and other celebrated etchers, reserving for himself the task of working this skillfully laid in neutral tint, by means of the graver and various corrosions or "bitings," into those rich and varied tints which no engraver has equalled.

As the demand for book-plates increased, engravers of eminence began to gather around them assistants and pupils, who, under superintendence, worked according to their peculiar skill on various parts of the plates. At one time the Findens had a staff of about thirty assistants, many of whom were paid high salaries. It cannot be said, however, that this system of manufacturing led to the improvement (in an artistic point of view) of this description of art. At the time to which we refer, the demand for wood engravings was gradually increasing, and the facilities for printing and the quality of them were much improved. There was, however, great difficulty in procuring artists of sufficient skill to make drawings on the wood suitable for the kind of printing then in use; in fact, most of the artists of name would have considered it as an insult had they been asked to make drawings for such a purpose. William Hery, an apprentice of Bewick's, afterwards a pupil of the unfortunate Haydon's, Kenny Meadows, and occasionally George Cruikshank, by turning their attention to this department of art, greatly improved it in delicacy of finish and brilliancy of effect. Hery's drawings of animals, engraved by Bankster and others, Kenny Meadows's "Heads of the People" and illustrations of Shakespeare, &c. were a chief means of directing the public attention to the merits and utility of engraving on wood, and most rapidly the taste for books illustrated in this way spread. The school-books, works on natural history, scientific publications, &c. began to be extensively illustrated in a manner which contrasted curiously with the blocks in Catnach style, which were formerly in use, and various serial publications began to be offered to the public; amongst the most remarkable of these were Charles Knight's "Penny Magazine," and the "Saturday Magazine." These works were looked at with wonder at the time of their commencement, both for their cheapness, and as was then thought the merits of the engravings, and truly there were so many difficulties to be overcome by the conductors of those journals, that they are entitled to our best thanks. Amongst these was that of providing blocks of boxwood of sufficient size, a circumstance to which we have before alluded. In Mr. Knight's illustrated "London," a great step was made, and the writer of this remembers at the commencement of this work, the difficulty there was in getting admission to places in the metropolis, views of which were required for that and other works. Churchwardens and custodians could not readily understand for what those views were needed, and frequently much more time was occupied by formal applications to get access for this purpose than in making the sketch and

drawing it on the wood. Many who now enjoy the facilities which are so generally afforded to those engaged on the illustrated press, would feel surprised at the particulars which could be related of the persuasion and patience required in former days.

In thus briefly glancing at salient points in the progress of book illustrations, we must not pass over without notice, the introduction of lithography, which for a time came much into use. The improvements in wood engraving have, however, to a considerable extent superseded this for small works.

Besides the publications just mentioned, and some others of less note, most of our readers will remember the launch of our contemporary, *Punch*, who, with so much wisdom, under a merry mask, has done such good service in many paths. At the time of the commencement of that periodical, various illustrated weekly publications of an immoral tendency, were in the market, and several earnest men joined together for the purpose of providing a source of amusement, which, by refined wit and pure intentions, should, by the contrast, make the dangerous works just mentioned contemptible, and well have they succeeded in their undertaking. The commencement of the *Illustrated London News*, in 1842; the *Builder*, in 1843; and some other works, form a point in the progress of illustrated literature for the multitude; and in the former of these publications, amongst other works, we would mention the large illustrations of the Duke of Wellington's funeral, drawn by John Gilbert, which, by refined wit and pure intentions, should, by the contrast, make the dangerous works just mentioned contemptible, and well have they succeeded in their undertaking. The commencement of the *Illustrated London News*, in 1842; the *Builder*, in 1843; and some other works, form a point in the progress of illustrated literature for the multitude; and in the former of these publications, amongst other works, we would mention the large illustrations of the Duke of Wellington's funeral, drawn by John Gilbert, which, by refined wit and pure intentions, should, by the contrast, make the dangerous works just mentioned contemptible, and well have they succeeded in their undertaking. The commencement of the *Illustrated London News*, in 1842; the *Builder*, in 1843; and some other works, form a point in the progress of illustrated literature for the multitude; and in the former of these publications, amongst other works, we would mention the large illustrations of the Duke of Wellington's funeral, drawn by John Gilbert, which, by refined wit and pure intentions, should, by the contrast, make the dangerous works just mentioned contemptible, and well have they succeeded in their undertaking.

At the present time there are very nearly twenty illustrated papers, which issue weekly from the metropolitan press; and yet the great masses of the people, both in the country and large towns, are scarcely reached.

The art of photography has come largely into use, and by its means we may expect many subjects will be transferred to wood blocks without the aid of a draughtsman. One of the chief obstacles in the way of effecting this at present is the difficulty of finding engravers able to work on other forms than those pencilled by the legitimate draughtsman, to which they have been so long accustomed. And here we would remark, that, like the steel-plate engravers before mentioned, the engravers on wood who are most largely employed, are getting into the method of producing blocks by means of a large number of organised hands, some of whom cut peculiar tints of the sky and buildings; others, drapery; others, landscape, building, or foliage; and others of greater artistic skill engrave the faces and hands; while the "small boys," or those of little ability, "block out" or cut away the edges and larger spaces which are to print white. No doubt this manufacturing system is necessary where the production of large cuts is required for the illustration of current events; but we fear that it will have the effect of making the artistic engravers capable of executing high-class engravings on wood with their own hands very scarce. One of the evils which will result from the system to which we have alluded will be the loss of the characteristics of the artists' drawings, for the sky man will get into the method of ruling all his skies, in the same way, and the "cutter" of foliage will acquire a conventional style, which will render him careless of copying peculiarities.

It is admitted that increased artistic instruction amongst our engravers on wood is desirable; and it is to be hoped this desideratum will be supplied to the rising generation.

An illustrated paper, published in Paris, has recently given some examples of surface printing, which are well worthy of attention. Some of these subjects consist of figures drawn with much character and energy, and are as they appear before the public, the work of the artist himself, untouched by the engraver on wood. A short time ago a postal district map of London, about 4 feet in length, and of proportionate height, executed by this means, was published at the office of the *Illustrated Times*, at the cost of 24d. The streets and other places are very distinctly lettered. If this map had been produced on a copper or steel plate, one printer could not have turned off more than fifty or sixty impressions by a day's work. By means of lithography, a few hundreds of copies might have been obtained in the same time; but by the new process between 20,000 and 30,000 copies were thrown off in one night. We are not sufficiently acquainted with this process to be able to give any opinion upon it, but if by this or any other

means we could get bold and characteristic sketches by our great artists, produced at such a price and in such numbers, and of such size, as would cause them to be extensively spread about, they would be useful for schools and for the adornment of the dwellings of the poor, and would effect much good.

#### CHRISTIAN ART IN PAINTING, SCULPTURE, AND ARCHITECTURE.

ONE of the most popular, and also one of the most favourably criticised, of living English writers appears to consider that the title of this note applies to "all the productions of art from the time it has been directed and developed by Christian influences;" and that it may be regarded under three different aspects. These seem to be the *artistic*, which is the individual point of view; the *poetical*, which belongs to all (modes of faith?); and the *purely religious* aspect, which belongs to one mode of faith. Mrs. Jameson and her admirers will, it is hoped, not be offended by this slight transposition of her expressions.

The dilemma for that lady's advocates is the following:—

Does the one mode of faith mean the Roman Catholic Church, *semper eadem*, and consequently, formerly as now, heretical in the eyes of Protestants, i. e. Mrs. Jameson and her critics? Or,

Does the one mode of faith mean the Catholic and Apostolic Church, which embraces all those who acknowledge as their symbol the shortest creed, while differing on essential points of doctrine?

If the first position be the truth, what Mrs. Jameson calls Christian art would be quite as much represented by the works of Baccio and Canova as by those of Nicolo Pisano and Fra Angelico. That of course will be repudiated in favour of the second position. But, although the second position is preferable, because it opens the door of Christian art for the admission of the later Byzantine works, it also opens the door to those very works of Baccio and Canova, which that lady and her followers most assiduously repudiate; and would also force them to admit the animal-like later works by Sir Charles Eastlake, and the landscapes by our best painters, into the ranks of Christian art. There is only one way of escape from this dilemma; and it has practically led Mrs. Jameson to her final conclusion above named, and to say pretty clearly that Christian art is the reflection of the literature of the sixth to the tenth centuries, which literature was "the Legends of the Saints," and, as Mrs. Jameson says, was taken up at a time when "the reverence for those who endured martyrdom gradually grew into veneration, worship, adoration; a line too fine and invisible not to be transgressed by excited popular feeling." But those who are not content to hear that Christian art is only to be found in pictures drawn from the Legends of the Saints may oppose that purely Roman Catholic restriction; and, after first suggesting to Mrs. Jameson that it does not seem to be the province of Christian art to tempt an excitable popular feeling to a breach of the first commandments, may say that they are yet waiting for a reason why any of the following classes should or should not be considered alone or with others as Christian art. These are,—

1. Ornamentation (by diaper or geometric patterns, painted or sculptured, or both), in which it is assumed that no resemblance to any previously existing thing occurs.

2. Ornamentation in which monograms, emblems, &c. (invented or appropriated by the Greek or by the Roman Catholic priesthood before the present time) constitute the chief features.

3. Representations of subjects from the Old Testament; or from the New Testament; or of the Innocents, Saints, and Marys commemorated by the Church of England as by law established; or of persons canonized by the Popes; or of such subjects as the Day of Judgment, Paradise, &c.; or of personages of any class not engaged in miracles or martyrdoms.

And, finally, for the proof of the religious condition of the painter, the sculptor, or the architect, at the time of his conception and execution of the work, because, of course, a practically irreligious man, or a heretic, could not produce a work of Christian art; indeed, it is doubtful whether any, unless engaged in the sacerdotal profession, could be successful.

This is the most tender point in the discussion. Either we must accept all the works by any person professing to be Christian, as Christian art; or we must ask Mrs. Jameson and her friends to draw up an authoritative list of the pictures, sculptures, and buildings that were conceived and executed under the influence of inspiration, and nothing less than such inspiration will be requisite to those who draw up such a list: in fact, the writers of it must be infallible guides. So conscious, indeed, is Lord Lindsay of this, that he endeavours to obviate the difficulty in a most ingenious and unsuccessful manner: he says of those who, with him, practise and admire Christian

\* See p. 498, ante.



rt, "it is not symmetry of form or beauty of colouring, apart or conjoined, that constitutes our prerogative, but the conception by the artist, and expression to the spectator, of the highest and holiest spiritual truths and emotions."—*e. g.* landscape is not Christian art, and, indeed, as the prerogative of Christian art half depends upon the spectator, there would be no work that was really Christian art unless there was a spectator to recognise in it the expression of these truths and emotions. Now, if Lord Lindsay was not writing nonsense, will he, or any one for him, acquaint the public with those canons of criticism which inform him and his disciples when the highest and holiest spiritual truths and emotions are conceived by the artist and expressed in painting, sculpture, and architecture to the spectator? Of course, no one will attempt such a defence of the passage just quoted, because it involves a statement of two things; first, a list of the truths that are to be considered the highest and holiest spiritual truths; and secondly, a list of the emotions that are to be considered the highest and holiest spiritual emotions. Nothing less than the conception and expression of these being Christian art, it would seem that the books produced by the two distinguished writers whom we have cited are mis-named, and that they should have been entitled "Collections of the chief instances of pictures pretending to be works of Christian art, but falling short of that rank." At the same time, will any person who uses the words "Christian art" be so obliging as to explain, by any process of reasoning, whether Dante's vision is a work of Christian art or not, and to give an answer to the same question in regard of Milton's *Paradises*? It is a great comfort that, in theory at least, Lord Lindsay seems to differ from Mrs. Jameson, and that he would allow the possibility of Sir Charles Eastlake's later pictures to be as true works of Christian art as the best productions that imitate the Madonna di S. Luca; and that he would do equal justice to such pictures as "The Governess" and "The Needlewoman," provided always that the spectator be truly a Christian, because, of course, Mrs. Jameson and Lord Lindsay must be assumed to be capable of comprehending the expressions above named, even when unsuccessfully put before other critics.

But the matter gets much more simple when we approach the subject of Christian art in architecture. Here we have a list of negations. It will probably be conceded by those who use the term Christian architecture that it does not mean any particular style at all, provided that the building fulfils an intention of conveying to the spectator (being a Christian) the expression of the highest and holiest truths and emotions; that any style which fails to produce such a building, when required, does not belong to Christian art; that the architects since 1500 have signally failed according to their critics and their own admissions, in producing such a building in any style; that Christian art does not include any style, and that Christian architecture does not include any building, merely because the style and the building are used for an edifice which is called a church; that the mere fact of a style arising, if it were possible, amongst a people professedly Christian, would not make that style Christian art; and that Christian architecture does not mean the style or succession of styles practised from the sixth to the sixteenth centuries for Christian purposes.

And, what is still more to the purpose, we should have some assertions—that the highest and holiest spiritual truths and emotions are only to be exhibited in one style in architecture, though in many styles in painting and sculpture; that this style is still Christian art, even when applied to secular objects, although painting and sculpture when applied to secular subjects cease to be Christian art; that this style is any one form, or all the forms, of Pointed architecture were practised in the Christian parts of France, Spain, Italy, and Germany, in the sense of Northern Europe, and in England and the Low Countries during the period 1200-1500; and that this style, or these styles, if practised elsewhere, were not Christian architecture. Besides all which, we should have the startling, but somehow to be explained some day, corollary, that during those ages, and especially during a particular half-century, the Roman Catholic priesthood (considered heretical by Protestants) possessed while present in these localities, but lost on removal, the power joined to the will of making their buildings then and in future express those highest and holiest truths and emotions which are essential for art or architecture to be Christian art or architecture. With every respect for their condition as it may be inferred from the words of (an English Protestant clergyman) the Rev. Thomas Hogo, M.A.—"The forms of Gothic architecture are those in which men of old expressed their holiest, deepest, sublimest thoughts" (perhaps Mr. Hogo has slightly exaggerated; and we omit the next passage, which occurs in the *Builder* of this year, 1857, page 77); "these men possessed and venerated

the faith, and they wrote it in every detail of the buildings which they reared as that faith's material abode;" a faith which, as above shown, was uniformly in certain places, at a certain time, and in certain hands, sure to produce a work of Christian architecture, whether or not (and this line should have the particular attention of Mr. G. G. Scott) the practitioners or architects had large means, and had ever learnt the grammar—if indeed one existed—of their art.

ANON.

## HERALDRY IN ARCHITECTURE.

HERALDRY claims a long and very ancient connection with architecture. All nations who have made different arts minister to the decoration of their dwellings and public edifices have used it as an accessory. By it is indicated the rank or station of the proprietor or the designer of them: as an historical record, as a souvenir of the dead, and as conveying information of the manners of different countries, heraldry is a useful science; but it has not always been judiciously employed as a means of decoration; sometimes it has interfered with and marred the effect of lines and members of importance in buildings. It ought always to be made subordinate to the principles of art.

Heraldic ornaments sculptured on the temples of antiquity arose from the common habit of dedicating the armour of the enemy and suspending it in temples. This is alluded to by the Greek poets. The Iliad (vi. 81) describes the victor as bearing the armour he had won to Troy, and hanging it up in the temple of Apollo; and Virgil describes, in *Æneid* (vii.), a temple hung round with—

"Helmets, darts, and spears,  
And captive chariots, axes, shields, and bars,  
And broken beaks of ships, the trophies of their war."  
*Dryden.*

The shield of Æneas and the shield of Achilles, to fill by which was considered, in those heroic times, as the greatest calamity; the quantity of military ensigns borne by the Greek cavalry; the rich banners and standards, were objects too magnificent not to be represented by their best sculptors on the friezes of their temples. From the times of the Greeks and Romans, though we might add to these the Persians and other nations, the sculptured stone and the embossed shield have been generally applied as architectural decorations to civil and religious edifices.

Adulation or vanity, and not a love of art, has sometimes been the cause of overloading a building with heraldic bearings. Some monuments in Italy exhibit this fault to such a degree that, as a French writer says, they might be taken for archives of heraldry. The Duomo of Orvieto is, perhaps, one of the most remarkable instances of the extent to which the passion for decoration, and the excessive love of colour, may be carried. Its whole surface was covered with subjects from the Old and New Testament. Many *façades* presented the sculptured effigies of the holy protectors of the city, of the benefactors of the church, of the architects who had designed them; and the Duomo of Siena was decorated with the armorial bearings of all the cities federated with that illustrious republic. If our memory serves us, the Uffizi of Florence had a collection of arms painted in compartments, underneath its cornice, in the *façade* facing the Piazza.

Armorial bearings were first brought into England by the Normans at the time of the Conquest. The number of *armouries* received a considerable augmentation from the splitting and subdividing of landed property, and were still further multiplied by those used in tilts and tournaments\* In the ages immediately subsequent to the Crusades, the symbols of heraldry began to be prominent features in architectural works. The shields upon which they were first represented were in the form of an isosceles triangle, slightly curved on its two equal sides; but soon afterwards they began to assume that of the Gothic arch reversed, a shape probably adopted with a view to such decoration, as harmonizing better with the great characteristics of the pointed style. Painted glass, too—that powerful auxiliary to architecture, which invested the interior with tints of such enchanting splendour; which diffused such life and glory around by the reflection and refraction of light,—painted glass, in its earliest application, was employed to represent military portraits, and arms with scrolls containing short sentences, from which family mottoes may have originated.† Warton places this gorgeous ornament at an era earlier than the reign of Edward II. Encaustic tiles, also, which were introduced in the early days of heraldry, afforded another means of displaying the insignia of warriors. They are still found in the pavements of many of our cathedrals and fine old parish churches. The ornaments burnt into them are of infinite diversity. The zodiacal signs

sometimes appear as an ornament on pavements, as they were also sculptured on the doorways of several cathedrals. Leaves entwining among escutcheons were common; and animals that denoted strength, courage, sagacity. Among fish, the dolphin, which is considered by heralds the chief of fish, and assumes a relation to naval affairs more than any other fish, is found frequently depicted in heraldic bearings;‡ it is so distinguished on account of the beauty of its form and its successful adaptation in numerous examples of sculpture and fountain decoration. We find, in many of our cathedrals, shields of various sizes placed on the point of their arches in a succession of square compartments sculptured in the stone, sometimes painted and sometimes not; inserted in the spandrels; on the bosses of vaulting; and of several different dates, so that they give a clue to ascertaining the periods of various portions of the architecture. The notices that Willement (the heraldic artist) gives, of heraldry in different cathedrals, are interesting to the student.†

We see that the masons and carvers of the Middle Ages, in addition to the great quantity of symbolical figures which they wrought out their fertile lances,—

"Aussitôt main fécond en rêveries  
Inventa le blason, et l'art des armoiries."  
(*Dupren*)—

availed themselves freely of the stores of heraldry which the pomp of power, the spirit of rivalry, the love of distinction, and the ostentation of wealth had rendered very considerable; for every baron or prince had his arms; every county, city, borough, and town corporate and guild had its arms; every abbey, monastery, college, and school, founded in England and Wales, had its arms. The reigns of Edward III. and Richard II. were the "palmy days of heraldry." Hereditary arms were perhaps scarcely used by private families before the beginning of the thirteenth century.‡

Quatremère de Quincy says on this subject (*Dictionnaire, art. Armes et Armoiries*), that heraldry, which, after all, is only an accessory, often plays too principal a part; doors sometimes seem as if they had been made expressly to support a mass of these grotesque ornaments,—ridiculous trophies raised by bad taste to vanity. They are not inherent to architecture, though sculptured in the stone: they should be treated as a *hors-d'œuvre*, and never break the uniformity of a building; whereas we often see in some of the grander buildings in Europe pediments and raking mouldings broken up, and an aperture left in the middle purposely to admit a bust, a medallion, or an armorial bearing. Whatever beauty the ornaments and details we have been speaking about possess in themselves, they should increase our admiration for the higher and superior beauty of the object they adorn: that should be the great centre of attraction. Where good taste presides they may be most advantageous, and contribute greatly to the effect of a building, though not essential parts.

F. L.

## CONSTRUCTION OF FLUES AND VENTILATION.

MR. GEORGE JENNINGS, to whose ingenuity and spirit we owe many useful things, now in great demand, has lately patented some fresh matters relating to construction and ventilation. He proposes to employ a light iron trimmer in front of chimney openings, instead of the wood trimmer now used; also, hearth blocks, perforated, instead of the half-brick trimmer arch,—the perforations in the "blocks" to correspond with air spaces in the iron trimmer joist. He then, in combination with these matters, proposes to use earthenware flue-pipes, having air spaces or chambers round them, so shaped as to make the circle into a square. These air chambers are to serve as extractors of vitiated air, and are so made that they bond in with the brickwork, and take the inclinations peculiar to flues in buildings.

"Suppose a two-roomed house," says the patentee "the lower room only having a fire-place, but the chimney formed with my flue pipes, if the upper room, wanting the fire-place, be connected by a junction block, with my extraction chambers, the sleeping-room would be continually changing the air. Of course, I have also a simple plan for supplying air for respiration, and to support combustion." In a larger house, the kitchen chimney only being built with the flue pipes, and the extraction chambers communicating with every room, at or near the ceiling flue, vitiated air, from the heat imparted from the smoke flue, would be drawn off without any communication with the interior of the smoke flue, as is the case with the Arnott ventilator. We must take an opportunity to look at these arrangements.

\* Moule's "Heraldry of Fish."

† "Heraldic Notices of Canterbury Cathedral."

‡ Hallam's "History of Europe during the Middle Ages."

\* Edmundson's "Complete Body of Heraldry."

† "The Curiosities of Heraldry," by O. A. Lower.









MENTHMORE, BUCKS.—SIR JOSEPH PAXTON, M.P. AND MR. GEO. HENRY STOKES, ARCHITECTS.







## MENTMORE, BUCKS.

THE SEAT OF BARON M. A. DE ROTHSCHILD.

MENTMORE, of which we this week give a ground plan and view, is the seat of Baron Meyer Amschel de Rothschild, lately erected from the designs of Sir Joseph Paxton, M.P. and Mr. George Henry Stokes.

It is about  $1\frac{1}{2}$  mile west of the Cheddington station on the London and North-Western Railway, and is situated on an eminence which commands a fine view of the vale of Aylesbury, the Dunstable downs, and the Chiltern and Barham hills.

The style adopted by desire of the Baron for the exterior is that which prevailed during the early part of the reign of James I. and of which Wollaton Hall, Notts, is perhaps the finest example. A difference in the combination and arrangement has contributed to produce grouping of a picturesque character and outline, and the details and ornamentation are understood to be the result of a careful study and examination of the works of John of Padua.

The mansion is built entirely of Ancaster stone, of fine quality and colour: the cornices are highly enriched; and the frieze of each order is filled in with carved panels and heads.

The approach to the mansion is by a court, flanked on one side by the wall of the conservatory, and on the other side by the screen wall of the servants' offices. Niches are formed in each of these walls, for the reception of statues. The entrance-porch is of sufficient width to admit of carriages passing through, and has a groined stone-ceiling elaborately carved. From the sub-hall, which is lined with Caen stone, and paved with Sicilian and Rouge Royal marbles, a flight of marble steps leads to the arched corridor, which forms means of communication between the suite of apartments on the ground-floor and offices. The grand hall is about 48 feet by 40 feet, and 40 feet high, and is separated from the sub-hall by the corridor just mentioned. At this end of the hall are inserted three arches, the whole height of the ground-floor, filled with polished plate-glass. The entrance to the interior is through the centre arch which forms a doorway.

At the level of the chamber-floor the grand hall is surrounded by corridors, and an open arcade of great beauty and richness; each arch of which is filled with a balustrade of alabaster and green marble. This arcade, with its richly-moulded arches, carving, and ornaments, is striking and effective, and imparts both character and variety to the interior.

Immediately above the arcade is the main cornice, from which spring the coved ceiling and walnut ribs, which divide it into compartments; stone heads, carved by Monti, are placed in the frieze beneath each rib, and the compartments of the coved ceiling are filled with ornamental shields, scrolls, and foliage.

The hall is lighted from the top, the roof being constructed externally on the ridge and furrow principle. This ridge and furrow roof is supported in wrought-iron riveted girders, to which also is fixed the framework of the ceiling, consisting of moulded walnut ribs, filled in with glass manufactured expressly for the purpose.

The grand staircase occupies the side of the hall opposite to the vestibule of the garden-entrance, and consists of one wide central flight of steps of solid Sicilian marble; on either side of which is a deeply-recessed arch with coffered ceiling; a flight of steps on each side leads from the landing to the corridor, surrounding the grand hall. The ceiling is divided into panels by moulded walnut ribs, the soffits of which are enriched with gullionce ornament.

Some departure has been made from the style of the exterior, in the decoration of the principal apartments, the dining-room, drawing-room, &c. being elaborately finished, and decorated according to the styles which prevailed in France during the reigns of Francis I. and Louis XIV., XV. and XVI.

The servants' offices are also built of Ancaster stone, and are in the same style as the mansion. They form four sides of a quadrangle, the entrance to which is through an arched gateway. The whole of the rooms are fitted with every requisite. The kitchen, pantry, and larder are lighted from the roof. The kitchen is provided with all necessary appurtenances, which were supplied and fitted by Messrs. Temple and Reynolds, Princes-street, Cavendish-square. Direct communication is obtained with the mansion by steps leading from the passage near the kitchen; the kitchen, scullery, and other rooms appertaining to it, being thus placed in a nearly central position.

The mansion is warmed throughout by hot-water pipes, and provision is made for ventilating each room, by the admission of fresh, and the removal of vitiated air. The whole of the windows are fitted with copper casements, and glazed with plate-glass, supplied by Mr. Alfred Goslett, of Soho-square. The hot-water apparatus and bell-hanging were executed by Mr. May, engineer, Dean-street, Holborn.

The contractor for the works was Mr. George Myers, of Lambeth, by whom the whole has been executed in a most excellent and substantial manner, under the able superintendence of Mr. John Jones, the clerk of works.

## POINTED ARCHITECTURE AND ITS GREATEST ENEMIES.

Sir,—It may be convenient for some people to sneer against anonymous criticism, and it is most proper to reprehend it if it be made the vehicle of personal attacks; but in matters of scientific or æsthetic investigation, where there is, or ought to be, but one object in view—the search of truth—it is both desirable and convenient to conduct the discussion without mentioning names on either side. In the examination of dogmas and theories it is often proper and necessary to use strong language. It is by rough shaking only that gold is separated from mud. Truth is truth, whether the discussion lie between Mr. X. and Mr. Z. or between Cato and Poplicola. But in the former case every keen observation is felt as a personal reflection. Mr. X. takes the strong language as aimed at himself, not at his theory; and Mr. Z. fancies there is always some lurking shaft aimed at his own defects or misfortunes. It is from these causes the rules of Parliamentary debate prohibit the mention of any member's name, and that you, sir, and every conductor of any leading public journal, make use of the editorial *we*, instead of the egotistical *I*. It is found more convenient and more courteous. It leads more directly to our argument, and we are less liable to fall into personalities.

But if gentlemen who have placed themselves at the head of a party are determined to make a personal matter of it, and will rush into the conflict, catching up every skull-cap they find, and putting it on their own heads, cry out,—“What a wretch this is who has made this for me!” all that can be said is this—if they will fit on the cap, they must take the chances of the blows that may light on it. But why should anything of this sort occur in matters of abstract taste or art? If Mr. Scott chooses to rush into a controversy as to Pointed architecture, why should he thrust himself forward as bearing the sins of the whole of a small, but very noisy and arrogant body? Months have elapsed since the lectures to which he alludes were delivered, and their sentiments have since been extensively quoted, handled about, and perhaps exaggerated. Still the question is not whether A. or B. utter them, but whether they are enunciated publicly. Jack Wilkes assured George the Third that “he never was a Wilkesite,” and it is no doubt true there are “Scotti ipsi Scotti Scottiores;” but why should he apparently be so eager to seek a personal antagonist? “I think I know ‘Verax,’” he says. What of that? Would truth be less truth, if he does; or if “Verax” could be put down by casuistry, or silenced by clamour, would not truth eventually prevail? It is generally the sign of a weak cause when a man evidently tries to pick a personal quarrel with its advocates. There is an old stock joke at the bar, that a brief was once delivered containing these words:—“We have no case; counsel are instructed to abuse plaintiff's attorney.” And very pretty insinuations (we will not say abuse) there are against “Verax;” garbled, distorted quotations, seeming erudition (on which point, by the way, we may respectfully take leave to demur to the self-constituted tribunal), and, worse than all, some more than insinuations as to veracity. Let us enter into these points, and see what “Verax” has said, and whether or no Mr. Scott may not a little, a very little, have laid himself open to similar imputations.

But, before we begin, we must try and set Mr. Scott right as to quotations in inverted commas. These are not supposed to be *verbatim et literatim* transcripts of all a writer has said. Should we attempt this in Mr. Scott's case—should we have to give all his three-or-four-ways-to-be-understood sentences, we should have enough to do. Inverted commas mean that the phrases included are not those of the writer. It does not follow that they contain every letter and syllable quoted, but that they honestly contain the pith and sense, or salient points of what has been said, or likely to be said, by others. Any garbling or distortion is clearly wrong. But to write “in inverted commas” “Crusader” for “Soldiers of the Cross” (and, mind, this is italicised as one of “Verax's” (and, mind, this is italicised as one of “Verax's” heinous offences) is certainly not a garbling of a quotation, the more especially as the greater part of those worthies were soldiers, and as shortly as we can, run through “Verax's” statements, and the replies to them, and let us see how far these answers are those of an open, candid, and generous mind, or not; or whether the same or worse objections may not be retorted on the objector.

“Verax” commences by stating that the title Christian architecture, *par excellence*, is not due to

the Pointed style, in several respects. It never existed in the heart and centre of the Christianity of the period, and was not the architecture of the early Christians, nor of the Primitive Church for many centuries. Now, what is Mr. Scott's answer to this?—“A style often objected to as Pophish is stated not to be Christian, because not found at Rome.” This is *all* he has to say. Is this attempt at a sneer either a fair representation of the argument, or any answer to it? Permit me for a moment to state it in the words of the Roman antiquaries. “Here,” they say, “are the buildings wherein, if not the holy Apostles themselves, certainly their immediate successors, have met and worshipped,—buildings hallowed by the footsteps of saints, and the blood of martyrs, where the great champions of the faith, the fathers and doctors of the church, have maintained the sacred truths of Christianity,—buildings which are, doubtless, the spots on earth most to be revered, except Jerusalem itself, by any Christian of whatever persuasion,—and you brand them with the odious title of Pagan. You might as well say the New Testament was heathen, because it is written in the heathen Greek tongue. And then you cite your northern Gothic, which is nothing but Saracenic brought over by the Crusaders, and tramontanized, and vow that is the only Christian architecture, and for no reason, or no ground, but your bare assertion.” Instead of sneering at “Verax,” will Mr. Scott be so kind as to answer the Italians? I can assure him the expression Pagan, as applied to their buildings, is regarded by them with horror, as the reckless application of an opprobrious term to some of the most sacred places on earth.

“Verax” next goes on to plead that Pointed art can scarcely be called Christian *par excellence*, as the Church had existed twelve centuries before such art was known; that it no sooner took root and got to maturity than it showed symptoms of decay; that it occupied only one-twenty-sixth portion of the existence of Christianity while in its glory, and only one-sixth in all its stages, including its debasement. He goes on to show that the world was not in that state of Christian excellence as to stamp such character on co-existent art; that the Church was in a frightful state of schism, dissension, and corruption; and that of the laity as bad; the Eastern empire at the mercy of the Turks; neither learning, arts, nor commerce; the lower orders slaves; no law but the will of the strong; no arbitrator but the sword. To all these arguments what is the reply? Absolutely nothing. But Mr. Scott, who, evidently finding “he has no case,” wishes to get his fling at the opposite advocate, cries out,—“There now! what a shame! He says there were no arts! Why, there were three painters just beginning to learn at Florence from some Greek artists; men built lots of cathedrals [not a quarter so many as the Normans]. Can you say the days of Grotto, Abelard, and Dante, were not days of learning, and of the German free cities and Italian towns those of commerce?” Soft and fair! *Exceptio probat regulam*. Isolated instances will not prove general principles, but rather infer the reverse. If a few learned men could be found in a century, it would not prove that the majority—a very large majority—were not in gross darkness. The old alchymical Bishop of Lincoln (Grosstet) had amassed some learning when the rest of the world had none, and people wondered at him; as to the other school-man, he would have been forgotten ages ago if it had not been for his unfortunate and scandalous amours. Are these men to be quoted as proofs of ages of learning? The days of Dante were what he describes them himself, days of darkness, ignorance, fraud, and oppression. He was a bright, particular star in his age; a great and glorious poet; and had acquired so much learning that we wonder where he got it. But there are hundreds of fifth-form boys, and thousands of undergraduates, who possess more learning than the whole world had in that age. As to the printers, they were fathers of a school which ultimately arrived at the highest perfection, but they stood alone in their day. The same thing may be said as to commerce; the Italianic league was just formed, which ultimately ripened to most important results; the citizens of Amalfi had a large coasting trade in the Mediterranean, which, centuries after, led to the maritime enterprise that discovered America, and to that enormous state of trade we now call commerce. All these things must be taken comparatively. I suppose more tonnage goes out from the port of Newcastle now, than existed in the whole world in that day.

Just let us push this sort of argument one step farther, and see to what absurdities it may lead. Flavio Gioia, or (as Dr. Gilbert thinks) Paolo Veneto, brought a mariner's compass from China, in 1260—*ergo*, it was the age of magnetic science,—and it may be believed that Cœur de Lion sent home the news of the storming of Acre by electric telegraphs (I beg their pardon), telegrams! Bartholomew Schwartz, somewhat later, found out how to use powder as a



projectile—*ergo*, it was the age of gunnery, —and it is not impossible Philip Augustus used the Minié rifle!

No, sir, attempts have been made to show these were ages of faith, because people believed whatever they were told—for the best of all reasons, they had no power to examine; and ages of happiness, though the world was full of violence. But to endeavour to go further has been reserved for the present day. I fear we must sum the matter up in the words of a lively French writer, who says,—"In those times there was no science, not even in that which touches us all most nearly—our health. The king's physician was invariably a Jew or an Arabian; the king's fool was always a native."

On the next point, I find "Verax" is accused of having made sad mis-statements: he has said "the last new original style," the last modern architecture," instead of "the latest original style of architecture," and "the architecture of the modern as distinguished from the ancient world;" he has also stated that the very same thing is called by the same writer "Medieval," and "the architecture of our forefathers" in the next paragraph, when, in strict truth, it is only in the next page. All sorts of hints are thrown out to lead people to believe that much turns on all this, and that "Verax" is perverting quotations and mis-stating facts. Can anything be more petty, more ungenerous? It would have been much better if Mr. Scott had answered "Verax's" question, how its being the last new style—I beg a thousand pardons, "the last new original style"—made it, *par excellence*, Christian. A newer style, then, it seems would deprecate it from its virtue and dignities. But "Verax" denies it is the last new original style of architecture: this he asserts to be that of iron and glass; and that the Italian (as much derived from the Roman as the Decarated from the Lanct) was another original intermediate style.

But now comes a really serious accusation of "a double mis-statement;" here are the words: "On the much-veiled question whether the Pointed arch was imported by the Crusaders from the East, he ('Verax') first converts it into a question whether Pointed architecture, instead of merely the arch, was so imported." This "Verax" does not do, for he does not see how they are to be separated: the other half of "the double mis-statement" is, that "Verax" makes out Mr. Scott admitted this, by purposely leaving out an *if* in transcribing the passage. In many instances there is much virtue in an *if*;—but in this there seems to be none. These are his very words,—I hope by an error of the press or transcriber these letters may not again fall out:—"If its [the Pointed arch's] systematic adoption can with certainty be traced to the suggestive architecture of the East, surely this does not unchristianize the already Christian architecture of the Soldiers of the Cross, who brought the idea home among the spoils won from their unbelieving foes." In the name of "conscience," as Mr. Scott talks so much of it, what is this but an admission,—*ay*, and that in spite of the *if* that he is so extravagantly anxious for? "If I did so and so, I did it with a good motive." Is not this an admission that something was done? "If I brought home the statue, I did not break the finger off." Is not this an admission of a fact? "If the Crusaders brought home something, they did not unchristianize it." Is not that an admission something was brought? But, probably Mr. Scott thinks he can blow hot and cold, and, if foiled in one part of his argument, can jump round his *if*, and take up a new position. This will not serve; there cannot be two truthful defences. It will not do for a thief to say, "I did not steal the horse, but *if* I did, I meant to send it back next day." His *if* would be considered an admission of the fact before any "conscientious" magistrate, and would infallibly send him to the sessions. It comes to this, the Crusaders brought something home or they did not. If they brought nothing home, what nonsense it is to talk of what happened to it by the way. The Americans are very fond of small jokes about nothing: "half nothing," "the small end of nothing whittled down;" but of all strange ideas the strangest would be to "unchristianize" nothing. If they brought something, what was it they brought? The passage under examination is certainly as obscure and involved as anything I ever read, and is probably intended not to be too closely scrutinized; if so, Mr. Scott has brought it on himself,—he forces us to try and unravel it.

But, before doing this, it will save time and smooth the way to have a word or two about Mr. Fergusson's book. Mr. Scott says it would not be easy to look through all he has written; it seems, however, he has gone as far back as 1840. His conclusion is, that the search does not help "Verax." Let us see what, in "Verax's" own words, Mr. Fergusson "shows."

And here it is really a relief to take up a book based on facts and dates. It would be well, if every

architectural critic wrote like Mr. Fergusson, as careful and as candid in speaking of a Hindu Vimana as of a Roman Basilica,—as unprejudiced in treating of the Parthenon as of Salisbury Cathedral,—and pursuing the only philosophical way to arrive at truth by collecting all his facts before he begins to deduce inferences. Now let us turn to page 883, *et seq.*—Your readers will perhaps remember the year of the Hejra was 622, and that of the first Crusade 1096. Well, what does Mr. Fergusson show of undoubted Moslem or Saracenic architecture? The mosque of Caliph Omar, at Jerusalem, was built A.D. 637; the mosque of Amrou, at Cairo, 642; the mosque of El Aksah, at Jerusalem, 691; the mosque of Caliph Walid, at Damascus, 705; the mosque of Ebn Touloun, at Cairo, 876; the mosque of El Azhar, at Cairo, 981; the mosque of Sultan Barkook, at Cairo, 1149; several others, also, of later date. Of these he gives five very clever illustrations; and I am sure, to any unprejudiced mind, a few glances will show these to be the models or precursors of our Pointed architecture.

But let any one go through his book, and after that look to any other work wherein views of Moslem architecture are contained, and there cannot be a doubt of the resemblance. I remember once standing before the magnificent west front of Peterborough Cathedral in company with an old Indian officer, when he said, "Why, this is just what we see throughout the East, huge pointed portals running up to the top of the building; spires, pinnacles,—everything like the minarets,—the aspiring character of Mussulman architecture." And this style came into general use very shortly after the great Crusades. We do not say that the dogma *post hoc, ergo propter hoc* is always correct, but surely it is in this instance.

Again, let us look at this probability. Mahomet and his followers sternly refused to follow or copy anything in use either by Christians, Jews, or their Hindoo neighbours. It is likely, then, they would copy the architecture of either? The reigning Caliph would probably say, "I will not have the round arches of those Christian dogs, nor the level architraves of the Hindoo idolaters. If we are to have arches, make them of other forms,—horse-shoe, or stilted, or pointed. We copy nothing from unbelievers in other matters, why do so in their architecture?"

And now, begging pardon for keeping Mr. Scott waiting, we will return, and put a few questions to him; for, unless we get him into a corner, it is clear there is no knowing where to have him,—

"We'll keep him to the question close,  
And argue *ὅτι τὸ κῆρυξ*."

First, then, we would respectfully ask,—and Mr. Scott surely (after such dictation to other people) must have an opinion on the subject,—did the Crusaders bring any style of architecture from the East to the West or not?

If they did, what style was it?

What the gentleman means by "the suggestive architecture of the East"—was this Pointed or not?

What he means by trying to set up a difference between the Pointed arch and Pointed architecture? How is the one to be separated from the other? The arch is not a form of ornament, but an essential part of construction. Perhaps he will also kindly inform us what Pointed architecture would or could be without the Pointed arch?

What he means by "the already Christian architecture of the soldiers of the Cross, who brought the idea home among the spoils," &c. If it were theirs before, they could not bring it back with them as spoils. His sentence, and all its *its*, evidently allude to Pointed architecture.

Is there any proof, or presumption, or the most remote probability, that any Christian building was ever erected anywhere in the Pointed style before A.D. 642?

If not, will he explain how the Crusaders found it among the Saracens, as a sort of Christian founding?

Now will he kindly turn to his letter of the 5th of December last, and tell us what he means by saying *it* (the imported architecture) is not referred to the Saracenic but to the Romanesque of Western Europe? And will he explain how this Romanesque had crept all over Europe in various forms, from Lombard to Norman, at least a century before there ever was a crusade or crusader? And will he explain why the lecture and his letter differ? Clear, definite, and succinct answers to these questions would be a great boon to "Verax."

Then "Verax" wishes to know how it is "the earliest style which may fairly be called Christian is the Byzantine?" In his innocence, and backed by the authorities of Procopius (who wrote a separate treatise on the buildings of the day), of Agathangas, of Paulus Silentiarius, and several more (for we deal now the imputation of "seeming erudition"), we learn that the first who made any change in the

architecture of Byzantium was Justinian; that he prided himself much upon it, and boasted he had vanquished Solomon himself; that his flatterers told him his ideas came from heaven; but one sly historian, it is said, relates that these innovations were stolen from the palace of the Persian emperor. Mr. Scott's polite answer to all this is, he never "even alluded to the name of Justinian." Does not know the gentleman! Probably not. But will he explain when, how, or in what way the Byzantines began, and fairly succeeded in Christianizing architecture for the first time, which he has not only alluded to, but asserted?

Will he also show how, or in what way it was on the cessation of intercourse with the Moslem world, Pointed architecture first declined, and then became debased, and shortly perished?

Will he also explain the seemingly great inconsistency of always crying out for "the architecture of our forefathers," and yet always designing in some foreign style; the more especially when the architect openly takes for his motto, "*Celebrare domestica facta*," to a design for an English house for English statesmen, and what justification it is to answer when under this motto we find a Dutch market-house, "it has often been objected to as Italian," and whether Italian is nearer the "*domestica facta*," than Dutch?

Will he also tell us why a man cannot be master of two styles of architecture, Classic and Gothic, as well as of one, and why those who confessedly are masters of both, should be branded as enemies of the latter, against all truth and reason? Why the Puginists should alone arrogate to themselves the knowledge of Pointed architecture? Why, when "Verax" and his friends are doing all they can to save Pointed architecture from the consequences of the blundering and overstatements of others, and wish to bring them back to the only safe path, that of truth and soberness, an answer should be put forth, headed in capitals, "the statements of the opponents of Gothic architecture?"

Will he also tell us what he means by "young saints?" for "Verax" never used such an expression. And here it gives me the greatest pleasure to say, that among the rising young men both of the Institute and Association, there is quite as much a desire to get out of the trammels of "Puginism" as of the old "five orders" school. They wish as the world progresses that new forms of beauty should develop themselves, to meet the varied sentiments that every day arise,—not as the *Electricisti* of Italy attempted to make a hedge-podge of different beauties, and stick a peacock's tail to a leopard's head; nor to put a bit of Newgate below, and York Minster above; but to get more weapons to their armoury, more instruments to their observatory, more colours to their palettes; and so that different and more varied sentiments might be better represented by the increased means afforded to them.

In conclusion, I will now venture to relate to Mr. Scott a story which occurred during the Crusades. It is related by the author of the "Histoire Générale."—During one of the truces between them and the Saracens, the latter asked seriously why it was they had left their homes and travelled so many long miles, and wherein they, the Moslems, had offended them, that they sought their blood in such a vengeful way? The Crusaders said,—It was because they, the Saracens, were unbelievers; they had put to death our Lord; that they were idolaters, and in particular worshipped two great idols, called Mahound and Tergant. The Saracens answered that they were most sadly mistaken; it was the Jews who had put to death Issa Ben Mariam (Jesus, son of Mary) 600 years before there were any Mahometans; that as to images they abhorred them; so far from worshipping them, they never suffered the likeness of anything to be made, not even in a picture; they worshipped Allah, and him only, while the Christians had images in all their churches, bowed down to them, burnt incense before them, lighted candles in their honour, and worshipped them; and they entreated the Christians to come into their mosques and houses, and see for themselves whether there were any idols there or not. It was all of no use. The Christians were so blinded by prejudice they would not believe the evidence of their own senses, and they went on devoutly cutting the Saracens' throats because they had killed the Lord of Life, and because they worshipped two great idols, Mahound and Tergant.

Are there not in the present day some people as much blinded by prejudice as those Crusaders were? Your readers will probably think so. VERAX.

HAWARDEN CHURCH: MORE BURNING.—By a curious fatality, the new pulpit, reading-desk, and other woodwork and patters, at Mold, in Flintshire, prepared by Mr. Edwards, carpenter, for the restoration of the interior of Hawarden Church, have also been destroyed by fire, like the church itself.



## LECTURE ON THE MUSEUM OF ART.

On Monday, the 14th, Mr. J. C. Robinson, F.S.A. read an address in the Theatre of the Department at Brompton, on the Museum of Art, in which he traced the growth of the collection, and urged its value in popularizing knowledge. After answering some objections, and pleading for museums in general, he proceeded to describe the classes of objects contained in the collection. With reference to the increase in the value of fine specimens which has taken place, Mr. Robinson said,—

"Specific instances, in any number, might be adduced in support of what has been now advanced; time, however, will only allow of the briefest possible allusion to one or two: the rise in value in one class, in which our collection fortunately possesses a most important series, has been so sudden and remarkable, as to be worth special notice. Four or five years ago the most beautiful specimens of Italian majolica ware might have been purchased at dealers' shops and London auctions at from a few shillings to at most a few pounds, say 5s. or 10s. at the highest; whilst in Italy a few scudi or dollars would purchase the finest piece. Now these same pieces will sell for 20l. 50l. 100l. 200l.; nay, I dare scarcely place a limit to the value of the finest specimens. As an instance, the most seemingly extravagant price ever heard of until then was given in Italy, not four years ago, for a fine majolica plate. After being refused by dealers and amateurs without number, on account of its supposed exorbitant price, 12l. English, demanded by its owner, this long-coveted specimen was purchased by a French dealer. This year this same piece was publicly sold by auction in Paris for the sum of 450l. and brought in triumph to this country by its purchaser, a celebrated English amateur; and this Museum has, in times not long gone by, made numerous acquisitions in the same direction, which, if now brought to the hammer, would yield a similarly fabulous increase. The Bernal Collection, which two short years ago was offered intact to Government, and declined, for 40,000l., and subsequently realised upwards of 60,000l. by public auction, would now probably be worth 100,000l.; and the purchases made for the Museum of Art on that occasion, as they were the choicest treasures of the collection, would, without doubt, yield a still higher rate of profit."

The lecture is published by Chapman and Hall, at a nominal price.

## PROVINCIAL NEWS.

**Maidenhead.**—The new county police-station here is nearly finished. It is built with red and white bricks, pointed black, and inclosed within a wall of open brickwork, with freestone coping, nearly 5 feet high. The court where the divisional petty sessions will be held is 28 feet long, 18 feet wide, and 18 feet high. The cells for prisoners are 11 feet long, nearly 6 feet wide, and 10 feet high. Each is supplied with a water-closet, and is warmed and ventilated. The building was erected by Mr. James Dormer, of Reading, from a design by Mr. J. B. Clay, the county surveyor.

**Devizes.**—The new corn exchange has been opened. The building is 142 feet long by 42 feet wide, and will accommodate 3,000 persons standing, or 1,000 seated. The cost will be about the original estimate, or 3,505l. towards which 2,500l. have been raised by voluntary contributions, the remainder by mortgage on the borough rates, to be repaid by instalments of 100l. a-year.

**Cheltenham.**—The new casualty wards of Cheltenham General Hospital have been completed. The design was furnished by Mr. D. J. Humphris, and the contract was taken by Mr. W. Salisbury. The new wards, one for male and the other for female patients, are heated by steam, and ventilated. There are a reception-room, bath-room, and other apartments. The new wards were set in progress by a subscription of 1,000l.

**Pontypridd.**—The new bridge here was inaugurated on Friday last week. It consists of three arches (40 feet span each), on the lower side of the original bridge, in the parishes of Llanwono and Eglwysian. The width of the roadway is 20 feet, length of bridge, 172 feet. The stone was from a quarry belonging to Mr. Morgan Edwards. The bridge cost altogether 1,575l. On the centre of the bridge is the following inscription:—"This bridge was erected A.D. 1157, by public subscription.—Designed by Robert Hughes, district-surveyor; and built by Thomas Jenkins." The work was paid for by instalments as the building progressed, viz. the first instalment of 450l. when the abutments and piers were up plinth high; 300l. when the abutments and piers were ready for fixing the curves; 450l. when the last key stone was driven; and 375l. three months afterwards.

**Birmingham.**—A new temperance-hall is being erected at Birmingham capable of seating 800 persons.

**Newcastle.**—The new corn-market was opened on Saturday week. It forms the centre portion of the corporation buildings in St. Nicholas-square. It is 164 feet long, 64 feet in breadth, and 22 feet high; and is lighted on each side by eleven windows, at an elevation of 20 feet from the ground; and by the same number of entresol windows, placed directly over these side windows, at a 12-feet higher level. Above the market is the music-hall, 170 feet in length by 64 feet in breadth, and 45 feet high, approached by four separate entrances, having stone staircases, to the hall. It has been suggested that the best mode of lighting the hall by night will be by sunlights, the method adopted at the Free-trade Hall, Manchester. The new music-hall will accommodate about 3,500 persons.

**Clevedon.**—National schools are erecting at Clevedon, a small and healthy watering-place, 12 miles from Bristol. They have been much wanted, and are being built by private subscription; Sir Arthur Elton, bart. M.P. for Bath; the Rev. Mr. Braikenridge, Mr. Jerdone Braikenridge, and Mr. Conrad Tinsel, of Clevedon, each subscribing 100l.; and by a grant from the Committee of Council on Education. Each of the schools (which are for boys and girls), is 45 feet by 19 feet; with a residence for the master and mistress. The materials are the fine magnesian limestone of the vicinity, with ornamental tiles, in colours, for covering. The style is Early Decorated Gothic. Messrs. Pope and Bindon, of Bristol, are the architects.

## CHURCH-BUILDING NEWS.

**Cheshunt.**—The new Congregational Chapel in Crossbrook-street was opened on the 8th instant. It is built in the Decorated Gothic style, with tower and spire 85 feet high. The interior of the chapel is about 60 feet by 40 feet, and will seat about 400 persons; and there is a gallery under the large window which will hold about 100 more. The roof is open, the rafters coloured and varnished; bays in the length of the building, each bay having a pointed stone window in the centre. The organ is placed in an arched recess on the south side of the chapel. The pulpit is of stained deal on a stone base, and stands on a pillar, surmounted by an ornamental communion railing. Behind the pulpit is an arch, forming a recess, across which is a carved screen, and above the screen a small trefoil window in stained glass, representing the Rose of Sharon and the Lily of the Valley, the floral emblems of our Saviour. Above the arch is a wheel window with stained glass of deep blue, relieved by orange and ruby. The architects are Messrs. Landor and Bodell, and the builders, Messrs. Dove (Brothers). The total cost of the new building is about 2,000l. 1,000l. of which has been paid.

**Tunstall.**—The new chapel of the Methodist New Connection body at Tunstall has been opened. The front of the structure is of stone. There is a recessed colonnade, with a main and side entrances; and two pillars, 2½ feet in diameter, of the Ionic order, support a pediment, enriched with frieze work and cornice. In the interior there is a gallery at the end opposite the pulpit; and at the back of the pulpit a window, filled with stained glass. The chapel, which will seat between 500 and 600 persons, is heated with hot water, and lighted principally by two sunlights in the ceiling. The designs for the building were prepared by Mr. J. T. Fairbank, of Bradford, and the work has been executed by Mr. F. Batty.

**Llanthony Vach (Monmouthshire).**—The parish church of Llanthony Vach, which has been lately rebuilt, was consecrated on Tuesday before last, by the Bishop of Llandaff. The church had fallen into a state of decay, and has been restored in accordance with the original style, which is Gothic of the perpendicular period. Such of the old work as would allow of it has been replaced, and the additions made to correspond therewith. The church consists of a nave with a western bell turret, and south porch and chancel, with open timber roofs covered with stone tiles. The external and internal dressings are of freestone, and the gables are coped and surmounted by crosses. The east window is of three lights, with arched tracery head, and the rest of the local square-headed character. The nave is fitted with loose benches, pulpit, and font, and the chancel with stalls for the clergy, lectern and altar table. The cost of the whole of the works has been about 400l. The restoration has been effected from the designs of Messrs. Pritchard and Seddon, the diocesan architects, by Mr. Thomas Williams, builder, of Croesyceiliog.

**Sheffield.**—St. John's Church, the foundation stone of which was laid on the 20th November, 1856, is approaching completion. The building is erected, the contractors for the mason's work have completed their contract, and all that remains to be done will be the plastering and fitting up of the interior. A stone-gabled bell turret has been erected over the chancel arch. The building, it is estimated, will cost about

2,000l. of which about 1,800l. have been collected. The site was presented by Mr. Edw. Newman. The style of architecture is the Geometric Middle-Pointed, and the total internal width of the edifice is 45 feet, while the length is 106 feet; the height of the nave, to the apex of the roof, being 56 feet. Accommodation will be afforded to 600 persons.

**Barnsley.**—The successful competitors for the several branches of work in the erection of a new church, in Worsbrough Dale, near Barnsley, are Mr. Taylor, stonemason; Mr. Hunt, joiner and carpenter; Mr. Wm. Brown, plumbing, glazing, and slating; Messrs. Jenkinson and Hall, plastering; and Mr. Charles Rogers, painting and staining.

**Edinburgh.**—The foundation stone of Dr. Alexander's new church, in Merchaut-street, has been laid. The building is designed by Messrs. Hay, of Liverpool. According to the *Caledonian Mercury*, it will have a tower and steeple of an altitude of 120 feet, and the main building will be of Byzantine character. The cost of erection will be about 10,000l.

## THE JOINERS OF MANCHESTER AND LONDON.

HONOURED SIR,—Having seen in your impression of last week a letter from a Manchester Joiner, complaining of what he calls the injustice of the builders of Manchester, I have been so forcibly struck with the wide difference between their case and ours, I could not withhold making a few observations relative to the cause of their strike.

I am a London joiner, and twenty years a journeyman: I might, therefore, be supposed to know something of the state of trade, and also the mind of London joiners respecting the Manchester strike. I do hope that you will, through your valuable and widely-circulated journal, tell them that we think it perfectly ridiculous to dispute with masters about one, two, or three hours' work in a week, but in the name of (to use the words of the Manchester joiner) *common sense*, let them accept of any reasonable offer, and go to work. In the name of humanity, I would say, do not bring your labour to London. To give our Manchester fellow-workmen some idea of the present state of the building trade in London, I will mention a case in point where I am now employed. — Park, in Islington is the scene of operation. Mr. — is the architect and builder. All is carried out under a foreman in the usual way, and the property is first-class. The work is let at prices so low, that we are obliged to work from six in the morning till eight at night, not earning more than one pound four shillings per week. What will our Manchester Joiner think, when I tell him we have to make a 2-inch double-moulded door, 7 feet by 3 feet, for five shillings; also, 2-inch circular sashes and frames, of large dimensions, at eight shillings per opening; boxing shutters, &c. equally low.

I will not further infringe upon your valuable space, but subscribe myself your humble servant,

THOMAS PREEDY.

**THE STRIKE OF JOINERS AND BRICKLAYERS AT MANCHESTER.**—We are glad to learn, that shortly after the insertion of the communication in our columns from one of the workmen on strike, to which we appended a note on the subject, the joiners agreed to submit the matter in dispute to arbitration, and named Mr. Alderman Heywood as their arbitrator. The masters named Mr. Alderman Bancroft on their part; and the arbitrators shortly thereafter decided that the men should accept the offer of the masters, that the resumption of work on the understanding that fifty-eight hours in summer and fifty-five hours in winter be the weekly time given to work. This unfortunate strike, it is to be hoped, is therefore at an end, as the men are said to have resumed work on the above understanding.

## PROCEEDINGS UNDER THE METROPOLITAN BUILDING ACT.

DIVISION OF WAREHOUSES CONTAINING MORE THAN 216,000 CUBIC FEET.

At Guildhall, a few days ago, Mr. John Jay, the contractor, was summoned to answer the complaint of Mr. George Smith, the district surveyor for the southern division of the City of London, for omitting to comply with the Metropolitan Building Act of 1855, in the erection of premises belonging to Messrs. H. E. and M. Moses, merchants, situated in Cannon-street West, after due notice had been served upon him, requiring him to do certain things in compliance with the above Act.

Mr. Bodkin, in support of the summons, stated that the building was commenced in September, 1856, but the notices required from the builder were not supplied until some time after, and, upon the district surveyor viewing the premises, he observed indications in the party-wall running from the basement to the ground-floor, which induced him to suppose the wall



was intended to be carried up to the top of the building, and if that had been done there would have been no complaint, as the builder would then have complied with the Act of Parliament, which requires that no building used as a warehouse for the purposes of trade should be allowed, where the number of cubic feet exceeded 216,000, without a party-wall. But, by the omission complained of, there was an undivided space amounting to about 350,000 cubic feet, which was clearly an infraction of the Act in question.

Evidence was then given of the service of a notice by the district surveyor upon Mr. Jay, the builder, requiring him to build up the party-wall, the date of that notice being the 12th of June last, and of his non-compliance with the Act of Parliament up to the present time.

Mr. Hawkins, in reply, contended that, as the building was completed, Mr. Jay's contract was at an end, and consequently he was no longer "the builder engaged in erecting" the premises, within the meaning of the Act. The premises were completed in May last, and the notice from the district surveyor was not served until June, and the summons was not taken out until nearly six months after that notice. It was *laches* on the part of the surveyor, and it would be a hardship if Mr. Jay was to be liable at any time to the penalties of this act for any irregularity in any building he might have erected, when it was the duty of the surveyor to point out such irregularity at the time, and before the completion of the building. If the magistrate made an order upon him, it would be requiring him to do an act which the law forbids; for, if called upon to make the necessary alterations, Messrs. Moses would not permit it, and Mr. Jay would commit a trespass, for which he would be liable to an action, if he obeyed the order.

Alderman Chalfis said he had read the Act carefully, and after giving his most considerate attention to the evidence and the arguments advanced, he felt it his duty to dismiss the summons, and he did so on the ground that proper notice had not been given while the building was in progress. He could not help remarking, also, upon the time allowed to elapse before the summons was taken out.

An application for the expenses of the defence was refused.

District surveyors are in this unfortunate position, that if they act rigorously in accordance with the words of the Act, they are termed tyrannical, and abused by those who are not acquainted with the law; while if they seek by repeated requests and long waiting to avoid harsh measures, they are upbraided for neglect of duty.

#### OUTBUILDINGS.

At Lambeth, some time ago, John Wood, a jobbing carpenter, was summoned by Mr. Stow, the district surveyor of Camberwell district, to show cause why an order should not be made on him by the magistrate, compelling him to take down a certain building which he, as a "builder," had erected, the same not being in conformity with the provisions of the Building Act.

The building in question (alleged to be a pigsty), measures on plan 14 feet 8 inches by 8 feet 6 inches, and in height to the underside of ridge (of span roof), 7 feet, to eaves, 5 feet 9 inches. The builder, it was stated, availing himself of the boarded fences, enclosing the end and sides of garden at the rear of house, raised two gables, constructed the roof, covered it with slates, and enclosed the front or side, next the dwelling-house and offices, with quartering and boarding, in which were left a doorway and opening for small sash-frame. For default of notice, district surveyor had summoned Wood, and he was fined by magistrate 20s. and 2s. costs.

On appearing to answer summons for irregularity, Wood professed willingness to amend, and stated that on applying for leave to enter the premises, the building owner objected, and threatened that legal proceedings would be taken, in the event of his so doing, for trespass. Thereupon the magistrate expressed unwillingness to make an order on defendant, and suggested that the building owner should be proceeded against (no powers are given by Metropolitan Building Act), or that the district surveyor should proceed to cause compliance in person, and recover from owner.

At this stage of the proceedings, the magistrate gave the district surveyor to understand that in cases where due notice of building had not been given to the district surveyor, he entertain a doubt as to power of the district surveyor to proceed, under the 45th section of the Metropolitan Building Act, against defendant, giving it to be his opinion that such notice should be given to the builder, "whilst engaged in erecting," &c. &c. and that notice of irregularity served on builder, after completion of works, would not hold good. He stated his opinion that the whole Act was a "blundering piece of legislation," and eventually the case was postponed for a fortnight to give his worship time to consider the matter. Ultimately the magistrate determined that the structure should

be pulled down; and the building owner, still objecting to allow Wood to come on the premises, undertook to remedy the irregularity himself.

We have received some somewhat harsh comments on the proceedings of the district surveyor in this case. A little further consideration would probably show our correspondent that the district surveyor would have neglected his duty if he had acted otherwise. If buildings of wood, 14 feet by 8 feet, or 4 feet by 8 feet, were permitted, it would not merely be in contravention of the law (notwithstanding the absence of any definition in the Act of what is a "building"), but would lead to a very dangerous condition of things, and render the provisions of the Act to a great extent nugatory.

#### COMMUNICATION ON RAILWAYS.

In a recent number we noticed a means of communication between the guard and driver of a railway-train proposed by Mr. Symons, consisting of a sliding foot-rail, to be worked along the side of the carriages whilst in motion, and a string signal. Wishing much to see railway officials brought to a sense of duty due to the public and the millions of human beings that are annually hurled along these mighty causeways of intercourse, in adopting a *proper means of securing safety transit*, we now call attention to a mode of communication afforded by Messrs. Myers and Askew's "Railway Signal Brake." The invention consists of a self-connecting oral communicator or phonic rotary tube, which is fitted under the carriages, with spring connecting spring mouth-pieces, together with a whistle and alarums at each end. The spring mouth-pieces placed in the intermediate carriages enable the passengers to converse with the guard, and the guard to answer. When the tube is rotated by the guard, it strikes the alarums, and raises before the driver a signal or semaphore, directing him to stand by his engine, or the driver can do a similar act to the guard. Should the guard be asleep, and not hear the alarums, by an attachment from the signal it will pull him towards the brake-wheel. The rotating is then stopped, the whistle sounded, and the conversation between the one and the other takes place. The whole of the apparatus is worked off the brake screw, which is like the ordinary screw now in use, only working horizontally, and putting on a very rigid brake, which acts on three-fourths of each wheel, and its retarding power can extend throughout the train, if required. Surely, from the numerous inventions relating to this matter, railway managers would have no difficulty in selecting one to meet the existing exigencies.

#### WANT OF SANITARY KNOWLEDGE ASHORE AND AFLOAT.

The public are greatly indebted to you for keeping the sanitary question constantly before them, for by that means you will indoctrinate the rising generation with sanitary knowledge, so necessary for their health, the want of which is greater than many persons have any idea of; for when one sees servants taking the bells off the traps in sinks and areas to let the water run off faster, and by that means allow the stench from the drains to penetrate into the house, I think the public will agree with me that they are indebted to you for keeping the sanitary question constantly before them.

In reference to sanitary knowledge on board ship, I can speak from personal experience of the want of even the slightest attempt at ventilation; and when I recollect the dreadful stench there was between decks with 500 emigrants on board, it almost makes me sick. And what is the condition of ships' crews in the merchant service, with the ship laden to the beams, and the fore-castle half filled with cargo, in which fifteen or twenty men have to eat and sleep, without any ventilation but that which they get from the scuttle-hatch, which is almost always closed? It is, therefore, not surprising that fevers are on board ship, when there is no ventilation. And what would the consequence be of a number of men sleeping in such an atmosphere, if it was not for the bountiful supply of fresh air they inhale when on deck? And although the strong and hardy sailor may not feel it at first, yet I think it must in time undermine his constitution. But what must be the effect on a poor fellow stricken with fever, and who is confined to his hammock, and cannot get the fresh air every four hours that his more hardy shipmate can? And when he wants to moisten his fevered lips, the water in the bucket will make him heave at it, through being slung to a beam, and having absorbed the effluvia which is generated in such a confined atmosphere; for if a bucket of water placed in a fresh-painted house will absorb the effluvia arising from fresh paint, I think water placed in a ship's fore-castle as I have described, will become saturated with the effluvia, and not be fit to drink.

Now, sir, I think these two great evils,—the want

of ventilation and pure water—are very easily remedied. Those gentlemen who so kindly provide sailors' homes on shore should turn their attention to sailors' homes afloat, where the greater part of Jack's life is spent, and insist upon ships being provided with ventilators, which might be easily done if they were compelled to have them. Suppose it was a perforated iron pipe, running from the ship's quarter the whole length of the ship round the fore-castle, that would admit the fresh air without any draught; and an up-shaft over the lamp, so constructed as to prevent a down-draught, to carry off the smoke and any smell. And for the price of a few shillings a ship could be provided with a filter, with an air-tight cover, made to dip into a flange filled with water, which would trap the cover, and might be slung in the place of the bucket, now in use; and then the crew would drink pure and tasteless water. A WORKMAN.

#### THE COMPETITION DESIGNS FOR GOVERNMENT OFFICES.

##### ARCHITECTURAL INSTITUTE OF SCOTLAND.

The rewarded designs for proposed Government offices are now being exhibited in George-street Hall, Edinburgh. At the annual meeting of the Architectural Institute of Scotland, held a few evenings ago, Mr. Matheson, of her Majesty's Board of Works, read a paper with reference to them. In the course of it he read a letter from Mr. Burn, one of the judges, which gave some little information as to the proceedings of the judges.

Mr. Burn said, "Out of the 218 designs, the judges selected sixty-seven for further consideration and for a report upon them by the assessors, Messrs. Angell and Powall, to whom they were remitted to ascertain how far they had complied with the instructions issued by Government; and during the period of this remit, nine other designs were added to the sixty-seven, making in all seventy-six designs in the selected list, which, thereafter, the judges examined in detail, accompanied by the assessors, and finally out of that number made choice of the designs which appeared to them entitled to the premiums offered. I have no means of ascertaining whether any designs were rejected as being too late of arrival. The designs were all hung and exhibited to the public before the judges were appointed, who had nothing to do with the arrangements of the Board of Works; and as no estimates were required from competitors, and none accordingly were given, it was no part of the duty of the judges either to consider the cost of the buildings, or offer an opinion as to their probable expense. In fact, neither competitors nor judges were in any shape required to make the probable cost a matter of consideration."

Mr. Matheson said at the conclusion of his paper,—"These designs have now become the property of the country. Whether they be carried into execution or not, we highly appreciate their merits, which do infinite credit to their authors. They will be preserved as valuable memorials, testifying to the present advanced state in this country of the true principles of architecture in its most admired styles and orders, and which it is our privilege, our duty, and interest diligently to study."

It has been suggested, that during the exhibition of the drawings, separate papers on the style of architecture of each design should be read by various members of the council.

##### INSTITUTION OF CIVIL ENGINEERS.

At the meeting on the 8th instant (Mr. Robert Stephenson, M.P. in the chair), the paper read was "An Account of the Steam Ferry over the River Nile, at Kaffre Azzayat, Egypt," by Mr. T. Sopwith.

This ferry was situated on the line of railway extending from Alexandria to Cairo, and was about midway between those places. It was intended to convey, temporarily, until a more permanent and fixed structure, now in course of erection, could be completed, the railway trains and engines between Kaffre Luis and Kaffre Azzayat, towns situated on opposite banks of the river Nile.

In the discussion, the cost was stated to have been 18,000*l.* including the jetties at both ends, carried on Mitchell's screw piles, with protecting cylinders at the extremities. The method of sinking the cylinders was by Hughes's pneumatic plan of using a "plenum" instead of a vacuum. The mode of attaching the chains on the two shores was by having weights rising and falling within a cylinder, at each extremity, to compensate for the drag upon the chains.

As an illustration of the mode of management of the line, it was stated that at one period there was only one train each way every other day, although the natives had evinced a great desire to travel, and the line connecting towns containing large populations. A hope was expressed that contact with the energetic engineers, in the service of the Pacha, would in due



time break down such dilatory habits and perverse adherence to antiquated customs, and that the benefits anticipated from the establishment of the railway would be realised.

In the construction of the machinery of the ferry, great credit was awarded to the late Mr. C. H. Wild and Mr. Dempsey for the details of the machinery; to Mr. George Robert Stephenson for the method of lifting the platforms; and to Mr. Rouse and Mr. McLaren for putting together and erecting the whole, and making it work thoroughly well.

#### GLASGOW ARCHEOLOGICAL SOCIETY.

##### THE CATHEDRAL.

THE members of this society and their friends, including many ladies, met last Saturday in the cathedral. The place of rendezvous was the Chapter-house, where, shortly after twelve o'clock, the chair was taken by Mr. Roched. After the transaction of the usual private business of the society, the chairman delivered an address, in which he explained the object of the meeting, and the proposed order of proceedings, which was, that they should examine the crypt, under the guidance of Mr. Honeyman, the choir, Lady Chapel, and Chapter-house, with Mr. Roched, the nave with Mr. Baird, and the exterior with Mr. Bell.

Before leaving the Chapter-house, Mr. Honeyman pointed out, with the aid of diagrams, the most striking characteristics of the varieties of Gothic architecture which were practised during the twelfth and thirteenth centuries, in order that those present, who had not studied the subject, might be able intelligently to follow his remarks when explaining the peculiarities of the crypt and the evidences of its antiquity. The meeting then adjourned to the crypt, where the first object which claimed their attention was a painted notice, intimating that that part of the edifice was erected in 1175. Mr. Honeyman showed the absurdity of this statement, by comparing drawings of details from Jedburgh Abbey, the Galilee at Durham, and other buildings erected about that period, with the comparatively late details of the crypt. He said that he would not have considered it necessary to occupy the time of the meeting by any reference to this subject, were it not that the authorities still persisted in misleading visitors by these incorrect notices, which are prominently displayed in the various parts of the building; and he suggested that the society should represent to the custodians of the cathedral the propriety of altering these descriptive cards. Several members expressed their concurrence in these views.

In the choir the chairman gave a brief historical sketch of that part of the building, and commented on its more prominent architectural beauties. He also adverted in eulogistic terms to the alterations recently completed under the direction of Mr. Matheson, architect to her Majesty's Board of Works for Scotland.

Mr. Baird delivered an interesting address in the nave, in which, *inter alia*, he called attention to the gradual change which took place in the style of Gothic architecture towards the close of the thirteenth century, as exemplified in that part of the cathedral, and the gradual development of tracery as exhibited in the windows.

The meeting then made a survey of the exterior and the site of the ancient archiepiscopal palace, which seems to have been a place of considerable strength.

#### DRAWING-ROOM ORNAMENTS.

As the chief object of your journal is to improve the public taste in everything connected with dwellings—from digging the foundations to finishing the apartments,—I forward you a few hints on drawing-room ornaments.

The variety of ornaments frequently spread over the surface of drawing-room tables and shelves, or which may be found disseminated through the general sitting-room, often serves as an index to the mind and character of the individual to whom they belong. Our appreciation of beauty entirely depending upon our education, the amount and general tendency of that education may be as unmistakably traced in our homes as in our conversation. One individual will think it necessary to have ornaments either costly in material or elaborate in workmanship, while the eyes of another will as satisfactorily rest upon the simplest of Nature's works. If the amount of pleasure afforded by these two extremes could be accurately measured, I doubt not that the latter would greatly preponderate over the former. Why? Because the resources for contemplation are more extensive, and of a higher character. The mind that would dwell with delight upon a fresh-cut cabbage-leaf with a dew-drop glistening on its waxy bloom, would indeed be envied by that which sought to display the best selection from Soho Bazaar, could it for a short time investigate all the phenomena which combine to form that commonest produce of the kitchen-garden.

Money will not purchase the power of doing this; but it is the rich reward of the labourer in the field of science. Let me, therefore, recommend those who are entering life, and expecting some day to want "drawing-room ornaments," to choose the cheapest and most delightful mode of procuring them; and, although they may not exactly select the cabbage-leaf, the same course of study which teaches them to appreciate that, will secure to them an endless variety of beautiful things to charm the eye and delight the understanding.

MATER.

#### DECIMAL STANDARD FOR ADMEASURE-MENT.

HAVING noticed in a late number of your paper some remarks on decimal calculations, it brings to mind some ideas that I have entertained for several years of the great desirability of adopting a decimal standard of admeasurement. It would save much trouble to surveyors, engineers, and other scientific men. The following plan seems calculated to meet the purpose: if not, some member of the profession may probably suggest an improvement. To interfere as little as possible with the present scale, I take the inch for a standard.

1·000 rods,

1·00 feet,

1·0 inches,

or, 10 inches, 1 foot; 10 feet, 1 rod;

and, to assimilate this with the present measures, one foot, or one yard lineal, would be 1·2 of decimal measure; or a running measure of any number of feet, say 30, could be reduced to old measure by adding a cypher and dividing by twelve, thus:—800 in. ÷ 12 in. = 25 ft. duodecimal measure.—S. J. BARBER

#### THE SUFFOLK-STREET GALLERY.

THE advertisement of the Architectural Society in the *Builder* of the last and preceding weeks contains an error, which I trust you will do me the favour to correct. It states that "the repairs of the large room (the Gallery of the Society of British Artists) seem likely to be incomplete by the 1st of December." This is scarcely just towards the architect and the society. There have been no repairs of the gallery. The roof has been entirely rebuilt (a portion of the walls also), and upon a principle, both as to its construction and mode of lighting, totally different from Mr. Nash's work (the former roof), which, although raised with a cost unlimited, both as to labour and material, was so essentially defective in the first principles of construction, that it was found unadvisable to attempt to repair it.

The subject of construction, in respect to the lighting of galleries for pictures and sculpture, has of late acquired an interest and attracted public attention, from the general defectiveness of our public galleries in this respect, and their inferiority to most of those of the continent, as well as from the papers upon the subject, published of late years by Sir Charles Eastlake, the more elaborate ones by Mr. Pyne, and the recent lecture delivered at the South Kensington Museum by Mr. Redgrave. In erecting the new gallery (for such it really is) in Suffolk-street, the true principle of lighting a gallery has been attempted to be carried out. The Government building at South Kensington exhibits an advance in the right direction as to the mode of lighting, although, in respect to architectural symmetry or beauty, it is not superior to ordinary railway stations.

F. Y. HURLESTONE.

#### DAMP HOUSES.

In looking the other day at some dwellings which had not been long erected, in a comparatively dry and lofty portion of the metropolis, the ravages of damp were seen to reach even to the first floor, and after hearing the complaints in consequence, we were told how papers and books became mildewed, that the paint and other covering of the walls peeled off, how the linen in drawers was not safe of rusty smells, the aged, and indeed those not so old, having sometimes sharp hints of rheumatism, children constantly catching colds, and other troubles.

There are not many worse things than a damp and mouldy house. It is an ancient evil, and although damp is one of the chief destroyers of house property, it has not yet, in many cases, found a remedy. When thinking of these matters, we remembered the particular signs of leprosy in a house, and the means of cure mentioned in the 14th chapter of Leviticus, beginning at the 34th verse, part of which we quote:—

"When ye be come into the land of Canaan, which I give you for a possession, and I put the plague of leprosy in a house of the land of your possession,"—

The owner of the house is ordered to tell the priest, saying,—"It seemeth to me there is, as it were, a

plague in the house." The priest issues a command that they empty the house before he goes in to see the plague, "that all that is within the house shall not be made unclean." If when the priest looks upon the walls he finds "hollow strikes, greenish or reddish, which are lower than the wall," he then shuts up the house for seven days; and if, on his return, he finds the "plague be spread on the walls of the house," he commands that all the stones in which the plague is shall be taken away to an unclean place beyond the city, "and he shall cause the house to be scraped within round about, and they shall pour out the dust that they scrape off without the city, into an unclean place, and they shall take other stones and put them in the place of those stones, and he shall take other mortar, and shall plaster the house." After this precaution, if it is found that the plague comes again, the priest shall again examine it, and if it is found that the plague has continued to spread, then "it is a fretting leprosy in the house—it is unclean, and he shall break down the house and the stones of it, and the timber thereof, and all the mortar of the house, and he shall carry them forth out of the city, into an unclean place. Moreover, he that goeth into the house while that it is shut up shall be unclean until the even; and he that lieth in the house shall wash his clothes, and he that eateth in the house shall wash his clothes."

We have met with instances at home in the present day of diseased dwellings of various sizes and conditions, which very nearly approach the accounts of the houses from which it was ordered according to the Sacred Writings that all the inhabitants should depart. We have noticed the efforts made to cure the "dry rot," as it is called in large structures, the removal of the diseased and introduction of fresh materials,—all this, however, without certain effect, until the house and neighbouring ground have been deeply and thoroughly drained. A few years since, as was reported at the time, although the old Church of St. Pancras had not long before been restored, the place was attacked by a rot, which rapidly destroyed the wood-work and disfigured the wall: the flooring and wood casings were covered with long mould and fungi; and the whole interior was pervaded by a deadly and offensive smell. It was in time found that the church was not fit for occupation, and on search being made for the cause, it was discovered that the surrounding ground was damp: the ground had been raised, by the interments of the dead, to a considerable height above the floor of the edifice. The drip from the roof had not been thoroughly carried away; and on opening up various parts, the vaults were found filled with water, which had drained from other graves. It is evident that, under such conditions, it was as necessary to close Old St. Pancras as it was the dwellings in the East. Effective drainage, however, did its useful and certain work; and but for that, this church must soon have become a ruin, unfit for use.

#### TRIFORIUM.

On the meaning of the term *Triforium*, Mr. James Parker writes as follows in the November number of *Notes and Queries*:—

Seeing in a late number a communication on the origin of this word, reminded me that in the year 1852 I had occasion to collect notes upon the subject for a paper which I read before the Oxford Architectural Society. The derivation was evidently a mystery. One author only had used the word, namely, Gervase. He either invented it, or, as is more probable, received it from the workmen engaged on the cathedral. Ducange I found held to the theory of *tres-fores*; but unfortunately the *triforia* Gervase was describing had two or four openings. In taking a survey of all our cathedrals, three openings are the exception rather than the rule. Ducange also, as I conceive without authority, gives as the Greek equivalent *τρίθρον*, a word used by Macarius, but with a very different meaning. It was the antiquary Sumner who suggested the notion of the Latinization of "thoroughfare."

First, I attempted to determine to what Gervase applied the name. In a careful examination of his account of Canterbury Cathedral, he evidently alludes, in the description of the fabric as it stood before the fire, to what we now call the "clerestory gallery." He speaks of "obscure fenestre" above the arches, but again, above these, the "Vna que Triforium appellata est, et fenestre superiores." In other words, he describes a "blind story," and above is the "clerestory."

In the description of the cathedral, as rebuilt after the great fire, he says, "the architect intermingled the lower triforium from the great tower to the afore-said pillar with many marble columns, over which he adjusted another triforium of other materials and also the upper windows." In other words we have two *triforia*. What was the difference in construction between the two fabrics? I presume, judging



from other early Norman examples, that the "obscure fenestra" afforded no "via," but that in the new building (the same as now standing), there was a perfect passage in the lower as well as the upper triforium. So far as to the application of the word: beyond this is conjecture.

The suggestion which I then threw out (the five years which have elapsed, I admit, have somewhat diminished my affection for it) was that the *tri* was but the scribe's contraction for *turri*, and that *forum*, as has been shown by Mr. Phillott, might well mean a passage: moreover, that Gervase particularly mentions that it was a passage, and that where there was no passage, he implies there was no triforium. I laid stress upon his speaking of "the triforium from the great tower as far as a certain pillar,"—that, in conclusion, all triforia lead from the different staircases to the tower, and nowhere else (or certainly all clerestory passages do, which I consider, according to Gervase, to be the triforia *par excellence*); and that in the case of central towers, with aisles and transepts, as in nearly all our cathedrals, there is no other way to the tower but along the lower-passage, or triforium.

I will not trouble you with the uses to which both upper and lower triforia have been at different times applied, as I am afraid they throw no light upon the origin of the word. At the same time I think it a subject well worthy of investigation; and perhaps, if you insert this, some of your numerous correspondents may be able to afford information as to their employment, and if any are used for practical purposes at the present day.

#### ST. JAMES'S-PARK: THE ORNAMENTAL WATER AND THE STEAM-ENGINE FOR PUMPING WATER.

THE metropolitan public and the general public of Great Britain must be greatly obliged to Sir B. Hall for the excellent improvements made in St. James's-park, and the metropolitan parks generally. But what can have induced Sir Benjamin to place an abominable puffing, snorting, smoking, high-pressure steam-engine, on the ornamental island, at the east-end of the ornamental water? "To pump water from the new well for use in the lake," may be the reply. That fresh water is necessary all must allow, and few will find fault with any saving of money between the present cost of pumping and the former cost of purchasing water from one of the water companies, if the pumping can be carried on without noise and without smoke: the present turmoil and filth never can be sanctioned for a continuance. Fortunately, neither the noise nor the smoke are necessary. A compound engine (high-pressure and condensing) will double the power of the steam, work without noise, and save half the fuel; and coke should be used, not coal. If Government will not attend to cleanliness and comfort in such a place as St. James's-park, how can the public be asked to abate the nuisances of noise and smoke in manufacturing districts?

CIVIL ENGINEER.

#### WELLS CATHEDRAL.

SIR,—Seeing a letter in the *Builder*, of November 27, respecting the alterations, or rather what is almost facetiously called "the restoration" of portions of England's proudest piece of symbolism, and most exquisite work of art—Wells cathedral; and having recently spent a few weeks in that quiet city, "The drip and tinkle of whose fountain may be heard on the Mendips," I am in a position to know something of the state of the parties referred to in the said letter, and I very much fear that the protest therein is not strong enough, and will require to be repeated before it is taken notice of.

Will it be believed that the surveyor employed by the Dean and Chapter, is no architect at all? Ye shades of Britton and Pugin, arise! Ina and Giso, come forth! and once more enlighten thy supine descendants. Give ear, ye Society of Antiquaries, and hear the wail of art mal-treated by barbarous hands! Will ye stand supinely by, and see that glorious work of Joceline de Welles—the world-renowned west front, tortured by a tailor? Incredible veyor, to which was also added auctioneer. Yes, this as this must appear to your readers, such is the artist to whom the very delicate work of restoration is committed by the Dean and Chapter, to whom he is a salaried surveyor. I have myself examined the work of restoration when in progress under his supervision, and was, indeed, much grieved by the despoliation going on, arising of course from the ignorance of the architect on such matters. The masons were doing their work by contract, and were evidently making the best of their bargain. The Dean and Chapter seem to be following the very questionable wisdom of the poet,—

"Nor proudly untought sentiments reject."

I do sincerely hope, that though Beauty sleeps in easy repose on this relic of the past,—

"In which the architect built his life,  
And with him toiled his children, and their lives  
Were builded with his own into the walls,"—

she must be roused by one in whom lives the awakening breath of thought and knowledge; and I also hope that the Dean and Chapter will not, in their retrenching mania, cause any more Portland cement monstrosities to take the place of stone, in the exquisite west façade, much of the restoration being done with that material. I beg, therefore, to suggest (through your columns), that the Society of Antiquaries (of which I am a member), bestir themselves, and address a memorial to the Dean and Chapter on this very important subject.

F. S. A.

Knowsley-park.

#### BRICKS, ANCIENT AND MODERN.

THE art and practice of brick-making are, no doubt, as old as civilization. A full history, with diagrams of the several forms and dimensions, would have special interest,—will no one take up the subject? Egypt, Assyria, India, Persia, China, and Europe will furnish splendid examples of bricks and brickwork. There may also be something gleaned from Mexico and from Peru. There have been solid bricks, and even hollow bricks, from a remote period. The Romans carried brickmaking to great perfection, and probably first introduced the art into Great Britain, as also on the Continent generally. They made hollow bricks on block moulds, and used them for hot-air for rooms and baths. There are samples in the Museum at Rome, and at Newcastle-upon-Tyne. There are also radiated (that is arch) bricks, of the Roman period, at Newcastle.

##### Roman Bricks at Newcastle.

6½ in. × 3½ in. × 1½ in. } Red brick clay, very rough,  
8 in. × 4 in. × 1½ in. } and bent in digging.

##### Roman Arch Bricks.

7 in. × 6 in. × 2 and 1½ in.  
7½ in. × 8 in. × 1½ in.  
10½ in. × 10½ in. × 1½ in.

11 in. × 7 in. × 6½ in. hollow brick, ¾ in. thick, so that the space is 5½ in. × 4 in. This hollow brick has been used for a bath flue.

The following dimensions and prices may be useful just now, as there will probably be work for Englishmen in the East soon.

Prices of Tiles and Bricks at Constantinople, 1855:  
Bricks, 12 in. × 6 in. × 2½ in. at 600 piastres per 1,000 = about £5 0 0

These tiles are light coloured, and are used for floors.

##### Best Quality.

10 in. × 5 in. × 1½ in. at 350 piastres	
per 1,000 =	£2 18 4
9 in. × 4½ in. × 1½ in. at 370 piastres	
per 1,000 =	3 1 8
9½ in. × 5 in. × 1½ in. at 350 piastres	
per 1,000 =	2 18 4

##### Common Quality.

15 in. × 15 in. × 1½ in. at 320 piastres	
per 1,000 =	2 13 4
10 in. × 10 in. × 1½ in. at 200 piastres	
per 1,000 =	1 13 4

##### Tubular Pipes, hand made.

Common red earthenware, poor in quality.

3 inches diameter, at 1½ piastre each	3d.
6 inches diameter, at 2 piastres each	4d.
9 inches diameter, at 4 piastres each	8d.
13 inches diameter, at 8 piastres each	16d.
15 inches diameter, at 10 piastres each	20d.

The pipes are each 12 inches in length, and are made with spigot and faucet ends.

Bend-pipes or curves are not made, but all junctions are with sharp elbows. The prices are as under:—

3 inches diameter, at 2 piastres each	4d.
6 and 9 inches diameter, at 4 piastres each	8d.
13 and 15 inches diameter, at 9 piastres each	18d.

N.B. The piastre is taken as of 2d. value, English money. The rate of exchange, however, varies.

#### TRADE PRICE-LISTS.

THE current number of the *Builder* is not the first in which it has been suggested that trade price-lists, and circulars relating to building matters, should be issued of a uniform size. Might not the idea assume a more practical shape if the Architectural Exhibition committee required exhibitors in the "Materials Department," in the forthcoming exhibition, to comply with a rule framed for the purpose?

Small quarto, say 10 inches by 8 inches, leaving a margin of 1½ inch to the left of the paper for binding, if desired, would be a convenient form.

E. B.

#### THE WORD "GAS."

SIR,—I am glad that your correspondent, "J. B." (in a late No. of the *Builder*), has publicly put the question with respect to the spelling of the plural of the word commonly written *gas*, because it affords me the opportunity of pointing out what I consider the anomalous heterography of this word.

If there is one rule with respect to English orthography which is clearer than another, and which admits not of exception, it is that all nouns substantive ending with the sound of *s*, preceded by a short accented vowel, double the final letter. Such words are, *lass*, *class*, *glass*, *grass*, *stress*, *dress*, *redress*, *excess*, *mass*, and hundreds of others. Indeed, there is scarcely an exception to this rule in the whole English vocabulary.

The only reason I can conceive for deviating from the general rule in this instance is, that probably we derived the word from the German *chemists*; and it being regarded, on its introduction, as a foreign word, was consequently spelt as in the original. But as it has now become completely naturalised, it certainly ought to be made to follow the analogy of our own language, in conformity with other words derived from the same source; for the words *grass* and *glass* are both spelt in German with one *s*; and precisely for the same reason they spell *gas* with one; and for the opposite reason we ought to spell it with two; namely, they pronounce the preceding *a* long, while we pronounce it with a short quantity.

I hope that it is not yet too late to see this alteration universally adopted, especially if it should have the sanction of the *Builder* and other influential journals. The public eye would soon get accustomed to the alteration, and one anomaly, at least, would be erased from the long list which at present disfigures our language; and thus would "J. B.'s" question be practically and consistently answered.

B. J.

#### RECENT PATENTS.\*

THOMAS ROBERT WINDER, DOVER.—*Constructing Submarine Works*. Dated April 11, 1857.—This invention relates to a mode of simplifying the construction and the placing of large blocks of concrete or masonry to form the foundation or underwork of piers, harbours, and other like submarine structures. To attain this end the patentee forms a floating caisson of plates of cast or wrought iron bolted or riveted together, and this floating vessel (which is open at the upper part) he brings over the spot which is intended to receive a large block of concrete or masonry. Having moored or otherwise secured this floating vessel in the required place, he discharges concrete therein, or he builds up brick or stone work therein as required, and by the accumulation of such building materials in the vessel, the latter is sunk to a given depth in the water. He next builds up the sides of the vessel by adding plates of iron to the upper part of the vessel, and thereby increases the capacity and depth, the upper edge of the vessel being raised considerably above the surface of the water. When this is effected, he continues to throw in concrete or build up masonry within the vessel, repeating the building up of the outer iron casing as the vessel sinks by the accumulating weight placed in it. In this way the caisson or vessel is charged with masonry or concrete until it sinks to the bottom, where it will by its own weight remain fixed and immovable, and form a secure artificial foundation for any subsequent superstructure; or the superstructure may be formed by continuing the building up of the vessel or caisson.

JAMES BIRD SPARKE, and ALFRED SPARKE, Thorncliffe Foundry, Norwich.—*Sawing Machinery*. Dated April 8, 1857.—The first part of this invention relates to that part of sawing machinery which is employed to give motion to the timber under operation, for the purpose of bringing it up to, and keeping in contact with, the saw during the cutting, and of withdrawing it from the saw when the cut is completed. The second part of the invention relates to the mode of driving reciprocating saws, or saws which act upon the material to be cut by successive strokes.

GEORGE WHITE, Laurence Pountney-lane, Cannon-street, London.—*Glass Furnaces*. A communication. Dated March 26th, 1857.—This invention consists in heating glass-houses, or furnaces for the manufacture of glass, by means of the complete combustion of the gases derived from wood, coal, peat, lignite, anthracite, or any other suitable fuel, the full combustion of the said gases taking place by means of a blast of hot air, the injection being thus regulated that the full combustion of the gases, and consequently the highest temperature, takes place in the central part of the furnace towards the melting-pots. This system of heating is applicable to glass-furnaces of any size, the fire-grates being entirely done away; thus offering an additional space for the melting-pots.

\* Selected from the lists published in the *Engineer*.



**BENJAMIN HORATIO PAUL**, Torrington-street, Torrington-square, London.—*Preservation of Stone, either natural or artificial, also of Cements and other similar compositions.* Dated April 1, 1857.—This invention is effected by applying to the stone, &c., solutions of the aluminates of soda, potash, or of other aluminates, also of the zincates of soda or potash, or phosphates of alumina, or zinc in solution by alkalis; also similar preparations of lead or molybdenum. These solutions are employed either alone or (for the purpose of more effectually filling the interstices or pores at the surface of the stone, &c.) mixed with finely-powdered substances, which are little liable to be affected by the atmospheric influences existing in towns. The substances to be used for this purpose are silica, carbonate of magnesia, baryta or zinc, sulphate of baryta, French chalk, or other similar substances. The material thus introduced into the pores may be coloured by the addition of oxide of iron, plumbago, or other suitable pigment.

**CHARLES PASCELL**, Norwood, Surrey.—*Tile-making Machinery.* Dated April 29, 1857.—This invention relates to the shaping of the ends of tiles, and cutting them off, when produced in lengths, from the squeezing-box or other pressing or forming apparatus forcing the plastic material through a die. The expressing and forming the tile material in lengths is the same as usual. The length of the tile material when expressed or formed is received in rollers, or otherwise supported while being cut in proper lengths, and at the same time having the ends of the tile shaped. The patentee effects this by means of two wires, suitably stretched between two slides, which traverse across the breadth of the tile in guides, which cause the wires to traverse in curves or lines, so as to describe and cut the tile of the proper length, and with the ends of the form required.

**TERTIUS JOHN COOKE**, Wolverhampton.—*Manufacture of Knobs, Roses, and Escutcheons, used for doors, drawers, shutters, and other similar purposes.* Dated May 2, 1857.—The knobs are made partly of brass and partly of sheet iron, or partly of cast iron and partly of sheet brass, or partly of cast or malleable iron and the remainder of sheet iron, and the roses and escutcheons solely of sheet iron. The invention also comprises improvements in ornamenting the same, and also in ornamenting the ordinary description of articles of the same kind which are made of cast or sheet brass, or both combined, by japanning, enamelling, painting, or inlaying them.

**JOHN LESLIE**, Conduit-street, Hanover-square.—*Apparatus for Ventilating Buildings.* Dated May 4, 1857.—In carrying out this invention, an air-shaft is fixed to the ceiling or upper part of a building, in such manner as to rise through the roof, and on the exterior of the air-shaft is formed an enclosed chamber, open at bottom and closed at top, by which combination of parts the heated atmosphere of the building will enter the enclosed chamber around the air-shaft and keep it warm, and will thus induce a rising current through the air-shaft.

#### RECENT AMERICAN PATENTS.\*

**JOSIAH BROWN, Jun.** Buffalo, New York.—*Improvement in Truss Bridges.*—Claim: Providing each of the main and counter braces with two gains at top and bottom, and each of the timbers of the chord with a gain at a point where the braces are applied corresponding with the gains in the braces, and passing the braces thus formed up between the timbers with the gains of the braces in such relation to the gains of the timbers, that when the timbers of the chords are brought together they are combined, and become, as it were, only one piece, no part of which can be operated upon or affected independently of the other, by the downward and upward thrusts common to truss bridges, even if the bolt which passes laterally through and intersects each set of braces and the timbers of the chord were removed.

**GEORGE S. AVERY**, Lewisboro', New York.—*An Improvement in Segmental Truss Bridges, &c.*—Claim: An improvement in segmental truss bridges, by a combination of the arched top chord, horizontal bottom chord, braces, vertical tie-rods, packing blocks, and self-adjusting shoes, the whole constructed into a segmental truss of greater strength and stability than such as are generally used with the same amount of building material. Also, the combined arrangement of the different parts.

**FRANCIS C. LOWTHROP**, Trenton, New Jersey.—*An Improvement in Iron Truss Frames for Bridges.*—Claim: The straining plate, in combination with the rods, when the latter are connected to the plate, and when the said plate is arranged to receive the vertical or verticals and diagonals of iron truss frame bridges.

**LEMUEL P. JENKS**, Assignor to **GEORGE A. GARDNER**, Boston, Massachusetts; ante-dated Jan. 7.

\* Selected from the lists published in the *Journal of the Franklin Institute*, of Pennsylvania.

**1857.—Improvement in Rock Drilling Machines.**—Claim: The use and application of the india-rubber, when interposed in such manner that its expansive force shall operate the drill in rock drilling machines.

**GEORGE A. GARDNER**, City of New York, Assignor to self and **LEMUEL P. JENKS**, Boston, Mass.—*An Improvement in Rock Drilling Machines.*—Claim: The peculiar combination and arrangement of the devices, whereby the rotation of the mandril and drill, as well as the gradual and proper advancement of both drill, mandril, and frame, or either of them, is effected by means of a single eccentric on the cam shaft.

**WILLIAM VAN ANDEN**, Poughkeepsie, New York.—*An Improved File-cutting Machine.*—Claim: The arrangement of a bed on which the file blank is cut, having a forward positive feed motion, and an independent forward motion against the edge of the chisel, in consequence of the percussion of the hammer, and the difference of the resistance of the metal at the back edge of the chisel, wedging it forward at the time of cutting the teeth of the file to cause their upsetting. Also, the combination and arrangement of the bed on which the file blank is cut, with the triangular feed-gate and side rails of the machine frame. Also, the combination and arrangement of the ratchet-wheel spring, and detent pins, or their equivalents, in combination with the pawls for operating the same. Also, the use of the compound self-adjusting chisel-holder stock, in combination with the chisel, whereby it is held rigidly in its place under the blow of the hammer. Also, the use of the triangular gate as a feed motion to my compound bed, in combination with the apparatus for operating the same.

**HEZEKIAH B. SMITH**, Lowell, Mass.—*An Improved Mortising Machine.*—Claim: 1st. The adjustable compound trestle, when used in combination with a mortising machine. 2nd. The pawl, or its equivalent, in combination with the table, to prevent the action of the chisel from jarring the foot, not intending by this to confine myself to the exact form represented, but adopting any other substantially the same.

**HENRY F. WILSON**, Assignor to self and **HENRY B. WEST**, Elyria, Ohio.—*For an Improved Cross-cut Sawing Apparatus.*—Claim: The radius bars, in combination with the vibrating bars, for the purpose of straining the saw so as to enable me to give the saw a reciprocating motion without guides. Also, placing pins at a greater or less distance apart than pins for the purpose of giving a rocking motion to the saw while reciprocating, said motion to be graduated according to the kind of wood to be sawed.

**THOMAS D. WORRAL**, Lowell, Mass.—*For an Improved Joiners' Plane.*—Claim: 1. The employment of the clamp lever for securing and holding the bit. 2. The clamp lever, as arranged in combination with T strap and nut, for the purpose of regulating and adjusting the bit for cutting, when firmly bedded and secured.

**GILBERT BISHOP**, City of New York.—*For an Improved Rotary Veneer Machine.*—This invention consists in cutting veneers and other thin stuff by a knife, with a circular or curved edge in rotation in the line of its edge, while the log from which the veneer is to be cut is vibrated or turned towards the knife edge as it passes, so that the knife progressively covers the whole top surface of the log, and cuts the veneer by a continuous rotary drawing, thrusting and varying stroke of the edge from point to heel, as the log is presented to and brought in contact with it.

**JOSEPH H. GOODELL**, Bridgeport, Connecticut.—*For an Improved Machine for Straightening Veneers.*—Claim: The reduction or removal of the curve or scroll shape given the veneer in its cut from the log or stick, by the introduction and feed of it endwise, that is, transversely to the general direction of the curve assumed by it in the cut between a roller or rollers, and carrying and pressing apron, arranged for operation together and on the veneer. Also, in combination with the several rollers and endless carrying and pressing apron, when the same are relatively arranged, the adjustable frame to the one roller, to give increased or diminished pressure to the apron against the back of the pressing roller, or interposed veneer.

**GEORGE W. BISHOP**, Brooklyn, New York.—*For an Improvement in Iron Pavements for Streets.*—The object of this invention is to make a pavement for streets of blocks of iron, so formed on their upper surface as to effectually prevent horses from slipping, and permit water with accumulating dirt to run off to the side gutters, and, at the same time, of securing rails thereto for a railroad. Claim: Making cast-iron paving blocks with a series of transverse draining grooves, which, when completed and laid, will form grooves running from the middle of the street towards the side gutters or sewers. Also, forming the surface of iron paving blocks with a series of inclined planes and shoulders, to prevent horses from slipping, while, at the same time, carriages will roll over the surface without serious impediment or concussions. Also, the said series of inclined planes and shoulders, in

combination with the lateral grooves for draining, but which also answers the purpose of preventing horses from slipping. Also, the manner of uniting the iron blocks in laying a pavement by the alternating over and under lapping of the series of blocks, whereby the blocks are enabled to sustain one another, and thereby more effectually maintain the required grade.

#### Books Received.

*Many Thoughts on Many Things:—being a Treasury of Reference, consisting of Selections from the Writings of the Known Great and Great Unknown.* Compiled and analytically arranged by **HENRY SOUTHGATE**. London: George Routledge and Co. 1855.

THIS really is what it purports to be, a Treasury of Reference, and will be found worth its weight in gold by literary men, and those who want materials for thought. As Mr. Southgate justly says, too, it "is not only adapted for occasional reference to any particular subject, but, from the variety of interesting topics, both in prose and verse, which it comprises, it may also afford many an hour of agreeable and instructive reading. We are here conducted, as it were, through a picture-gallery of the first masters,—through a garden of the choicest flowers,—where the social virtues may be promoted, the pleasures of refined intellectually cultivated, and some of the purest delights of which the human heart is susceptible freely enjoyed."

Classification and analysis have been closely observed to give facility for reference to any general subject, and this the searcher will find illustrated in its various phases by, for the most part, distinguished writers. Here and there an anonymous quotation occurs, which might have been omitted without damage to the book; but of this, the little too much, one ought scarcely to complain. It is one of those books in which there is always something to discover. The extent of the collection says much for Mr. Southgate's reading and industry; and the arrangement of it speaks for his taste and acuteness. The dedication to "His Friend and Partner, Joseph Barrett," will serve to remind readers that they have heard of Mr. Southgate before in another capacity,—engaged in "knocking down," rather than building up, books.

What he has now put together is a massive volume of nearly 700 pages, of which the index alone occupies thirty-four. The book is beautifully printed, and does great credit to Messrs. Cox and Wyman, at whose establishment it has been produced. The type is good, and the arrangement of the pages elegant.

*Rudimentary Treatise on the Marine Engine, and on Steam-vessels and the Screw.* By **ROBERT MURRAY, C.E.** Third Edition. London: Weale, High Holborn. 1858.

THIS very excellent treatise by the Engineer Surveyor to the Board of Trade has been revised and considerably altered and improved since its last edition was issued. The practical remarks on the screw and propelling power as used in the royal and merchant navy are especially interesting. Much new and useful information is also compressed into tabular and other forms in the Appendix, and the volume is illustrated by various engravings. We cordially recommend it.

*"Divide et impera:—Statistical Book-keeping; being a Simplification and Abbreviation of the common System by Double Entry; together with Suggestions for the Prevention of Defalcations and Frauds in Banks, &c."* By **F. C. KREPP**. London: Longman and Co. 1858.

THIS is certainly, to all appearance, a very elaborate work on "Statistical" book-keeping; but it must be for regular business-men,—tradesmen, manufacturers, and others,—by affording it a fair trial, or, at least, that consideration which it seems to deserve, to say whether it be sufficiently practical to induce them to discard the system on which they have heretofore gone. The new system, however, does not appear to be so much an antagonistical scheme to that of book-keeping by double entry as a centralisation of that system itself, an abstract and index superadded to it, and over-riding it, as it were; or a master-key to its more detailed and disconnected contents. By means of what has the aspect, at first sight, of a somewhat formidable complication of the ordinary system, we have thus, in effect, a simplification arising out of the rearrangement. It is for practical book-keepers to test the merits of Mr. Krepp's statistical system, and we commend it to their notice as involving the addition of a promising novelty to the established system, which it may be also said to comprise within the comprehensive sphere of its operations. It is said to be the result of fifteen years' personal observation and practical experience, in English, American, and German counting-houses, and we can well believe it to be so.



The book of statistics, or centralized epitome of the business, appears to bring the whole of its transactions within a comparatively small compass, and to be "ultimately made to contain the very essence of a large pile of other books, kept during a period say of ten years, or longer, if required." By keeping out of sight all distracting details of secondary importance, a sort of bird's-eye view of the whole range and drift of affairs, however extensive and complicated, is thus professed to be obtainable.

The author's suggestions with reference to the prevention of defalcations and frauds in banking and other companies also seem to merit attention.

### Miscellanea.

**FROM BROMPTON TO BAYSWATER, *via* PARK-LANE.**—The necessity of skirting round all Hyde-park to reach Bayswater and other districts north of the Park from Brompton, Knightsbridge, Chelsea, &c. to the south of it, and *vice versa*, either on foot by night, or by vehicle at all times, is a great grievance of which we have often complained. The crossing of Hyde-park by a public road, open at all times, has been urged; but interference with the privacy and the integrity of the park formed one main difficulty in the way of such an arrangement. To obviate this difficulty it has been proposed to sink the public road below the level of the park, and this might be done, probably, whatever route were proposed to be taken. A matured plan has been laid before us by Mr. Risdon, of Bayswater, who proposes to open such a road along by the sunk wall of Kensington-gardens from near Victoria-gate, and opposite Westbourne-street, to the present bridge across the Serpentine, close beside which it would pass by an additional bridge, whence it would run to the Kensington-road, a little to the east of Gore House, and opposite the new road leading to "South Kensington" and the Art-Museum. Some such line of road is just what is wanted to obviate the very great nuisance referred to.

**SLIP AT CANNIFF.**—About three weeks since, notice was given that after a certain date no more vessels would be allowed to enter the East Dute Dock, as the contractors intended clearing away the embankment between that portion already in use and the extension just completed. For this purpose the water was turned out of the dock, and the inner gates of the lock were taken up, not being considered sufficiently strong to bear the pressure of water upon them, and another pair was ready to be laid down. The contractors, Messrs. Hemmingsways and Pearson, put on a large number of hands in removing the bank, and it was thought that the work would have been completed in about a month to the satisfaction of all parties. We regret, however, to state that about one o'clock on Tuesday (the water being out) a large portion of the eastern wall gave way, carrying with it the foundation, the tramway, and a quantity of iron ore, which was alongside. The wall for at least sixty or seventy yards is completely gone, the angle where the slip occurred projecting some ten or fifteen feet beyond the level, the stones being separated from each other, and some of the large blocks of forest stone, about three feet thick, being completely smashed—some of them into a thousand pieces. We are told, however, that no fault can be laid to the contractors, but that the heavy weight on the banks, and the support suddenly withdrawn by letting out the water, have been the sole cause. The damage is estimated at between 11,000*l.* and 15,000*l.*, but it is feared that, if another slip should occur, the whole of one side will have to be rebuilt.

**CAMBRIDGE ARCHITECTURAL SOCIETY.**—At the last meeting of this society, the report of the committee was read, which said, amongst other things:—

"It is gratifying to observe the gradual prevalence of an improved taste in the matter of domestic architecture. We allude especially to the new brick house in Trumpington-street, and to those near St. Michael's church, which were the first built after a more picturesque design. We believe that much of this improvement is due to the taste of Mr. R. R. Rowe, the town surveyor.

We now proceed to notice some important works in the county. At Ely, the princely magnificence of the dean and chapter has borne fruit in results which bid fair to render their cathedral pre-eminent in interest and beauty. The east window has been filled with coloured glass by Mr. Wailes, which for brilliancy and clever contrasts of colour approaches the best French glass of the thirteenth century. We are glad to say that of the late bishop's bequest, enough money was voted to enable the chapter to place several new windows in the choir: a work which will shortly be commenced. The reredos has been finished, with the exception of the figure of Christ on the central pinnacle, and is now being gilt and coloured; stone screens have been placed behind the stalls, which are themselves together with the rood screen, shortly to have their panels and their niches filled with the sculptures which have so long been wanting to complete them; the north transept will soon glow with colour, and be further enriched with stained-glass windows and frescoes: nor is this all—it is proposed to board in the roof of the nave, and to execute thereon, under the direction of Mr. T. Stanger, a fresco similar in design to that of the church of St. Mary Magdalene, at Hildesheim, in the kingdom of Hanover, which is now undergoing restoration."

**THE SMEDLEY VIADUCT.**—Signs of instability have shown themselves in this structure, according to the *Manchester Courier*. At the last meeting of the city council a report was presented, which stated that the extra cost for strengthening the viaduct, in consequence of previous failures of bad work, would be 1,480*l.* A larger sum than this, adds our authority, will in all probability be sunk upon the work before it is pronounced safe, and it may possibly have to come down bodily. It is built of brick, and the chief cause which led to the failure of some of the arches is said to have been the imperfect manner in which a portion of the contract had been fulfilled. Additional work to strengthen the principal abutments was added, and the bridge seemed likely to stand in security. These further cracks, however, caused grave doubts to be entertained whether the viaduct will last long.

**DAMAGES FOR INJURY BY A SCAFFOLD.**—At the Manchester County Court, last week, judgment was given in a case of some interest. The action was brought to recover damages for a serious injury caused to the plaintiff's wife, by the falling of a boarding in front of three houses in Oldham-road, Manchester, belonging to a Mr. Gregory, a watchmaker, one of the defendants. The judge was of opinion that the scaffold ought to have been of sufficient strength to have withstood the effects of wind. It appeared that it was Edwards, one of the defendants, who applied at the Town-hall for permission to put up the boarding, but he did not erect it himself. The owner of the property let off the work to various persons—an excavator, a bricklayer, and a carpenter. It did not appear to have been the business of anyone in particular to put up the boarding securely, but it was a fact that Mr. Gregory was the owner of the property, and he paid the joiner by whom the boarding was erected as his servant. This he (the judge) thought was evidence sufficient to make Mr. Gregory liable, and the verdict must, therefore, be against him for 40*l.*

**THE AGRICULTURAL IMPLEMENT TRADE.**—A paper was read on the 9th inst. at the Society of Arts, by Mr. S. Sidney, "on the progress of the agricultural implement trade during the last twenty years." The paper, with a discussion which followed, is published in the *Journal of the Society*, of the 11th inst. Mr. Sidney, in the outset, stated that his object was not to instruct agriculturists, but simply to give that large class who got their meat from the butchers, and their bread from the bakers, without troubling themselves about the origin of either commodity, some idea of the vast amount of mechanical ingenuity and agricultural experience, which has been devoted during the last twenty years, to making inferior soils fertile, and fertile soils more productive, to economising time and labour in every operation of husbandry, so as to keep pace, as far as soil and climate would allow, with the daily increasing demands of our town population. After the discussion, in which several agriculturists and other gentlemen took part, Mr. Sidney, in conclusion, maintained that the time had come for reserving prizes for great and much-needed inventions or improvements, such as steam ploughing.

**PUBLIC DECORATIONS.**—We are told that great preparations are being made for the approaching marriage of the Princess Royal, and that the Chapel Royal is to be re-decorated for the occasion. In glancing the other day at records of some of the state marriages of former days, we were struck, if we may say so, by the ugliness of the decorations. On the marriage of George II. the interior of the sacred edifice was fitted with large crowns, stuck over with wax candles and chandeliers of the most questionable shape. We hope, however, that matters will be managed in a more artistic manner. Royal marriages during the Middle Ages, celebrated in our fine old cathedrals, were splendid affairs, and the city was made gay with tapestry and other rich hangings. We have discussed a good deal of this ancient magnificence. The elegance of the fittings of the Chapel Royal and other localities should be worthy of the age.

**THE ARCHITECTURAL SOCIETY'S ILLUSTRATIONS.**—Sir: May I beg to be allowed to make a few remarks in reference to a review of the Architectural Publication Society's last part, in the *Builder* of the 5th inst. Did the plates, as issued to the members, represent my work as it was drawn upon the stone, your critique would be perfectly just; but so far from such being the case, the drawings have, in the preparation of the stones, or from some accident in the printing, suffered to such an extent as quite to ruin them. My work has hitherto given satisfaction to the Society, and some members of the committee, who saw these on the stone before they were proved, expressed themselves pleased with them. Valuing my reputation as an artist, which would suffer severely were so unfavourable a review of my work deserved, I venture to trouble your columns with this explanation; and, thanking you for your approval of my work in general, I am, Sir, &c.

FRANCIS BEDFORD.

**LAYING SUBMARINE CABLES.**—Messrs. C. and G. Johnson, of Wandsworth, have described to us the model of an apparatus specially designed for laying down wires for submarine telegraphs, now in their hands. They say within a frame about 14 feet long, 8 feet high, and 8 feet wide, are arranged three distinct break-wheels, representing three points of a triangle. Each wheel is provided with a lever and roller, so placed as to act on a point in the circumference, and exert a power opposed to the motion of the wheel, by which its revolutions may be retarded or regulated with precision. The end of a cable once passed through this machine, is taken firm hold of by a peculiarity in the construction of the break-wheels, and may either be hauled in or paid out without a single coil. It is self-acting, the strain imparted being correctly indicated, and can never exceed the prescribed bounds. In laying down a cable in deep water, the quicker the operation is performed the better, as then the wires would not have time to drift away, and consequently unnecessary slack will be prevented. They say their machine could be made to work perfectly well, going 15 knots an hour, or more if required.

**"ART IN ARCHITECTURE."**—Sir: My good friend "Commonsensus" is desirous, through the medium of your columns, to propose for the consideration of "Aristides" a few remarks upon the opinions he has expressed on the subject of "Good Taste in Architecture." He would speak to "Aristides" as follows:—"You say that, 'irrespective of any question as to style, that design *must* be in good taste which, whether viewed in mass or in detail, produces a pleasing, harmonious ensemble.' Now, sir, you must permit me, with all deference, to remark, that your definition is a complete failure. It is true, as far as it goes, but it does not get to the root of the matter. Both 'Donaldo' and 'Rufskinius' would readily give their assent to the truth of this proposition, because they could do so without thereby making any admission adverse to the cause they have in hand, without resigning that undivided sovereignty they have so ably claimed for the style of their adoption. The question is not 'whether or no that style is in good taste which produces a pleasing, harmonious ensemble,' for the affirmative of that proposition is admitted by all, without one dissentient voice. The real point at issue is, 'Whether such and such a design does, or does not, produce an effect that all men ought to call pleasing.' And this is where your definition fails; for combinations of form before which 'Rufskinius' would stand entranced—oblivious of the toils and troubles of this work-day world—wrapped in ecstatic contemplation, and soaring on the wings of harmony to the seventh heaven of delight; these combinations would, in the mind of 'Donaldo,' produce no other emotion but that of unmitigated disgust. Where 'Rufskinius' found nought but

'Music that gentler on the spirit lies  
Than tired eyelids upon tired eyes.'

He would only be conscious of a horrible discord, enough to set his very teeth on edge. Still, I should think, sir, as far as I can gather from the general tenor of your argument, that your opinions are in the main perfectly just and orthodox; and I would, therefore, entreat you to bring your powerful mind to bear once again on the question at issue, and I feel sure you would then be able to furnish us with a definition that may be of real service to us." If, Mr. Editor, you should think it worth while to give insertion to this "mild remonstrance," you would oblige.—R. M.

**THE SOULAGES COLLECTION.**—Lord Granville, the Lord President of the Committee of Council on Education, received a deputation from the Royal Institute of British Architects, with reference to the purchase by Government of the Soulages Collection, on Wednesday afternoon, at the Privy Council Office.

**THE DISEASES OF TRADES: BAKERS.**—On reading Dr. Letheby's annual report and statistics upon disease and death, I find from his investigations all classes have their peculiar diseases, phthisis being the malady of bakers; and the *Times* observes,—"But surely the fact that particular complaints can be so easily apportioned among particular trades justifies the hope that, with ordinary care, their prevalence can be very much diminished." After reading Dr. Letheby's report, I calculated how many journeymen bakers have died, who had worked for me, within the last ten years: the result was to me saddening. My men have generally lived with me some years, but I can count fifteen young men (none forty years of age) who have fallen victims to this bakers' malady, in one form or other of the disease. Now, sir, I know that if bakers would do away with the present unhealthy, dirty, and barbarous manner of kneading bread, our trade, for one, would soon show a more encouraging account in the future reports of the City's chief medical officer. I sincerely thank you for the encouragement you have given me in favourably reviewing my endeavours to promote the sale of pure bread in this metropolis.

C. STEVENS.



# The Builder.

Vol. XV.—No. 777.



HERE are many points in the position of the drainage question at Manchester, other than we have noticed,\* that are interesting and important. The Bridgewater Canal is supplied by the river Medlock; it is stagnant, and more offensive for miles than one of the London sewers. The "entire volume" of the Manchester streams was correctly described by Mr. Rawlinson, in his Report on Altrincham, about the year 1850, as "one mass of fermenting corruption for fifteen or twenty miles down their course." The water is used by bleachers, printers, and dyers; and the

refuse from their works is ejected into the streams. Thus, the tainted water is again used for condensing and other purposes in steam-engines, and is discharged, heated, back into the open or covered water-courses which receive the drainage of the town; "so that a semi-liquid compound is formed, an accurate idea of which no written description can convey." Mr. Rawlinson continues,—"A thick scum coats the surface, upon and over which birds walk; the putrid carcasses of dead animals, dogs, cats, &c. float and rot in the midst; fermentation takes place rapidly, as large bubbles of gas may be seen escaping, and a thick vapour constantly hangs over the entire area." \* \* "When a full water-supply is carried out, and water-closets have become general, some terrible loss by disease may certainly be anticipated, should the present condition of things be continued."

This description, though, as to the worst features, applicable chiefly to the Bridgewater Canal, gives a fair representation of the state of the streams, and as they are to this moment. Indeed, the water in the Irwell appears much less in volume than formerly,—though floods are said to be greater. One reason for this latter circumstance—whether the true one in the case or not—seems to be well deserving of consideration. It is that, by improved land drainage, water now reaches a stream quickly, causing a sudden rise,—instead of gradually, so as to maintain the stream at an equable level. The rainfall sooner gets to sea, and the stream remains low, for a longer period. Further reasons are given for the extraordinary rise in the water of the Medlock, in August, 1856, and August, 1857,—when great damage was done to property, leading to legal proceedings against the corporation of the borough. The Manchester and Salford Sanitary Association, to whom the thanks of the inhabitants are due for the diffusion of much information, recommend that the course of the Medlock should be modified from the present circuitous channel; that angles in the side walls should be avoided; that the bed of the river should be paved, with a dip to the centre; and that a certain weir should be removed, or re-constructed, to facilitate cleansing; and they refer to the raising of the beds of the rivers by solid refuse thrown therein, and to encroachments on the banks, as amongst the evils which could be remedied were the conservancy in the proper hands. As to the sewage question, they consider they have demonstrated by experiments which they performed at the Bridgewater Canal, near the mouth of the

Medlock, at a foul place to which reference has been made, that the sewage matter in suspension and solution in a running stream, can be precipitated by the lime process, at a comparatively trifling cost; and that much of the injury arising from the use of the rivers as common sewers, may by such means be prevented; and in the "Minute," of October 26th last, whilst their committee "have no doubt as to the vast importance of preventing the admission of sewage matter into rivers;" they say they had "recommended the precipitating process, both from economical considerations in relation to an evil already existing, and from regard to the urgency of the subject in a sanitary point of view." On such recommendations, the town council seem to be now seeking from Parliament the powers referred to in our former article.

It may, therefore, be presumed that the intention in Manchester is to carry out a particular application of the lime process on a large scale; and there are many points of interest as to the mechanical contrivances apparently contemplated, that will call for the attention of those who are interested in the general question pertaining to London. It does not appear that the Manchester experiments have attracted much attention from the Government Referees; at least we find no evidence of it in the Report and papers. The experiments seem to have been suggested subsequently to the reading of a paper by Mr. F. Crace-Calvert, in which he put forth a method for facilitating deposit from the Medlock, in the curves in its course, using lime as the precipitant.

The chemical part of the investigation and laboratory experiments were conducted by Messrs. R. Angus Smith and A. M'Dougal, and Mr. Calvert, at separate periods; and the apparatus used at the canal, consisted principally of a trough with perforated bottom, extending across the stream, at an elevation of several feet above the water. The full effect of the application of lime was not ascertained—owing to unavoidable defects in the experimental arrangements; but it was found by Mr. Calvert, that taking the *organic matter in suspension and solution* as 12·11 grains per gallon, there remained, after treatment by lime, only 3·5 grains per gallon *in solution*,—"a quantity less than exists in many river waters which are used for domestic purposes." The lime process, it certainly appears, would put a stop to the putrefaction going on in the Medlock and canal, and remove the noxious gases which are evolved. On the occasion of the experiments, this was strikingly shown by the change in the atmosphere of the warehouse over the deposit basin. As to the proportion of lime, three hundred-weight per million gallons were sufficient; but it was found that the same lime would do duty four successive times, with little difference of effect. Mr. Austin, in his Report on Deodorizing and Utilizing Sewage of Towns, referring to these experiments, without questioning their value, indeed considers that they will form "no criterion of the quantity" of lime required for "ordinary sewage water." The precipitate has a certain value as manure, but would not bear much cost of carriage; yet it is more valuable and agreeable to use than the town's refuse,—at present sent as far as Lincolnshire. It is observed by Mr. Calvert, in a paper in the *Chemist*,\* that the plan could be easily applied to smaller streams, such as those flowing through Bolton or Oldham,—a consideration of particular moment, bearing in mind the facts referred to in our last article. The purification would prove of great value to manufacturers who use the water. The process does not leave an increase of mineral matter; but it removes portions of the substances which form incrustations in boilers.

The contrivance which Mr. Calvert has proposed, consists in the provision of small tanks—the size and position of the beds of natural deposit near the angles and curves; and, at several hundred yards higher up, in placing across the stream, barriers, with openings to allow the flow of the water, whilst the barriers would retain a layer of lime, the thickness and renewal of which would be regulated. The matter in suspension in the water, after coming in contact with the lime, would be carried on and deposited in the still-water line, or in the subsiding tanks in that position. The idea obviously occurs, that a process recommending itself as this appears to be doing, to the people of Manchester, might be usefully applied to the existing sewers of London,—not with expectation of commercial gain, or as a perfect measure, but as some alleviation of the evils that are now endured, or which await correction from works that will be some years in course of execution. The Manchester Association consider it as proved, that the canal could be purified at an annual cost of 3000l. or 4000l. It would be confessed that the plan of removal now adopted in Lancashire, is in its nature, not the most scientific that might be devised.

The expense to the city of Manchester, of all cleansing operations, we are told, is about 7d. a-head, or, for 250,000 inhabitants, a total of about 8,000l. In the Dukinfield Report, we observe several references to the difficulty of getting the pits emptied, and of finding parties willing to take the soil. In Manchester and Salford, the circumstances may be more favourable: market-carts which would be returning to the country empty, are able to carry back a portion of the refuse; yet, we have seen that there is no gain commercially. In London, in the case of one particular district, a similar circumstance as to the carriage of the stable manure, was found to diminish the value of refuse in the liquid form; and the Stanley-bridge Works for irrigation by sewage, became a failure. Yet, as perceived in all the recent reports and documents, utilization in the liquid form, offers the only prospect of meeting the difficulty. Fortunately, the causes of the ill-success of the works just referred to, are understood, though the question has suffered from the discouragement of other attempts.

Mr. Samuel Brooks, in 1854, being anxious to have the question of utilization cleared up, wrote to the Town Council of Manchester, offering 1,000l. to be expended in premiums, plans, and inquiries; but we have not heard whether any advantage was taken of the offer.

The land of Mr. Carus Worsley, at Rusholme, near Manchester, is irrigated with part of the sewage of the village; where, however, the house-drainage is very partially on the metropolitan system. Mr. Austin considers "these works are interesting as an example of how small a place it may be worth while, as a profitable investment, to lay down pipes upon, and even to erect engine-power, for the purpose of getting this manure on to the land," adding that the quantity of sewage delivered "was equal only to the ordinary discharge from 150 houses." We have found at Rusholme that the outfall into the brook is still preserved for use,—as the irrigation does not go on in frosty or wet weather. A similar cessation in the work takes place elsewhere (except at Edinburgh); therefore the question as to London, and entire dependence upon outfall on to the land, is scarcely answered.

It would be well to inquire carefully into the effect of the soil and grass as deodorizers. Mention is made by Mr. Austin, in several cases, of the smell arising where land was in process of irrigation, though by him it is attributed to mismanagement, or faulty contrivance in the

\* See page 717, ante.

\* June, 1856.



open ditches. Mr. Caird, in the article, "Irrigation," in the lately published volume of the new edition of the "Encyclopedia Britannica," appears to us to show that the irrigation, on proper soil, must involve decolorization. Land in the neighbourhood of Manchester, matured in the ordinary way, is, we believe, found more offensive than that which is irrigated with sewage, whilst the former mode of application is costly as to labour, is inferior in the mechanism of application to the grass, and permits the use of much that is mere rubbish, found in the contents of ash-pits.

The object of future works of sewerage in Manchester should be, not only to free the streams from the present filth, but to provide sufficient outfall for house-drainage on the approved principles. The work to be done is in many respects peculiar to the district, and will be attended with difficulties as great as those of the drainage of London. We have thought that some hints, useful in one case or the other, might accrue from a comparison of the circumstances and requirements of the separate localities.

#### FONT COVER, FROM THE CHURCH OF "ST. ETIENNE DES TONNELIERS," ROUEN.

A CENTURY has not elapsed since the church of "St. Etienne des Tonneliers" was still erect, and displaying in its exterior the marvels of its architecture—fine florid Gothic of the end of the fifteenth century,—and sheltering under its graceful vault, in the mysterious light of its stained windows, a large number of decorative adjuncts.

In 1793, this church, like many others, submitted to the terrible necessity of the moment: its doors were closed, and its furniture put up to auction, to increase the treasure of the nation. Afterwards the edifice, become insecure, disappeared itself.

There is in the Library of Rouen an old print, well detailed, which displays the originality of this building. De Jolimont, also, in his "Edifices de Rouen," in the sixteenth century, gives a drawing of the church.

The font cover, of later date, is, perhaps, the only object of art remaining of this building, and is now in the Baptismal Chapel of the Church of St. Romain, which abuts upon the Rouen Railway. It is of octagonal form, made of carved oak, and in perfect preservation; is composed of a spherical pyramid, upon a rectilinear base, each face of which is filled with a subject taken from the life of Christ. All these subjects are well composed, and executed with great delicacy of chiselling.

Above is a quadrangular lantern, consisting of four detached columns, forming an order of architecture, terminated above the entablature by a little dome, crowned by a pelican. In the space between the columns the artist has carved a representation of the Resurrection. The carving of the whole shows great spirit, is in most excellent preservation, and bears the impress of the sixteenth century. The Archaeological Museum of Rouen possesses a cast of this font cover, very skillfully executed.

#### A PEEP AT PARIS.

PARIS is decidedly one of the most beautiful of modern cities. Since the last revolution, the pulling down of old, narrow streets, and building new ones in their stead; the planting of more trees in the frequented avenues; the completion of the union of the Louvre with the Tuileries; the addition of squares; the placing of more statues in the niches of edifices and in public walks, have quite changed the face of things, astonished foreigners who knew Paris a few years ago, and surprised even the Parisians themselves. Animated by this movement, the city has acquired a new degree of interest. In this movement there were needed great men, and works directed to really useful and ornamental purposes; and under the empire of Louis Napoleon, progress has been the order of the day; vast projects which for some years had lain dormant, have been achieved; a strong tendency to advance has shown itself in many sanitary improvements, whilst the example set by Paris, several other cities of France have followed. It is most interesting to observe the perseverance with which artesian wells are worked; to see the monumental fountains erected over them. Artois, Chailot, Austerlitz, Belleville, Grenelle, and Passy are celebrated for these costly works. The engineers and surveyors of bridges and highways have many difficulties and embarrassments to overcome in penetrating to the required depth through numerous hard substances, through quarries of flint and stone; but all these seem trifling compared to the success with which their operations are generally crowned. The steady, yet the despatch

with which old buildings, sometimes of great solidity, are levelled, and as quickly replaced by others more suitable to the character of the present epoch, is almost incredible. Few of the chateaux and castles of the ancient kings of France now remain; however, these vestiges of Old Paris are seen here and there offering a striking contrast to the architecture of the New Paris, and looking as if Time spared them for posterity, and made them too venerable for modern improvements to destroy. Many of the antiquities of this country have been preserved in the *Musée des Monuments Français*, founded in 1793, chiefly with the view of doing service to art, and of illustrating, by means of the monuments, sculptured tombs, and bas-reliefs of different ages, arranged in chronological order, the history of France and the history of French art. Lenoir was the founder and manager of this useful and interesting Museum. Among the French, there are some who in their national vanity choose the Ile-de-France as the cradle of Gothic architecture. But it is a more general opinion that the arts were imported into France from the East. The same fumes of arches, and mouldings, and enrichments are found in the East in monuments still existing, and which date several years before the great church constructed in the Ile-de-France. Thus the famous Sainte-Sepulchre, built by Arabian workmen, dates nearly two centuries before the great Gothic church of France, and has been cited by many as a very beautiful type of Gothic architecture. The French, however, have done much to promote this style of late years, by building a number of Gothic churches in different dioceses. With them at the present day, as in our country, it is the popular, the universal, the religious art. We shall look at two or three of those ancient edifices in Paris which have been restored, are still being restored, and which it will take an immense expense of labour and material to complete. Among the religious edifices in the ancient Gothic style of Northern France, Notre Dame claims our first attention, as one of the finest specimens of the architecture of the Middle Age. When we have examined the construction of this cathedral, which was the uninterrupted labour of nearly 300 years, and which is entirely built upon piles; when we have examined the general disposition of the plan which is just and noble; the proportions of the different parts to the whole, which are satisfactory; when we have seen how admirably all the essential parts have been employed according to the principles prescribed for them; how perfectly the means are adapted to the ends intended; how much diversity without confusion, consequence being given to important parts, and inferior or smaller being subordinate; when we see what a rich imagination has embellished the edifice, making it at once pleasing to the eye and instructive to the mind; giving real beauty to the curvilinear forms and lines which naturally arise out of construction, as the ribs and bosses of the vaulting, the pendants, the pinnacles of the buttresses, the crockets and finials to the pinnacles, the tracery to the windows, the ridge ornament to the roof; when we see every niche, canopy, tabernacle, and hollow moulding in the arches of the doorways and galleries filled with statues, emblems, and Scriptural subjects; when we trace the number of ornaments and reliefs bestowed upon it, within and without, calculated by their arrangement to produce the greatest effect; the variegated dyes of the interior, heightened by "storied windows richly light," blending and harmonizing with united splendour over the whole; we feel the chief object of the architects of such a pile, after it had been well constructed, was to carry it to the utmost perfection, to engage all the powers of form and colour for it to attain a high expression of beauty; to render it, by all the means of decoration, as splendid as possible. Some persons do not approve of this profusion of form and colour; but, on the other hand, the ecclesiastics, who in former times were generally the architects of churches decorated in this manner, and the monks, who devoted nearly the whole of their lives in illuminating the missal, thought it only proper to render glorious by similar means the edifice devoted to worship. We shall find that the system and principles which they pursued, subject to improvements the result of experience, have been to a greater or less degree adopted in the most beautiful churches in the world. Besides, can any one invent a better method, or improve on the plan of fabrics so perfectly adapted to every requirement of the church? We need not go farther into history than to remark that the taste for colouring the monuments of sculpture may be traced to the first epochs of monarchial government in France, and was propagated until the sixteenth century. It was but an imitation of the Greeks borrowed from the Egyptians. In truth, it is to these ingenious decorators—to the frescoists, mosaicists, polychromists—of those early ages, that art in relation to religion is so much indebted. Many of the wondrous stained-glass windows of Notre

Dame have been repaired more than once; in 1752 by Pierre Levid, who wrote a treatise on the art of glass-painting. At present M. Lassus has been charged to repair them, and to adhere to their original character. When the restorations are completed, Notre Dame may look like what it did in the thirteenth and fourteenth centuries. The façade, or west front, is restored; the kings have resumed their places on the pedestals from which they had disappeared; the three portals are again surrounded by a zone of crowded sculptures. If we examine the mystical character of this and other cathedrals on account of the ornaments that were employed symbolizing the doctrines of the church, as the vine, the ivy, tigers, lions, serpents, and the signs of the zodiac, we shall find that these figures form the principal decorations of all the ancient basilicas and churches. The western doorway of Notre Dame is charged with a zodiac, as is that of Rheims and S. Denis, without extending the list by mentioning other great churches on the Continent. But, whatever the nature of the figures sculptured in the stone of these piles, they were not the creatures of mere fancy or caprice, but every one had a meaning, an aim, and expressed some religious thought, although to the ignorant many of them were enigmas. When the ancient chiselling, fine incrustations, and colour are restored in Notre Dame, it will no doubt exhibit polychrome architecture as in the glorious days of Medieval art.

The Sainte Chapelle, not far from the cathedral, and near the *Quai-aux-fleurs*, is one of the wonders of Paris. It was begun about the year 1245, from the designs of Pierre de Montreuil, the architect of the castle at Vincennes, and the refectory and chapel of the Virgin of the Abbey of St. Germain-des-Prés, which for its size and beauty nearly equals that of Sainte Chapelle. Sainte Chapelle is not great, but it is much admired, and affords a proof how much sublimity may be attained even with small dimensions. It will not yield in beauty of its kind to any of the most famous churches of France. Its construction is not a little remarkable. It consists of an upper and lower chapel; the latter at present is an atelier for the restorers, sculptors, and glass-painters; but a spiral staircase in one of the towers conducted us to the celebrated chapel, where a profusion of splendour almost dazzles; where very magnificent painted glass windows, of the thirteenth and fifteenth centuries, throw their magical tints over the interior, exceedingly rich with colours and gold; the ribs and stars of the groining are picked out in vermilion and gold, on a blue ground; much of the surface is sown with *fleurs-de-lis* in gold, as was a common habit at the time in royal and religious buildings. Nothing can be imagined more elegant than its golden spire, most carefully elaborated, rising from the high roof and glittering in the blue sky.\* It has all the delicacy we see in goldsmiths' work. It has been thought that Raoul, the goldsmith, directed the execution of the ornaments. However, we cannot observe the finish of its details without appreciating the taste and the degree of perfection to which in those days they had brought architecture and sculpture. This architectural gem St. Louis purchased for placing in it certain relics he collected in Venice and Palestine. They had not yet begun the mosaic pavement. The restorations directed by Leduc and Lassus evince great care, patience, and skill. To pass from this edifice to its neighbour, the Palace of Justice, built from the designs of Antoine, in the plain, robust character of the Doric, is very striking, from the different impressions which each produces. The sudden transition from one to the other is extreme. It was erected in 1622; a previous one having been destroyed by fire. Its character is imposing and well-sustained, consisting of a large hall or court, vaulted in solid stone, surrounded by corridors, supported by columns, and lighted by well-placed lunettes; the arcades, staircases, and courts of law, are all well constructed in solid stone. The whole has that grand and lofty appearance which the Doric always has when well treated, and which, more than any other order, retains the charm of its primitive simplicity. The masses are kept large and unbroken, and the superiority of the workmanship and material (the former surpassing the latter) excuses some little faults that occur in the details. A simple, regular, and but little adorned structure like this cannot have much attraction for exclusive admirers of the beauties of the Gothic as exemplified in the Sainte Chapelle. Contrasted with the latter, the architecture of this palace, cast in a sterner mould, is, perhaps, seen at a disadvantage: the one is composed chiefly of curvilinear forms, the other of rectangular; though each has its peculiar merits, its own principles; and all that criticism has to do in such a case is to see that the principles which should govern each are duly applied. We do not see any points of resemblance by which these two productions can be com-

\* Illustrations have been given in our pages of this and other buildings named.





FONT COVER OF THE CHURCH OF "ST. ETIENNE DES TONNELIERS," ROUEN.

pared. It seems very necessary to judge of different buildings, each presenting a style of composition essentially different, after those rules which have been followed out in them, and not to judge after our own rules. It seems necessary to have just and precise ideas of the relative value of different forms and proportions of different buildings, whatever the end to which they are destined,—

"Whether the broad-brow'd tower that dares the sky,  
The hall by Commerce or by Science trod,  
The palace-home of kings, or solemn house of God."

Crossing Pont-Neuf, of which Giacomo Andreotti was the architect, temp. Henry III. we admire, on the

raised terrace which juts out from the centre of the bridge, the garden and the trees, forming in the summer season a picturesque group, viewed from the Pont des Arts and other points of the winding Seine. The pedestal of the equestrian statue of Henry IV. which was damaged in altering the pavement near its basement, is being restored. The first stone of this monument was placed here in 1818, along with a copy of the *Henriade*, richly bound. The statue was cast in bronze by Lemot. We now come to the lofty Gothic tower of St. Jacques, once part of a church demolished in the Revolution, and which has recently been restored.

Houses which a few years ago abutted on the lower part of the tower, and scarcely admitted a ray of the sun into the street, have been cleared away for an open space of ground planted with trees, and laid out with curved walks, and flower-beds bordered with ivy. It is to the tired pedestrian quite an *elysée*. Here, as in other gardens and squares, in imitation of the London squares, the English style of gardening has been adopted; the straight monotonous lines and parallel-grams once so common, have been banished; and the beds for flowers and shrubs take the more pleasing shape of a bow, a water ornament, a heart, or a *fleur-de-lis*. This is, in some respects, and under some circumstances, an improvement upon the manner of gardening, invented by Le Notre, which has been disliked by many on account of its extreme formality; yet he was the man at that time, who embellished the residence of kings, and there was a magnificence of ideas in his plans, as developed in the gardens of the Tuileries, the terrace of St. Germain, the park at Versailles, and the Trianon. We will now go by railway to Saint Denis, and see its venerable cathedral and the royal mausoleum, just outside the fortifications of Paris. The exterior of St. Denis is much surpassed by that of Notre Dame, Rheims, and Amiens. Restorations have been going on here for many centuries, at different epochs, and under different epochs, and under different dynasties. The crypt, which contains the tombs of the kings of France, is quite a museum of sculpture. It is worth while consulting Le Noir's work on these ancient tombs, which he has classified and arranged in the order in which they were executed. The crypt of St. Denis, the apsis, nave, aisles, and chapels, form quite a studio; art may be learned here theoretically as well as in an *atelier*; the interior, which they are making as splendid as possible, will perhaps exceed that of Notre Dame. We cannot say much in favour of the style of some of the architecture, which is a kind of Lombard Gothic,—of which there are many specimens built in France and in Germany, by Cloris and Dagobert. But architecture made some steps towards the beautiful after the second race of kings, in the ninth century, judging from the Abbey of Cluni, built in 810. Félibien, in his "Lives of Celebrated Architects," says that Abbot Suger ought to be considered as one of the most intelligent men who lived in the twelfth century. He repaired and enlarged Saint Denis, took upon himself the principal share of the work; began it towards the year 1140, and finished it in less than ten years with an extraordinary magnificence, as may be learned more particularly from his own description. On the return of the Crusaders, towards the end of the thirteenth century, many of the decorative arts were cultivated; and the artists who had accompanied Louis IX. in his voyage to Asia brought home with them a style of decoration unknown before, and introduced into architecture arabesque ornaments. Real taste was apt to be sacrificed to too great a love for these ornaments, and was prejudicial to the more genuine Gothic architecture of that period. At present, some of the side chapels, the shrines of the ancient kings of France, are very splendid, from the rich colours that cover the walls, from the sparkling dyes of the windows, the golden ribs and bosses of the groining, which is starred on a blue ground. The suspended lamps, the inlaying, the capitals of the columns, the canopies in which stand the kings, arrayed in their robes, holding their sceptres, and crowned with their golden crowns, enable the visitor to form an idea of what the cathedral will be when completed, for the whole of the interior is to be worked up to the same degree of brilliant effect as seen in the side chapels that are finished. We asked a Frenchman who accompanied us, what he thought of it. He said, "it is bizarre, a hideous charivari of colours, trop paillard, trop recherchée, et ornée à l'effet." Another replied to the same question—"It is too beautiful—it is extravagant; one utility in it is that it employs artists and workmen: better have days for restorations than days for mutilations." Let us now return to Paris, and conclude our remarks on another style of buildings, and a later age, taking the churches principally, for of all public edifices, they most strongly attest the state of art at the time when they were constructed. In the churches of the *ancient Gothic style*, we might have included in our description, *St. Germain-des-Prés* (now being restored), *St. Etienne-du-Mont*, *St. Gervais*, which were built about the same date, and bear many points of resemblance to each other; though the *Sainte-Chapelle du Palais* was the most elaborately wrought of all. When we look into the architecture of Paris, we frequently find that the numerous mixture of styles, which often occurs to mark the finest buildings, from the fact of their having been built at different periods, and by men seemingly determined to show their contrary ideas and tastes. It has been the fate of some of the noblest edifices that were ever reared to have passed through the hands of several architects who have not co-operated towards one great



and important unity of style, but have sacrificed it to the vanity of their peculiar fancies, in consequence of which, the pleasure and improvement that might be derived from such edifices are almost diminished. It would seem that some architects tried as much as they could to alter or to distort the first plan and order adopted by their predecessor. This is observed in many of the old churches in Paris that from time to time have undergone repairs. The Roman arch or the horizontal beam is used alongside the Gothic. Saint-Eustache offers an instance of the Gothic and Renaissance in close and ill-assorted juxtaposition; a number of tails from the Greek and Roman orders, and ornaments very fine and delicate, but not Gothic, obtrude themselves amidst the ancient Gothic. Some of the sculptured works of the sixteenth century, as seen in the tombs of St. Denis, by Richier, and Germain Pilon, opened a new era for the statuary art in France. The French school was founded by Jean Goussier, in 1540; but it was towards the middle of the eighteenth century that France derived great advantages from her wars with Italy; and Paris became enriched with monuments of art, the spoils of Rome and Italy. These wars gave her a knowledge of the principal works of that artistic country, and had a powerful influence upon the architecture of Paris. To be convinced of this we have but to acquaint ourselves with the best works of Perrault, of Pierre Lescoq, Levan, Bullant, Philibert Delorme; and, later, those of Antoine (the Hôtel des Monnaies); Jacques de Brosse (the Luxembourg Palace); the Sorbonne, by Lemercier; the cupola of Val-de-Grace, by Lemut; the triumphal arch of St. Denis, by Boffet; Versailles and the Invalides, by Mansart. Among these are some of the finest edifices in Europe. Q. de Quincy, in his account of the church of St. Geneviève, calls it a monument of its kind,—the greatest of the eighteenth century. It was the work of Soufflot. The church of the Invalides also is considered by Félibien, de Quincy, V. Cousin, and others as one of the most beautiful of modern Europe. Numerous artists were employed in constructing and ornamenting it. Bruant superintended the building at its commencement; Mausez raised the dome; Girardon, so much praised for his bas-reliefs and sculpture at Versailles and the Trianon, directed the sculpture; Martin, the Boulognes, N. Coppel, Jouvenet, &c. painted the principal parts. The idea of Napoleon was to remove all the infirmaries to a greater distance from the church, adhering to the original designs of Bruant and Mansard; to prolong the edifice into one vast cross, presenting four façades, like the existing great facade, having the dome in the centre. The Invalides had then been *un et unique*. Visconti, to whom Paris is indebted for some of her most graceful fountains, superintended the decorations of Napoleon's tomb. Though we have but glanced at some of the most beautiful objects in Paris, they will yet be ever engraven on our mind; and we say of them as to a friend on parting, *au revoir*.

#### HACKNEY AND HOMERTON.

THE Rhine and Switzerland are more familiar to the dwellers in the western parts of the metropolis than are the lands which form the eastern districts of the same great city. It is a pity that such should be the case, for if but a small part of their spirit of investigation and travel were diverted by those of the west to the opposite parts, beneficial results would be the consequence. We have from time to time directed attention to parts of London which to many were as unknown as are the partially explored regions of Africa.

Let us now glance at Hackney, Homerton, and the other neighbourhoods which adjoin the marsh-lands. A line of railway skirts the north-eastern borders of London, and any visitor to the district to which we are bound may start from the City, or from Chalk-farm, Camden-town, Islington, or other stations, and the "iron horse," as the old locomotive was first called, will, in a very short space of time, convey the traveller to the Hackney station. The grey old tower of the church which formerly stood here is a pleasant-looking object, and tempts us towards the graveyard, which contains numerous memorials of the dead who have been interred here about a century. Some of those stones are illegible, and yet there are indications of the ornamental sculpture, which also is fast vanishing. Here and there it may be noticed that all traces of lettering have disappeared, and nothing is visible except a faint indication of some family crest: such objects remind one of the "vanity of vanities" of the "Preacher." The groups of trees, with peep through of the old belfry, will please artists. It was a praiseworthy feeling which caused the people of Hackney to preserve this portion of their church, for already have nearly all the picturesque features of the buildings been removed. In the main street the gabled houses

have been altered into more fashionable shapes. Plate-glass and other decorations have been brought into use. The building of shops on what were once the gardens in front of dwellings, and other usual works of progress are going forward. This neighbourhood is generally very open and there are plenty of extensive green places left in it. The streets and squares have no architectural beauty. Many of the houses are of the unimproved style of the early part of George the Third's reign: they have a comfortable look, and convey a feeling of unassuming respectability. Mixed with those are a few dwellings of date as old as Charles the First or Second's time, with nice iron railing and pollard-trees in front. There are also the City of London Union, the Hackney Union, church, and some other notable buildings in this district which will attract notice.

Substantially and snug as is the general appearance of Hackney, it is, like other localities, unfortunately not without poor, neglected, and dangerous spots: we would mention, Hildesheim-street, Abbott-street, and Fairley-street, as places which require very great improvement: the drainage is bad, the closets are bad, the pavement bad. "The houses were, in fact, sir," said a tenant, "built with a prospect to sell;" and here is the sure result—small-pox very prevalent, and typhus fever common.

We had some difficulty in finding an "old inhabitant," many of the persons to whom we applied for information having only for a short time resided there. The general impression seemed to be, that the place was remarkably healthy. A gentleman who had resided in a confined part of White-harpel, said that during his residence there he was scarcely ever out of the doctor's hands, and that since his removal here his health had wonderfully improved. After a careful inquiry amongst various persons, we hear of no particular cases of ague. In the Hackney Union, which contains the poor of a population of 68,000, there was but one case at the time of our visit which at all approached towards this complaint, so prevalent in parts of Bedfordshire and Kent. One of the medical attendants of this seemingly well-managed institution, stated that the neighbourhood had a high character for health: the water-supply from the East-London Company was good; and that as regards the exhalation from the marsh, he thought that the elevated position of Hackney and Homerton might in some degree cause it to escape the injurious effects. However that may be, it is certain that preventable diseases here are rather to be traced to the ill-drained spots than to mists from the marsh. In making this statement it must be borne in mind that the neighbourhood is open, and that even most of the courts of which we would complain are open towards the country.

"We are getting on here, sir," said an intelligent shopkeeper: "we are putting a new face upon things; but would you please to step to the back of my premises, and look at an old-fashioned nuisance, which I would be glad if you could assist me in getting rid of." Accepting the invitation, we proceeded as directed; and, over a paling, saw the Hackney Brook flowing amongst the houses, much in the same fashion as the Fleet Ditch did formerly at Clerkenwell. Into this "brook" or ditch, a considerable part of the drainage of Hackney and other places is passed. The condition of this stream should be considered, for according to present appearances it may be long before the great scheme of the drainage of the metropolis will be executed.

In passing over this neighbourhood, it is a pleasant sound to one's ears to hear that music of progress, the puffing sound of the locomotive, the breathings of which indicate wonderful and speedy changes in this and other metropolitan suburbs. Ere long we hope that at the railway, and the advanced intelligence of the industrious classes, will lead to thousands of homes being made on open ground,—well-drained and wholesome places. Here, however, straight before us, spreads the marsh,—large fields of cabbages, onions, and other vegetables for the Liverpool market, which is broken by trees, palings, and dung-heaps. When looking at this view, we thought that both Dr. Wilt and Cox might have picked up nice bits of scenery here, that would have caused many to exclaim, "Have we such pretty quiet scenery so close to London?" At the time of our visit a slight fog hung over the land, and funder-clouds rolled up in the distance. Seen under such circumstances, this large level space, leading towards the Thames, and reaching far in the opposite direction into the country, had a beautiful effect.

The river Lea and the water in the artificial cutting of the East-London Water Company flow through the level part of the valley. Wandering towards Lea-bridge, where the new and extensive filtering works of the Water Company are situated, Hackney and Homerton are seen rising on a pleasant eminence on all parts of the ground which are at all raised. The houses are marching upon the marsh, and even down below, the

bricks and mortar seem struggling to meet the neighbourhoods of Canning-town, &c. which are farther east. Amongst the unhealthy districts, Lea-bridge was mentioned, and to this spot, so well known by many a humble disciple of honest Isaac Walton, let us move on. This place is increasing, and before many years pass it will contain a large population. Independent of any malaria from the marsh, the position of this group of houses is such, that fever and other complaints may be easily accounted for. The Lea river, which passes through the place, is in its ordinary surface very little below the ground-floors, in which families sleep. The drainage is not cared for, although the stream runs close to many of the houses. At the last attack of cholera, there was only one fatal case at Lea-bridge, and that occurred in a house where the dwellings are placed back to back, and neither well drained nor ventilated.

The absence of hedges or walls is a peculiar feature of the marshes. The land is, however, divided by numerous short wooden posts, which separate the property. This large tract of "Lammals land" belongs to the parishioners of Hackney. The high road, as he is called, has certain privileges, but from August to April the land is free to any inhabitant for the purpose of grazing cattle. During the remaining months the property is claimed by certain individuals who grow large crops of hay upon it. If our readers will take the map, they will perceive that several streams of considerable volume flow through: the chief of these is the river Lea. A few years since this river, into which a considerable quantity of sewage passed, was delivered unfiltered to the dwellers of East London.

Now, however, the water supplied by this company is brought by a canal, which draws the water from the river Lea at a considerable distance from town, where the water may be considered as pure as most country streams. The sewage of Tottenham, &c. is now intercepted; the river Lea passes through Lea-bridge; the other stream is received at the large works which have been recently put up by the water company for filtering and sending it to London as pure as may be. A very intelligent person whom we met with here directed attention to the difference of the water in the river and the canal, and remarked that he had formerly for many years been acquainted with the nature of the water supply delivered to the unfortunate dwellers of Lambeth and Vauxhall. From the Thames he has known the water which was pumped up to be so foul with the sewage that the smell was so bad that it was difficult to keep the men at work. It appears that by an enactment of Parliament they were obliged to pump at low water. Respecting this our informant said "Nothing could be worse than this plan; the water was little better than the Fleet-ditch, and this, with very little refining, was sent for men, women, and children to drink." Truly the water supply of a great city is a most important business—a matter of life and death to thousands; and it was with no small pleasure that we saw the means which are being used at Lea-bridge for purifying this important necessary of life. Here the water of the canal flows in continual stream into the large filtering tanks which are at work night and day, and it is a beautiful and most pleasant sight to look into the receiving chamber, in which the water is constantly in a condition fit for use. So clear is it, that the little fish may be distinctly seen at the depth of several feet. From hence the water is conveyed by pipes to London. A steam-engine of immense power assists in this operation: this is constructed on Bolton and Watt's most improved principle; and there is in most eyes something exceedingly grand in the slow, yet seemingly irresistible force of this monster, which, by the ponderous movement of a ram weighing over 50 tons, forces the water amongst six or seven hundred thousands of people.

#### ON THE FOUNDATIONS OF SOME OF THE METROPOLITAN BRIDGES.\*

Waterloo and London Bridges, which were both built by John Rennie, have both the same kind of foundations. Waterloo-bridge, built in 1809 to 1817, has nine equal semi-elliptical arches of 120 feet span and 35 feet rise; and London-bridge, built in 1825 to 1831, has five semi-elliptical arches, two of which are 180 feet span, two 140 feet span, and the centre arch 152 feet 6 inches span, with 37 feet 6 inches rise: it is 52 feet wide, none of the other bridges, including Waterloo, being more than 45 feet wide. The foundations of both these bridges were constructed in coffer dams. Into the construction of coffer dams it is not now proposed to enter, their object, their purposes, and their details being well understood.

\* The following is a portion of a paper, by Mr. W. A. Bonhois, read, as already mentioned, at the ordinary meeting of the Royal Institute of British Architects, on the 7th instant. As we have recently trodden the same ground, some of the particulars given would be supererogatory.



stood in this room. The entire area of the bases of the piers is piled with elm piles, about 20 feet long and about 3 feet apart, and which penetrate the London clay, in the case of Waterloo-bridge probably to a depth of 18 feet, and in London-bridge about 18 feet 9 inches or 19 feet. On the heads of these piles were laid sleepers, and the loose earth between their heads was replaced with rubble concrete, on which blocks of Bramley Fall stone and brickwork filled up the spaces between the pile-heads, immediately below the platform of oak planking which carried the first course of granite masonry.

The pressure upon each pile in London-bridge has been estimated at eighty tons, or about five tons per foot superficial on the entire area, and this is considerably below what the piles would actually carry. The difficulty of applying sufficient dead weight upon piles, to ascertain their bearing powers in equilibrium, has always prevented the formation of any formula or data on which engineers can base their experiments. The piles are driven, and the pressure they must be sustaining is then calculated after the load is on, on a maximum having been ascertained. At the border-bridge on the Newcastle and Edinburgh Railway, the calculation showed that each pile must be sustaining a weight of seventy tons. The pressure on each pile of Waterloo-bridge is probably somewhat less, but still it must amount to at least sixty-eight tons.

London-bridge has a close pile sheeting all round the platform, which penetrates about one-third of the distance of the main bearing piles. Waterloo-bridge does not appear to be so protected, yet London-bridge after the removal of the coffer dams settled in every pier from 6 inches to 10 inches towards the down stream: this was attributable to the entire area of the river substrata finding their proper bearing after the disturbances to which they had been subjected by the piling of the coffer dams and of the centring. The coffer dam above bridge was in 35 feet of water below low-water mark, and the piles were consequently very deeply driven, and though those which were near to the piers, or could apparently affect them, were not drawn but cut off, the mass of the clay had received a disturbance which settled itself probably once and for ever, and if the bearing areas and the tenacity of the piles are sufficient for the superincumbent pressure, no further settlement need be apprehended.

Southwark-bridge, also built by John Rennie, was erected in 1814 to 1817: the spans are 240 feet in the centre arch, and 210 feet each side arch. The arches are segmental in eight cast-iron ribs, and rise about 22 feet. The two piers are each 24 feet wide: they were built in coffer dams upon piles which were about 2 feet 6 inches apart, or even closer, and 20 feet deep: the drawings, which I have been enabled to examine, represent about 286 piles under each pier: the platforms for the first course of masonry were made in a similar manner to those of London and Waterloo Bridges, and no settlement has taken place as far as I can learn, nor has any repair of moment to either sub or super-structure ever been necessary.

Vauxhall-bridge, by James Walker, was built in 1811 to 1816: it consists of nine segmental iron arches in ten ribs of equal spans of 78 feet, the rise being 11 feet. The foundations were laid in caissons, which were sunk down to the London clay, the river being dredged I believe in its entire breadth for that purpose: the footings are in stone, no subsidence has been recorded. I have not been able to learn the precise means taken to prevent the scour from undermining the caissons, but I believe the Kentish rag and ballast were thrown down around the piers in vast quantities.

Hungerford-bridge was built by I. K. Brunel in 1844. The foundations of the two piers which carry the chains, rest on a bed of gravel which is stated to be as hard as a bed of artificial concrete. No piles were used in the foundations, a coffer dam being formed round the piers, and the ground was excavated down to the hard gravel which was found about 6 feet below the then bed of the river. Below the mud (and until the hard gravel was met with) gravel of a looser kind was encountered. On the Hungerford Market side of the bridge at the mooring piers, the ground was very bad: piles were here driven to the depth of 80 feet. Mr. Brunel terms the beds on which the bearing piers rest, two courses of hard gravel (as hard as concrete) forming a natural formation, situated in the midst of a looser soil.

After this description of the different foundations of the piers of the bridges which are in existence in the river Thames, it will be seen that the conclusions which must be drawn from the practical experience of those foundations which have failed, and those which have not, are very limited, but they are at the same time very clear and simple: the bed of the river Thames is much lower than when the bridges which have failed were built—a fact occasioned by the in-

creased scour produced by the removal of the dam which old London-bridge afforded the continuation of the waterway by the projection of embankments, and though last, not least, the ballasting which for a long period constantly proceeded above the bridges, and though now to a great extent prevented, yet sufficient from the dredging operations as well below as above bridge to deepen portions of the waterway by some inches annually. This deficiency is not made up again by the deposit of gravel or ballast, for the deposit of the Thames is silt, sand, and mud; and the original gravel-bed of the Thames has been so reduced by digging, and by the scour consequent on changes in the waterways, as to be now only existing in sufficient thickness to be built on in cases as they were termed by Mr. Brunel, such as the parts on which the Hungerford-bridge piers were constructed. Wherever, therefore, we find the foundations have been made to depend on the gravel, and have not been taken deep into the London clay, failure has taken place. The piers of Hungerford-bridge, the only exceptions to this rule, are so lightly weighted, and situated so fortunately for avoiding scour, and have been so recently constructed, that they cannot be said to disprove it. The rule of experience is, that in the clay only can a sure foundation be found, and no casings have yet been added to defective piers which have held the enclosed gravel into a sufficiently compact mass to prevent its sinking by loss of substance through the joints of pilings. Down to the clay, then, we must go for a sure foundation, and the different methods of effecting this are the only points for discussion.

The old successful examples in London are all of one class: they are coffer-dam examples, with the exception of Vauxhall-bridge and the new bridges designed by Mr. Pugh. Vauxhall bridge, as has been shown, was a caisson foundation carried to the London clay without piling, and the weight of the bridge is not sufficient to need piling. All the other sound bridges are piled deep into the blue clay. The shoulders and sides of these piles, and the surface of the clay between them at their tops, are the ultimate bearing points upon which presses the superstructure, whether of granite or stone courses, or of compound concrete and wood, or of iron. Theory would say, upon this foundation make the superstructure as light as is consistent with even pressure and avoidance of jarring which may cause motion: every pound you place on the shoulders of the piles, or upon the earth's surface at their heads, beyond what is required for inertium, is useless and superfluous. To maintain the piers in perfect inertium, and immovable under the pressure of water, floating ice, or drifting sailing barges, or unskillfully directed steam-boats, and the heavy road-traffic over the bridge, requires a much less weight than would result in an equilibrium between the bearing surfaces and the pressure: it is not necessary to have solid granite from the bearing points to the voissors for equilibrium, and almost any material that can be used are in the tidal currents of our river sufficient for this purpose. It is perfectly true that London and Waterloo bridges would be absolutely stronger constructions theoretically, if their piers were not so enormously heavy, and were built of brickwork, or hollow.

With regard to the destruction of the foundations of piers in the river by scour, I think the ultimate depth of the scour will never, under any possible circumstances, extend sufficiently far down the piles of either London, Southwark, Waterloo, or New Westminster, to cause any apprehension on this score, and simply renewing the casing and filling round the piers with concrete will be enough to prevent their injury, should a tendency to scour be observed. The river has deepened only in places for some long time since its great deepening by the removal of London-bridge. When embankments are carried through on each side, as we must all hope they will be, and the channel narrowed, the equilibrium of the depth will at that time prevent any serious increase of scour.

The methods proposed to counteract this effect by Mr. Cubitt and Mr. Hosking, would also prove effective to preserve bridges founded so deep as those piled into the London clay, though they would not probably have preserved either Westminster or Blackfriars. Mr. Cubitt proposed to pave the bed of the river with stones for a distance above and below the bridge of some 60 feet, I believe, as well as under the arches; and Mr. Hosking proposed a sub-weir of piles across the river to a height which should prevent the rush of water degrading the existing bottom of the river, and he shows that ample water would remain at low tide to answer every purpose of the navigation.

Le Credit, chief of the French Ponts et Chaussées in 1780, in his work on rivers, proves that the beds of rivers do not change sensibly when considered throughout their course; but that local causes alone occasion increase or decrease of depth in the beds in different places, and not throughout their length, and the Thames being subject to no violent floods, and

having, on the whole, very steady tides, it is not probable that an unseen and unperceptible injury should occur to deep-seated foundations, well protected in its bottom.

The inquiry into this subject has led me to seek information as to any failures from scour which have occurred to bridges abroad, and I cannot find an instance of a deep-piled bridge which has fallen: many have needed repair, and most of them have lately been strengthened by throwing in concrete round the piles, and no question seems ever made of the stability of this enclosing medium, or of its tenacity to the wood piles. Indeed, the employment of concrete by the French in hydraulic works is far in advance of our application of it hitherto. They do not scruple to use it without any encasement whatever in the beds of swift rivers subject to violent torrents during floods.

Upon the subject of the durability of the encasements of the piers at Westminster and Chelsea bridges there exists some difference of opinion: for myself, I think that if the hollow piles are filled with cement grout, they will, as respects the buried portions of them, be almost as durable as the other portions of the structure, and will be, as compared with past constructions, whether Pelasgian, Grecian, or Roman, indestructible; but as respects the portions out of the clay, unless some preservative is applied to them, they will not endure, probably, more than 300 years. It was Mr. Hawkshaw, I believe, however, in his evidence before the committee of the House of Commons on this point, who said that by the time that any decay of moment had occurred to the iron casing, the condition of the other portions of the structure would be so stable as to admit of its removal and replacement without danger, and when we consider what has been done both at Blackfriars and Westminster, in the way of cutting at the old foundations, I have little doubt that these piers could be, with care, re-encased without any danger to the foundations, which it must be always remembered are deeper than the pile casings, and not above them, as was the case at those defective bridges. Screw piles might at any time be placed a short distance outside them without any risk from vibration or concussion in the strata.

#### THE GREAT CASE OF STUCCO v. BRAINS.

SIR.—It is a great pity that writers like "Aristides" will waste so much time and ingenious argument, through not first acquainting themselves with the most accessible and easily learnt facts; and though, as one of the butts of his mistaken attempts at wit, I might maintain a dignified resolve not to help him, I will, if you please, assist him to correct a fact or two, that will quite alter his whole data.

1. He must be quite a stranger to England to suppose we ever stucco buildings for the sake of "a cheerful and lively appearance." The idea has been broached, as I believe all those of "Aristides" have, in your pages before, and seems thought a capital cement-maker's cry. A little stay in any of our towns, however, will show him that if any of their "cement architecture" approaches liveliness of colour, it is because it has received within a year or two a coat either of paint or some other dirt-hiding cosmetic, without which periodical sloughing or moulting (so "good for trade," and for some of the *Builder's* readers, at the cost of its non-readers), the "dirty-red brick" of our young friend's aversion—may, even the more soot-retentive London brick—is so much longer growing thoroughly dingy, as to have actually the advantage in this point over any "cement" piece of art that Chancery or some corporate owners may have left as long to its own unaided cheerfulness. Now, whatever the object of these universal coats of drab or our national sacred "stone-colour" (a tint, by the way, that I do not believe people ever yet chose for cheerfulness, for I never saw it on any happy-looking village or good-old-time plastering; and the most lively-coloured town I ever saw, which is St. Thomas's, in the West Indies, has, or had, its wood and plaster houses of every light tint I can think of except this—even Ruskin's aversion, buff, but not this holy drab): whatever their object, I suppose "Professor A." as a professor of the noble science of non-spreading, knows that they might possibly be applied on other materials than cement; and even if they could not, if this ground for them most further of necessity cover the whole building, with every appearance required by its structure, and also every one proper to another whole imaginary stone building, and be "jointed to imitate stone" (as the specifications say); and further formed with vast contiguity not the *architect's*, however) into the semblance of that other imaginary building, with capitals, architraves, and what not—if all this is preparatory and accessory to getting a house lighter-coloured, I can only say we have realized the state of that fabled people who had no way but burning a house down to obtain roast pork.



2. "Aristides" talks of stone as "the best material," and "cement" as another, as if these were somehow interchangeable, or both fit for some common purpose, for which he mentions no other. Now, I believe that among the endless eccentricities of our great architect, there is one piece of work, a medical college in Lincoln's-in-fields, where this substitution of *cement for stone*, as a building material, has been tried; but the common practice of mankind in every place where stone is not at hand, has uniformly confirmed the old choice made at Babel, of *brick* for its substitute, and not *cement*. I am quite ready to admit, on valid proof, that all this is overturned by the above innovation, or by Paxton's; but our friend is arguing about *present* materials.

3. There is no "cry against cement" that I am aware of. The "puritanical" cry that "Aristides" and his whole craft will yet find too strong for them, is only for the right thing and person in the right place, and no minority of one by another; a designer at the drawing-board, for instance, and not a sneaking mimic of a man-milliner, with stone and brick for lace and crinoline.

4. Whether "the coat on a man's back is a sham" depends on whether it is so designed as to pass for a coat, or for something else. We applaud in their right place, coats that represent well a suit of armour, or a man's skin, or a dragon's; but I never heard of a gentleman wearing them, and in the street. Now, just as little does any Englishman, or body of Englishmen (except perhaps the Posseyite clergy) desire their building to pass for anything else than it is, or their building's coat, when it has one, for a *building*. But this, our poor deluded Mr. Bull is obliged to have all his work to do, everywhere, and make his entire cities, if not country, masquerade-rooms, to the laughter of all neighbours (save his own child Jonathan) and the illimitable absorption of degraded labour into the abyss of ephemeral millinery; all forsooth, to keep up the pretence that certain "*per-centage-on-the-outlay*," taking agents are fine-artists. This is the only downright wicked "sham" in the case. Sham buildings, for their own sake, would be merely childish and laughable, not immoral. Are we to be told these are an object, either with the "architects" or the public? Coats on buildings have been used everywhere 5,000 years, without its ever occurring till the last 50, or perhaps 100, to pass them for no coats, but for buildings. Now, to make them good and sightly coats, whether in stone or cement, as at Florence Cathedral, St. Sophia, or even a mediæval plastered inn, required some, however little, of the designer's *own work*: but to mould them into the ready-made forms of finer uncoated buildings, perfectly, even to the "jointings," requires only *other people's*. Is it a very singular coincidence that this is all poor Mr. Bull can get, from men paid not by their own work, but a per-centage on other people's? Is it at all singular that from such a "profession" he finds he can get nothing else, fret and fume and proscribe this or that "sham" as he may? Nay, for the sake of this, he must have skins on his buildings, stone or stucco, whether wanted or not, from the gin palace to the palace of Westminster and British Museum; and the stucco ones, by far the lesser sham and less harmful. He must have them for the sake of the forms they can be made to mimic, though this was no more thought of till the days of *outlay-paid* architects than crinoline before there were outlay-paid milliners. Cure their root, and they will all cure themselves,—never otherwise. "Aristides" and his fellows are the only shams to be eradicated: it is useless as well as puritanical to cry against cement.

5. We are told this is "one of those virtuous notions which every one re-echoes, and all practically disregard." Will Aristides be pleased to show us where the late Pugin, or Messrs. Street, or Woodward, or Seddon, or Scott have disregarded it? If not, here are three facts he mistook in a breath:—(1) There is no such "cry;" (2) though none re-echo the "action," many do practically regard it; and (3) it is no "virtuous" notion, being the easiest possible to carry out by good or bad, real or unreal, designers alike.

6. The "cry" might actually lead us to a ceiling "showing the timber joists." Such are the absurdities to which, &c. Oh! absurd world and miserable mankind, to have lived some 5,000 years in such absurdities! Happy nineteenth century, to be delivered at length from the perpetual sight of absurdity! And yet those dolts, the painters, actually still imitate this, expect us to take pleasure in the disgrace of our ancestors, and show us kings and heroes sitting under the absurd joists! No wonder the Royal Academy excludes architecture: Aristides explains it all.

7. What Goth can have told him that the "use (of cement) in their style would be monstrous"? In their style indeed, if the middle ages are any authorities in it, all cement had the barbarity to show itself openly to be cement (and that managed by an original designer), and not stone, masonry, mouldings, carvings, and buildings. Which is the more "monstrous" may

admit two opinions. Perhaps, however, those ages are not so great an authority as Mr. Scott, for I hear rumours of his discovering in poor harmless-looking silicate of lime "an accursed thing." Now I must apologize for quoting this once, in Aristides's own way, at second-hand. I had promised myself the pleasure of reading Mr. Scott with care; but a certain late sermon or lesson in Westminster Abbey changed my mind. I had gone to hear Dr. Wordsworth, but was first struck with some odd derangement of the building's light, from that fine distribution that has chiefly, or perhaps solely, given it its peculiar solemn beauty, as the *only* dignified church-interior in London, and I believe the *most* so in England. That decided predominance (as in a French cathedral) of the central light over that of all the aisles was gone, and the latter glaring as in a modern church, as if the aisle windows, so long before our time cleared of all beauty and art (to the admission of about four times the light they were intended for), were now even enlarged. However, I saw no change in their shabby casements, but far overhead in the "clear" story, found five windows filled up with either deep and heavy-coloured glass pictures, or Turkey carpet designs (for you must mount at least to the triforium to ascertain which); but apparently elaborate pictures, which, if fit to be seen, would be the exact things wanted in the aisle windows: so that I presume they are not worth much, or would not be put (in a building only 30 feet wide) just 100 feet above the spectator, where they can be just as well understood as in the lantern of St. Paul's; nor used as sun-blinds, a purpose served as well by a little rough plate-glass (to say nothing of the light artistic mosaics of the Cologne and other clear stories); nor so as to defeat the whole purpose for which the said *clear* story was built; and, if they are continued, to reduce the poor old building at last to the vulgar English type of a church, *lighted from below*, which is utterly fatal (as Mr. Fergusson says), to all dignified effect. I looked again at the world aisle windows, and thought life is really too short to be squandered in perusing men's opinions who can do such things as these; so I came out wiser, and have not read Mr. Scott, any more than I should go to learn mechanics of the engineers of the *Leviathan*. His works would probably yield me new and valuable truths; and so may any fragment of print that we tread into the mud, but it becomes impossible in these days to carry out the Mussulman rule of leaving no scrap unread that may contain some word of Allah. Assuming that Mr. Scott is rightly quoted then, I should say he ought to have looked more than whitewash-deep for the "accursed thing." Whatever materials, or practices either, you may proscribe, others as vile and delusive will immediately arise in a subtler form, and you will find only false and delusive design is to be had after all from a delusive profession, from outlay-paid (that is, paid for other men's work) designers. E. L. GARBETT.

#### INSTITUTION OF CIVIL ENGINEERS.

On the 15th inst. the general annual meeting was held, Mr. Stephenson, M.P. President, in the chair. The report of the council for the past session, which was read, referred to some of the more important engineering works in progress or recently finished.

Among the works in an advanced state, the bridge erected by Mr. Brunel, V.P. on the Cornwall Railway, for carrying the line across the River Tamar, at Saltash, near Plymouth, was prominently alluded to. This bridge, including the land openings, would be about 2,200 feet in length, and would consist of nineteen openings, two of 455 feet span each, and the others varying from 70 feet to 93 feet in span. The latter were formed of simple wrought-iron girders, but the two main openings were to be spanned by longitudinal beams, suspended by long-linked tension chains, rendered rigid by vertical struts and diagonal bracing, from arched tubes of wrought-iron plates. The transverse section of these tubes was elliptical, the horizontal axis being 16 feet 9 inches in length, and the vertical axis 12 feet. Each tube with its chains and suspended roadway would weigh about 1,080 tons. The first was floated on the 1st of September of this year, was conveyed upon pontoons to its site, and was placed upon the piers in about two hours. It was now being lifted by hydraulic presses, and the process was progressing very satisfactorily.

The Rivington Waterworks of the Liverpool Corporation, constructed by Mr. Hawksley, M.Inst.C.E. were brought into operation in the early part of the present year. The works consisted of several impounding reservoirs, two of which had embankments of nearly 100 feet high, and two others with embankments of about 50 feet high. These reservoirs held about three thousand two hundred million gallons, and were intended to deliver about fourteen million gallons per day to the inhabitants of Liverpool, and nine million gallons per day to the mill-owners and others whose

interests were affected by the works. After being stored, the water was passed through a cast-iron main-pipe of 44 inches diameter, and twenty-three miles in length. Great difficulties were encountered in constructing the works, in consequence of the variable character of the ground, upon which the main embankments and other retaining works had to be constructed. It was deemed necessary, in several instances, to excavate the puddle trenches to depths of 50, 60, and even 70 feet below the surface of the ground. The cost of the works, land, Parliamentary and local inquiries, had reached about 750,000l.; but of this sum it was estimated that 150,000l. had been expended upon, and in consequence of, the contentions of the local authorities. In addition to this outlay, the purchase and improvement of the works of the two Companies by which Liverpool was formerly supplied with water, had amounted to about 850,000l. Hence the total cost, to the present time, of providing water for the inhabitants of Liverpool and its neighbourhood, numbering altogether about 500,000 persons, was upwards of one and a half million sterling, or somewhat more than 3l. per head. The two works together were, however, capable of supplying twenty gallons per head per diem to one million of people.

The statement of the receipts and expenditure showed that there was a balance of upwards of 700l. in the hands of the treasurer.

After the reading of the report, Telford Medals were presented to Messrs. D. K. Clark; R. Hunt, F.R.S.; G. Rennie, F.R.S.; and W. B. Adams; and Council Premiums of Books to F. R. Wadsworth; G. B. Bruce; A. S. Lokin; C. E. Conder; W. Bell; F. R. Corder; and T. Dunn.

The following gentlemen were elected to fill the several offices on the Council for the ensuing year:—Joseph Locke, M.P. President; G. P. Bidder, I. K. Brunel, J. Hawksley, and J. R. McClean, Vice-Presidents; W. G. Armstrong, J. Cubitt, J. E. Errington, J. Fowler, C. H. Gregory, T. E. Harrison, T. Hawksley, G. W. Hemans, J. S. Russell, and J. Whitworth, Members; and S. Wood and M. D. Wyatt, Associates.

#### ANCIENT BRICKS.

As a *pendant* to the article on ancient and modern bricks in last week's number, perhaps a few particulars, which I have gathered from the account of Lord Macartney's embassy to China, regarding that stupendous piece of brickwork, *the wall*, might have some interest.

The dimensions of the bricks seem to vary (according to their use); those in the front of the walls being 15 inches by 7½ inches by 3½ inches, and those for paving, 15 inches square. The bricks are fire-burnt, and of a bluish colour. The faces of the wall (which batter) are finished with *moulded*, not cut, bricks. The quoins of windows, doors, embrasures, and salient angles "in" the towers, are of strong grey granite, containing but little mica. The joints of mortar are about half an inch thick.

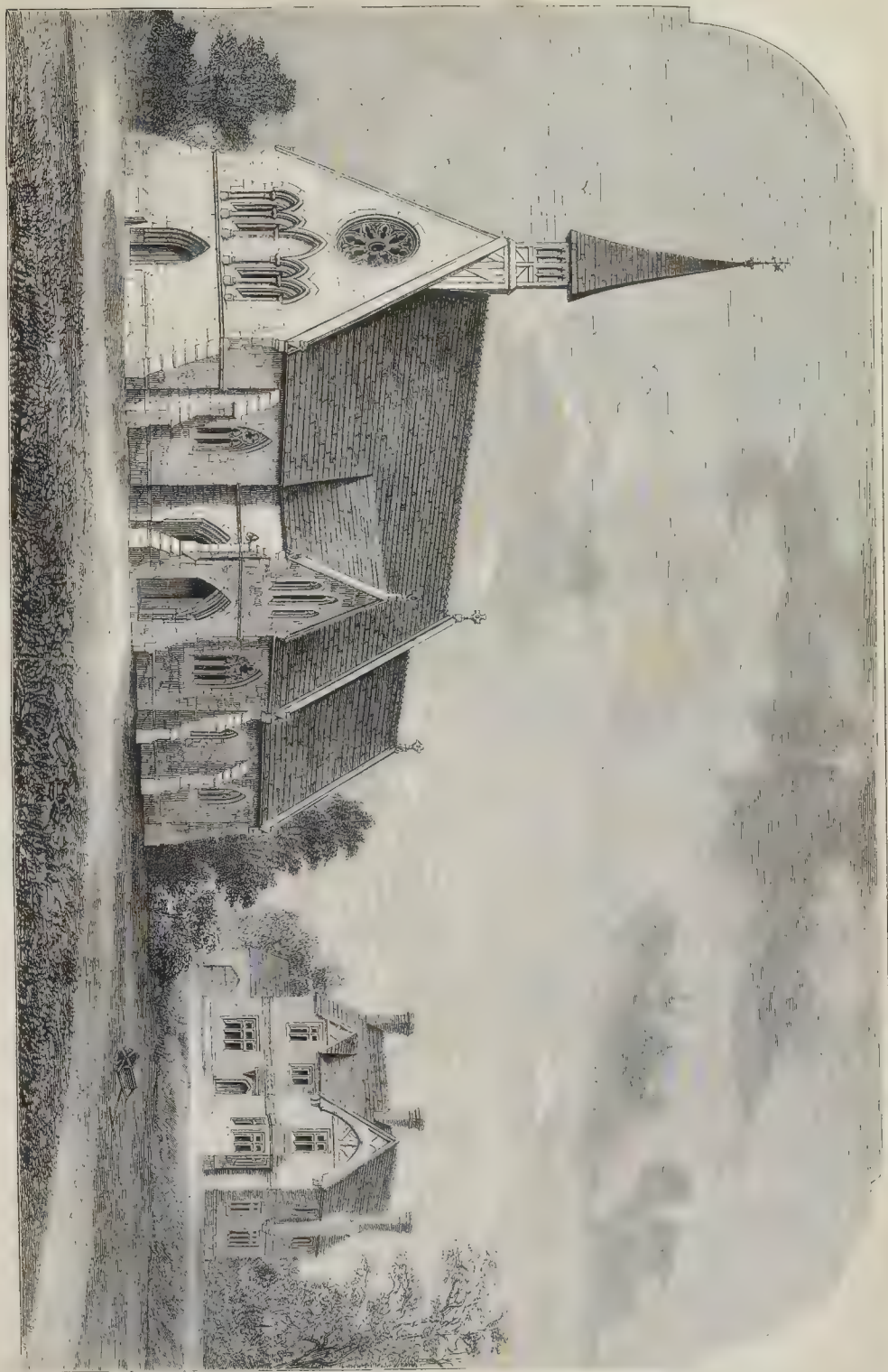
London brickwork, with its niches, festoons, pilasters, consoles, cornices, architraves, its panelings, and its unique window-heads, such as No. 5, Bow-churchyard, is a study in itself. S. C. R.

#### ST. PAUL'S CHURCH, DORKING.

The church and parsonage, represented in our engraving, stand on a sloping piece of ground, in the outskirts of the town of Dorking, near the Deepdene, the residence of Henry Thomas Hope, esq., by whom the site was given. The church is built of Bath stone and flint: the roofs are covered with tiles. In style it is Early Decorated, or Geometrical. The interior is fitted up with open stained deal seats, accommodating between 500 and 600 people. There is a small western gallery, forming part of the solid construction of the building, supported on stone arcading. The east and west windows are filled with painted glass, by Hudson. The walls of the interior are ornamented by ecclesiastical devices, in stamped stucco. The west gable terminates in a bold oak shingled bell-cot. The church and fences cost about 2,700l. The parsonage adjoining is of new brick and stone dressings, and cost 1,500l. The church and parsonage are built at the sole expense of John Labouchere, esq., of Broomehall, who has also liberally endowed the church. Mr. Ferrey, of London, was the architect. The contractors were Messrs. Shearburn and Son, of Dorking. The church was consecrated on the 15th of July last.

READING-ROOM AT A MANUFACTORY.—The workmen at Messrs. Mandavay, Sons, and Field's, engineers, Lambeth, have voted an address to their employers for placing at their disposal a comfortable reading-room and mess-room.





ST. PAUL'S, DORKING.—MR. BENJAMIN PERROT, ARCHT.



### THE ATTEMPTED LAUNCH OF THE "LEVIATHAN."

SIR.—It is very satisfactory to many of us who were watching and wondering, to find that your judicious and well-merited observations of Friday, the 11th, have engaged the time of the daily press. Up to that time they had believed what they were told, and taken everything for granted. They have since then, I am glad to say, exercised their own judgment more upon the matter. Mr. Yates's avowal of his contempt for the press has probably aided in opening their eyes. The *Times* at Poplar have been anything but useful to English reputation. The *Mechanics' Magazine*, following your lead, says,—"Was ever such a spectacle witnessed as thousands upon thousands have for weeks past beheld on the Thames!—an English engineer, at the head of multitudes of mechanics and labourers, breaking ponderous engines, rending enormous cables, crushing solid masses of timber, bursting strong iron vessels, forcing up the soil, tearing up the very bed of the river, expending vast sums of money, impoverishing shareholders, ruining the vessel herself, spreading terror around, impeding the keeping this up day after day, week after week, and even month after month, and all in order merely to lower a ship from the shore to the river!"

Much misinformation has been given to the public in grandiloquent terms: compare, for example, the description which has been circulated, probably from official sources, of the "launching ways" and the "check-tackle," with what is actually the case. Of the former it has been said,—

"The arrangements for launching her were directed by Mr. Brunel, who had planned two inclined ways from beneath her, to a distance of 300 feet down the bank of the river, on an inclination of 1 in 12. These ways are about 120 feet wide; the distance between them is also 120 feet, and the substructure, which carries the rails, and upon which the cradles are to slide, are of immense strength and solidity. Under each way are driven seven rows of piles, the four outside rows having piles at the distance of every 3 feet, while the three inner rows have them driven only every 6 feet. The piles are forced down to the gravel bed of the river, commencing under the ship's bottom, and extending to low-water mark on the bank. On each side of every row of piles, are timbers 12 inches by 12 inches square, bolted together, securing the heads of the piles between them, and extending the entire length of each way. The whole is covered with concrete, to a thickness of 2 feet; and above are longitudinal timbers of great strength, running the entire length of the way. On the top of these, placed transversely are timbers of the same strength, but only 3 feet apart, and the whole is securely bolted together, forming one solid structure. Upon this are laid the metals on which the ship is to be lowered, (?) They are heavy bridge rails, similar to those used on the Great Western Railway, and are screwed down to the timber roadway."

The difference between the manner in which these ways were constructed and that described above, is very great, as the following account of them will show.

The first step in preparing for the launch was to clear away the mud and dirt to a regular inclination of 1 in 12 from the ship down to low-water mark; after which, the five rows of piles forming each way, and varying from 25 feet long near the ship, to about 6 feet near low-water mark, were driven: the two outer rows on each side of each way were pitched 3 feet apart, and at a distance of 20 feet inside them, another row; but these inside rows, three in number, were pitched 6 feet apart, so that the breadth of each way, viz. 80 feet, was divided into five stripes, of 20 feet wide, extending from the bottom of the ship down to low-water mark. To the sides of these piles, just below their tops, balks of timber, called waling-pieces, each about 12 inches square, were bolted, on the outside of each row only, by 1½-inch iron bolts, and the surface of the mud over the area of 80 feet wide, was then covered with a layer of concrete, barely 1 foot thick, upon which other balks were laid, about 2 feet apart, and in lines parallel to the rows of piles; these balks were also about 1 foot square, and concrete was then put into the empty space between them, and levelled to an even surface with their tops; so that instead of the ways being constructed on "2 feet of concrete," the whole superstructure is carried upon only "1 foot" of this material, and the support derived from the bolts in the waling-pieces against the heads of the piles.

As an instance of the amount of calculation and foresight exhibited throughout this famous launching exploit, it may be mentioned that when the ways were completed it was "found" that they were not wide enough; that is to say, that they were not sufficiently strong to carry the great weight about to be "lowered" down them, and the consequence was that each way was increased in width by an addition of 40 feet!!! which was done by driving a row of piles on each side of each way, at a distance of 20 feet from each outer one, thus making the rows of piles in each way seven in number, and concrete, balks, waling-pieces, &c. &c. were added, as was done in constructing the part already completed. What addition this made to the first estimate for the launch

would be an interesting item; but there can be no doubt that the total cost will form a valuable record for the archives of the Institution of Civil Engineers, where they might be enrolled as a sort of thing to be avoided, with a salutary effect.

We now come to the "ultra scientific" "check-tackle," which is thus described:—

"The most interesting and important parts of the machinery connected with the launching of the *Leviathan*, are the 'check-tackles.' In front of the cradles, on two shores side of the ship, and in order to regulate the descent of the ship, and retard her progress should it become too rapid, two immense friction-drum, or capstans, have been constructed. The drum part of these machines, round which the main chains are coiled, are the largest and most powerful of the kind ever constructed. The drums are 18 feet in diameter, and are connected with the cradles by powerful chains 2½ inches in thickness of link, weighing 5 cwt. to the fathom, passing round double-throwed iron blocks in the framework of the cradles, and, with brakes, bearings, &c. weigh no less than 60 tons each. The whole has been fastened firmly by means of piles driven into the earth, so as to resist any possible strain that might be put upon them (?). They are, without doubt, the largest and most powerful of the kind ever constructed. The Ranges of the barrel which carry the chain serve for the brakes, they are about 1 foot wide, and 13 feet in diameter. Round these are bands, or straps, of wrought-iron, 12 inches wide, by 1 inch thick, which can be tightened up by means of levers, 15 feet long, worked by block pulleys. The chains, after being carefully wound upon the barrel, are passed through the sheaves, the two lower ones being attached to the cradle; the end is then secured to the timber framing which carries the whole apparatus, and is constructed in the strongest possible way. Nothing has been left undone to render this part of the 'tackle' as effective as it can be made. The frames which carry all this are constructed of timber driven to a depth of many feet into the ground, and strutting against the timber framing of the ways, the whole being held together by bolts and ties. In these framings are also placed the hydraulic presses which start the vessel. The necessity and efficiency of the 'check tackle' in controlling the descent of the vessel was fully proved at the first attempt to launch."

We find from the above that the "check tackle" and machinery were found to work admirably, and showed how completely the movements of the monster could be controlled, and that their necessity and efficiency in controlling the descent of the ship, were fully proved at the first attempt to launch. This, no doubt, reads well, and looks remarkably grand; but so far from their efficiency having been proved, or their having in any way been shown to be of the slightest utility in checking the ship, the contrary is satisfactorily proved by the fact, that when the ship stopped after her first movement, and at the moment it was reported that she was held by this "check tackle," there was, at least, one foot of slack between each cradle and check-drum.

Another circumstance has proved the complete uselessness of these costly appendages, viz.—that at every renewed attempt to launch, and with everything slack, and nothing to stop her but "friction," it has been found nearly impossible to start her, or keep her in motion with the overwhelming power applied to get her along.

Instead of carrying on a set of vagaries (dignified by the title of "experiments") with a couple of pieces of balk, some rails, and a few tons of iron, in order to "discover" (?) the amount of friction of metal upon metal, which, by-the-by, I remember was done some thirty years since by Morin and others, it would have been far better to have profited, in this instance at least, by the experience of others.

I should think Mr. Scott Russell must feel happy in having no share of the responsibility of this disastrous experiment in launching resting upon his shoulders.

The scientific public have already obtained an idea from your pages of the sort of secretary possessed by the company, and it is unnecessary therefore for me to say anything on that head. AN ENGINEER.

### EDUCATION AND PROFESSIONAL LIVES OF THE EARLY ITALIAN ARCHITECTS, PAINTERS, AND SCULPTORS:

AS CONTRASTED WITH THE EDUCATION AND PRACTICE  
OF MODERN TIMES.\*

We now come to one of those masters of three-fold practice, of which the history of modern art-practice has produced no example, viz.—Andrea Orcagna died, 1376—painter, sculptor, and architect. In the introductory lines of this life, Vasari makes the following remark:—"We seldom find a man distinguishing himself in any branch of art who cannot readily acquire the knowledge of others, more especially of those more immediately connected with that to which his attention was first devoted, and which proceeded, so to speak, from the same source."

Andrea was born in Florence; his father was a goldsmith, of whom he probably learnt drawing and modelling; he then went to study sculpture, under Andrea Pisano. He then made attempts at painting, both in fresco and distemper, in which he received instruction from his brother Bernardo. He soon

began to execute paintings: from the fame acquired by these he was appointed to paint in the Campo Santo at Pisa. During this time we hear of his executing certain sculptures in marble; then returning to Florence, he was employed as a painter. During this time he used to prepare designs for a brother, who was a sculptor: he then took to studying sculpture earnestly; and after this he (mark this, as in accordance with what I have said to be the secret of the success of the working of the system of the times) took also to studying architecture with the utmost diligence, "believing," says Vasari, "that he should find this also useful at some future day, as he did; for about this time the commune resolved to erect a building in which the citizens might assemble during the winter. A competition, which was a favourite method in those times, was set on foot. Orcagna's plans were found to be the best, and the building, commonly known as the Loggia de Lanzi, was immediately erected under his superintendence." Vasari mentions rather an important error in the placing of the Loggia, viz. that it faces the north, and in winter no one can remain in it for the sharpness of the wind, so that its primary purpose was frustrated. After this he returned to painting; but soon after it was resolved to erect the tabernacle in the Or San Michele; and resolving also that it should surpass all works of the kind before erected, in design, workmanship, and material, they, in accordance with the principle of selecting the greatest artist of the age, whatever may be his peculiar walk, says Vasari, "confided the charge of the whole to Orcagna, as being the most excellent artist of the age." He prepared several designs of the work, of which one was selected, after which those in authority gave up the carrying out of the work entirely to Orcagna. He then selected the first sculptors out of different countries to do the other parts of the work, reserving the figures for himself and his brother Bernardo, the painter. Thus we have a striking example of the practice of those times. Orcagna's work was equally good, whether in painting, as shown in his celebrated works in the Campo Santo; his skill in design and sculpture, as seen in the beautiful tabernacle in the Or San Michele; or his architectural design in the beautiful Loggia de Lanzi;—showing that the cultivation of the sister arts greatly assists in bringing out the powers of a man of genius in any one of them in which he may be engaged. We next come to one entirely given to sculpture, but whose works were so connected with architecture, and whose life throws so much light on the practice of the times, that I accept the plea that he was engaged with Brunelleschi in the works of Santa Maria, and include him with the architects to whom I allude.

Lorenzo Ghiberti (born 1381, died 1455, whose works I consider the models of architectural sculpture for the present day, and the casts from whose works in the Architectural Museum and at the Crystal Palace I particularly recommend to your notice as objects of special study) was born in Florence. His father-in-law was a goldsmith, and from him he acquired his art, in which he speedily surpassed his instructor; but his delight was in design and sculpture, and he soon began to employ himself in casting small figures in bronze, which he finished very gracefully: he took pleasure also in imitating ancient coins and medals, and taking portraits of his friends. After this we find him, having left the city on account of the plague, working in Rimini, after the indiscriminate manner of those times, as a painter, in conjunction with another in decorating a church. He, however, still worked at sculpture, executing reliefs in wax and stucco and other materials, well knowing, says Vasari, that such reliefs are the drawing exercises of sculptors, without practice in which they cannot hope to bring any great work to perfection. When the pestilence had ceased the signori and the Guild of Merchants resolved to proceed with the two doors of San Giovanni. To select a master to design and carry out these they had recourse to rather a singular mode of competition, the object kept in view being not directly to obtain the best design, but to find out the best man, in all respects; and consequently, in all probability, in the end obtain the best design also. To effect this they did not ask for the designs for the door as in an architectural competition, or for casts of the whole as in the late competition for the Wellington Monument; and, indeed, as in the sculpture competitions generally; but a large number of foreign and other artists being assembled in Florence, they began by selecting seven to compete; then selected a subject to be executed in bronze, and giving each artist a sum of money, they gave them a year to execute it in, and waited the result. When the time arrived, the seven specimens were given to the Guild of Merchants. At this time there were a large number of foreigners in the city,—some painters, some sculptors, others goldsmiths. The Syndics, setting an example that might well be followed by all competition committees at the present time, invited these artists to give judgment on

\* Read at the Architectural Association, by Mr. Drue, See p. 732, ante.



the works. The number of these with those of the same calling in Florence who were also invited, was thirty-four, all experienced in their several arts. These reduced the number to two, Ghiberti and Brunelleschi; but the final decision forms one of the most honourable records in the history of art, and will always shed a lustre on the two eminent artists, Brunelleschi and Donatello, both competitors, more than all their celebrated works. It shall be given in Vasari's words: "When Donato and Filippo saw the care and success with which Lorenzo had completed his specimen, they drew aside together, and conferring with each other, decided that the work ought to be given to him, because it appeared that the public advantage, as well as individual benefit, would be thus best secured and promoted; since Lorenzo, being very young, for he had not completed his twentieth year, would have the opportunity, whilst exercising his talents on that magnificent work, of producing those noble fruits, of which his beautiful story gave so fair a hope. They declared that, according to their judgment, Lorenzo had executed his specimen more perfectly than any of the other artists, and that it would be a more obvious proof of envy to deprive him of it than of re-titling to accord it to him." And would that the feelings with which all men looked upon the collected works of their fellow competitors were such as influenced these great men: zeal for the public advantage, that it should be served in the best manner possible; zeal for the art, that the man should be selected likely to carry out the work with the greatest beauty and perfection; and, finally, zeal for justice, that the premium should be given for the best work. If such were the feelings of competition committees, would there be any partiality or giving the work to relations or fellow-town-folk? For the considerations would be, will this design carry out most efficiently the purposes and intention of those who pay for it, and for whose use it is intended?—will this design further the art more than the others?—is it the most beautiful and complete, and will it reflect the most credit and fame on the architect employed, and the city or community for whom it is built? Then, if these facts are granted, it becomes no longer a matter of choice, but an obligation and matter of necessity, that this one and no other should be selected, or, to use Brunelleschi's words, "it becomes a more obvious proof of envy to deprive the artist of the charge and reward of carrying it out than of retitling to accord it to him."

This is the only code I would have binding on committees or competitors. When Lorenzo had completed this work, the Guild of Merchants gave him one of the statues on the Or San Michele, viz. of St. John the Baptist, but I shall not follow his works. Of his second door we have a cast in the Crystal Palace: he was continually employed in sculpture, but even he showed some of that versatility which seems to be a marked characteristic of the elder masters. We find he prepared a model in wood for the church of San Lorenzo, and that he gave his attention to various branches of art, and took delight in painting and working on glass: he made the windows round the cupola of Sta. Maria, and the three windows above the principal door; and, as I have previously mentioned, he was associated with Brunelleschi, his former competitor, in superintendence of that church. This, however, was an act of injustice, as Brunelleschi was the sole inventor of the way in which the work was to be carried out, and, therefore, alone capable of conducting it, while Ghiberti had never thought of it till appointed his colleague. He died at the age of sixty-four.

We have next to consider the education and practice of a great constructive architect, viz. Filippo Brunelleschi,—born, 1377; died, 1446. We all know his great work, his great inventive skill, his great constructive qualities, but I think most people would imagine his early education to have been other than what it was. Let us see. His father wished him to be a notary, but seeing that his mind was constantly bent on various ingenious questions of art and mechanics, he made him learn writing and arithmetic, and then placed him in the Guild of Goldsmiths, that he might learn the art of design of a friend of his. See how important this was thought in those times! No man was expected to rise in any branch of art or constructive science that had not been previously grounded not merely in the art of drawing, but modelling, or some special useful practical branch, such as sculpture or painting. He soon showed so much skill in setting precious stones, and in designing and executing figures in silver, that his first work was executing two figures of prophets, for the altar of San Jacopo di Pastorja. He seems, however, always to have had a considerable mechanical turn in his mind, as we find his attention occupied by the computation of the divisions of time, adjustment of weights, and movement of wheels; making several watches with his own hand. He was then seized with an earnest desire to attempt the art of sculpture, which

led to his intimacy with Donatello: he then, says Vasari "gave his attention to many professions; nor had any long time elapsed before he was considered by many good judges to be an excellent architect. At that time a statue of Linden Wood was required for the monks of San Spirito. Brunelleschi, being desirous to prove that he could execute large works as well as small, undertook this. He then gave considerable attention to the study of perspective, the rules of which he much improved. We next find his active mind busy studying the Scriptures, and the works of Dante. At this time it was that flogging fault with a crucifix of Donatello's, he received the answer of "Take wood, then, and make one thyself," which he did, and Donatello confessed himself beaten by the one produced, which is now on the altar of the chapel of the Gondi. We next come to the competition for the doors of San Giovanni, he also at this time made a design for the marble pulpit in the church of Sta. Maria Novella. But the study of architecture was now becoming preeminent with him, and, selling a farm which he possessed, he set out with Donatello to study at Rome. And now we begin to find the influence of the change from Gothic to Classic, from picturesqueness to measured proportions, from artistic design to mechanical imitation. "For," says Vasari, "they instantly made preparations for measuring the cornices, and taking the ground plans of these edifices, Donatello and himself labouring continually, and sparing neither time nor cost: no place was left unvisited by them either in Rome, or without the city, or in the Campagna; nor did they fail to take the dimensions of anything good within their reach." Again he says, "Filippo had two very great purposes on his mind, the one to restore to light the good manner of architecture, which, if he could effect, he should leave no less a memorial of himself than Cimabue and Giotto had done; the other was to discover a method for constructing the cupola of Sta. Maria del Fiore, in Florence, the difficulties of which were so great, that after the death of Arnolfo Lapini, no one had ever been found of sufficient courage to attempt the vaulting of that cupola, without an enormous expense of scaffolding. He did not impart his purpose either to Donato, or any living soul, but he never rested while in Rome, until he had well pondered on all the difficulties involved in vaulting the Pantheon, and had maturely considered the means by which it might be effected." We have also from Vasari an instance of the value of possessing a handicraft in the midst of his studies, we find, like many an artist-traveller in the present day, "that the money of Filippo falling short, he supplied the want by setting precious stones for goldsmiths who were his friends." And now came the occasion for which Brunelleschi had so diligently prepared himself. An assembly of architects and engineers was gathered in Florence by the superintendents of the works of Santa Maria del Fiore, to consult on the best means of raising the dome. I have not time to enter into the difficulties, the discouragement, the ridicule of his scheme as impracticable, and other obstacles that Brunelleschi met with before he could bring the authorities to entrust him with the work that he had so long set his mind on. We all know the result, and the details you can read for yourselves: sufficient has been quoted to show the character of the man and the practice of the times. One more anecdote I will, however, give, to show that his love of art was as great as his mechanical skill. Donatello having described an antique vase at Cortona, "he became," says Vasari, "inflamed with such an ardent desire to see it, that, impelled by the force of his love of art, he set off as he was, in his mantle, his hood, and his wooden shoes, without saying where he was going, and went on foot to Cortona for that purpose. Having seen the vase, and being pleased with it, he drew a copy of it with his pen, and returned therewith to Florence before Donato or any other person had perceived that he had departed—all believing that he must be occupied in drawing or inventing something. Having got back to Florence, Filippo showed the drawing of the vase, which he had executed with much patience, to Donato, who was not a little astonished at this evidence of the love that Filippo bore to art." To show his great zeal and activity in his long-cherished work, I will quote the following out of a lengthened description. "Perceiving the building to proceed rapidly, and finding all his undertakings happily successful, the zeal and confidence of Filippo increased, and he laboured perpetually: he went himself to all the ovens where the bricks were made, examined the clay, proved the quality of the working, and when they were baked he would select and set them apart with his own hands. In like manner, while the stones were under the hands of the stone-cutters. He would look narrowly to see that they were hard and free from clefts; he supplied the stone-cutters with models in wood and wax, or cut hastily on the spot from turnips, to direct them in the shaping and juncture of the different masses. He did the

same thing for the men who prepared the ironwork. During the time that this building was in progress he made models with his own hand for many works. He died at the age of sixty-nine, and was buried in Santa Maria del Fiore.

Let us pass on to his friend Donatello, born 1386; died 1468, who, though he studied architecture with him in Rome, still continued to practise principally as a sculptor.

Vasari says "that he devoted himself to the arts of design, and was not only an excellent sculptor and admirable statuary, but was besides very skillful in works of stucco, well versed in the study of perspective, and highly esteemed as an architect. Like those of Ghiberti, his works, as shown in the few casts in the Crystal Palace, and also in his works I have seen at Florence, appear to me to be especially valuable as models of modern architectural sculpture, and, belonging to a transitional period, they are precisely of that type of perfect sculpture which harmonizes with Gothic architecture, and yet equally with Italian; and I would specially recommend the casts in the Crystal Palace to the notice and study of young architects and architectural sculptors. Nothing is specially known of his education, nor is there anything particularly worthy of note in his practice, except his extraordinary and unending industry. The number of his works is extraordinary. The St. George, at the Or San Michele, is one of his most beautiful works, a cast of which is in the Crystal Palace.

Alberti was an architect alone, and known chiefly by his writings. He was fairly skilled in painting, though he did not practise it, and wrote on that art also. Both his education and practice show signs of transition to the present mode of education and practice. Vasari says, "he gave his attention not only to the acquirement of knowledge in the world of art generally, and examinations of works of antiquity in their proportions, &c. but also, and much more fully, to writing on these subjects, to which he was by nature ordained, rather than to the practice of art."

That is to say, like many of the present day his knowledge of art was more that of the scholar and antiquary than of the practical executant, such as the sculptor or painter, and even the architect conversant with these arts; and, according to Vasari, his practice showed his want of this sort of knowledge, for we find the following passage:—"Leon Batista would not have fallen into this error if to the knowledge he possessed and to his theories he had added the practice and experience acquired by actual working: another would have taken pains to avoid this difficulty, and sought rather to secure grace and beauty to his designs."

That is, that when a man is taught the theory of architecture alone, and the manner in which those of bygone times worked, and to this adds human knowledge of construction, and mathematical skill, his work is apt to be more scholarly than artistic, as in this instance to which Vasari alludes, viz. theapse of the Nunnziata in Florence, in which Alberti thought more of the different intricacies of the plan and the correctness of the proportions, according to the antique than to the beauty and happiness of the effect of his building.

Bramante, painter and architect, &c. began his education by studying the works of Fra Bartolomeo, but being more inclined to the study of architecture, he moved from Urbino to Milan, for the purpose of examining the Duomo. His first work in Rome was to paint the arms of the Pope in fresco over the door of San Giovanni Laterano: he then studied the antiquities, making accurate measurements, and in no long time had examined and measured all the buildings of antiquity in Rome and in the Campagna, also in Naples, and wherever ancient buildings were to be found. He thus attracted the notice of the Cardinal of Naples, who appointed him to rebuild a cloister in Trastevere: he was thus introduced to the Pope, and finally prepared the first design for St. Peter's. We see that by this time the mode of education and practice had much altered, and that, though we find this architect brought up as a painter, yet his subsequent education did not differ much from that considered necessary a few years ago. The change that was fast coming over the practice of architecture is seen in the education of Antonio San Gallo, who, brought up as a carpenter, studied architecture under his uncle, an architect, and afterwards became assistant to Bramante, who used to give him sketches and descriptions of buildings, which he left him to carry out. He succeeded his master in the works of St. Peter's.

Raffaello, painter, architect, and sculptor. We find that the more exalted geniuses, even at this time, adhered to the practice of the earlier masters; and whether their chief art was painting, as in the case of Raffaello; or sculpture, as in the case of Michelangelo; they more or less practised the other two arts, as opportunities occurred. Raffaello was educated first by his father, whom he at a very early age assisted in his works; and then by Perugino, who was himself a pupil of Andrea Verocchio. His first archi-



tectural works were designs for the ornaments in stucco for the Loggia. He also gave designs for a villa for the Pope, and a palace for the Bishop of Troia, in the Via di San Gallo, in Florence; he gave a design for the stables of the Clugli Palace, and for the chapel of that family in the church of Sta. Maria del Popolo: he was employed to superintend the works of St. Peter's; and was much interested in the clearing and discovery of the antique remains of Rome, in measures for the restoration of which he was much occupied at the time of his death. His pupil also,—

Giulio Romano, being his favourite pupil and assistant, though first educated by him as a painter, followed his master's mode of practice; for Vasari says, "Proceeding thus in the service of Raffaele, his master, and acquiring a knowledge of the most intricate difficulties of his art, which were taught to him by Raffaele with the utmost affection and solicitude [to how few masters can these terms be applied], Giulio soon became to be able to draw perfectly in perspective, to measure edifices, and take plans of buildings: Raffaele frequently designing and sketching certain inventions after his own fashion, which he would then leave to Giulio, to the end that the latter might complete them on an enlarged scale, and with the exact measurement and proportions, so that they could afterwards be used by his master in his architectural undertakings. In these last-mentioned labours more particularly, Giulio Romano soon began to take a great delight, and devoted his attention thereto in such sort that, when at a later period he exercised the vocation of an architect, he proved himself to be a very excellent master." Raffaele's mode of practice in giving rapid sketches of his designs was rather different to that of Giotto, who prepared models, even to the details and sculpture, with his own hand. Yet both were painters: Raffaele, indeed, executed more works in architecture than Giotto. What made their practice so different? In the first place, the old Gothic habit of extreme care was fast disappearing; and, in the second, the imitation of the antique, and the prevalence of measured proportions, rendered the completion of the master's first ideas by another hand more easy, when they were peculiar arrangements of known proportions, than when they were burning thoughts from the mind of the master, so connected and influencing the whole structure, that another hand could not complete them.

The practice of Giulio Romano was peculiar, as he designed many buildings, and decorated them with frescoes by the hands of himself and his disciples, as we may gather from the following quotation:—"This artist produced so many designs, both in Mantua and other places, that their amount appears incredible; but as we have said, there could be no palace or other building of importance erected, more especially within the city of Mantua, unless it were constructed after a design by him. He rebuilt the church of San Benedetto, in Mantua, a very large and rich edifice, belonging to the Black Friars, and situated on the old walls, near the river Po; after his designs, also, was the whole church embellished, and adorned with beautiful pictures and fine paintings in fresco." We also find that designs for "tapestry and cloth of arms" were made by him: indeed, he would never, says Vasari, refuse to set his hand to the most trifling matter, an example which, if followed by artists at the present time, would cause our common-place and every-day things of life to be much better designed than at present.

His master was earnestly solicited to return to Rome, and undertake the works at St. Peter's; but while the negotiation was pending he died. As an illustration of the different works then given to the charge of the architectural artists of those days, you will, perhaps, pardon the following quotation:—"When the Emperor Charles V. arrived at Mantua, Giulio made many magnificent preparations for his reception, by order of the duke: these consisted of arches, perspective scenes for dramatic representations, and various matters of similar kind; for never was there any man, who, in the arrangements of masquerades, or the preparation of extraordinary habiliments for jousts, festivals, and tournaments, displayed fancy and variety of resource such as he possessed: this was acknowledged with astonishment and admiration at the time by the Emperor Charles, and by as many other persons as were present."

San Micheli, the great architect, but greater military engineer, acquired the first principles of architecture under his father and uncle. There is a difference in the words used by Vasari in speaking of these later masters: in these it is "acquired the first principle of architecture;" in the lives of the earlier ones, it is "acquired the first principles of art;" a very good distinction, as the later masters principally studied the antique buildings, to learn the principles upon which they were erected and ornamented, with a view to produce similar buildings, and combined this knowledge with the science of construction or

building; while the others not only learnt the principles, but the practice of all the decorative arts, and then learning the science of building became practical producers of original buildings, never satisfied unless some new and original thoughts distinguished their buildings from all that preceded them. But to return to San Micheli: he completed his education by visiting Rome, for the purpose of studying and measuring the antiquities.

Michelangelo Buonarroti, sculptor, painter, and architect. I have said that all the men of extraordinary genius, even in the later times, adopted the custom of a three-fold practice: thus we find that Michelangelo, placed with a master to learn painting, was induced to study sculpture by his admiration of the antique statues in the garden of Lorenzo de Medici; and after long practice in these arts, he erected the sacristy and new library of San Lorenzo, at Florence; that he was also much employed in rebuilding and strengthening the fortifications of that city; and that finally he was invited to undertake the superintendence and sole direction of the works at St. Peter's. He was, however, loth to undertake so great a work, saying, "that architecture was not his vocation;" but being commanded to do so by the Pope, he prepared the model. (I suppose his reluctance arose from the labour of so large a work at so advanced an age, being over seventy at the time, and also from its leaving him so little time for his other vocations). "At length," says Vasari, "the Pontiff issued an edict, by which he appointed him superintendant of the fabric, with full authority to do and undo, decrease, extend, or change, as it should seem good to him; and furthermore commanding that the whole government of those who were employed under him, should be in his hands. Hereupon, Michelangelo seeing the confidence which the Pope placed in him, desired to prove himself worthy, and had a clause inserted to the effect that he performed his office for the love of God, and would accept no reward;" though, according to Vasari, his means were very limited. What a glorious end for a great man—what a beautiful finish to his extraordinary and active life! At seventy-four we find the veteran artist giving all the skill, art, and experience derived from a long life of three-fold practice, to erecting a church wholly to the glory of God. During the last fifteen years of his life, he erected many works in Rome. And now we come to one of the last of the artist architects.

Sansovino, in whose works there is an artistic spirit which, when I was abroad, delighted me more than any other work of the same period, was brought up as a sculptor with Jacopo, of Monti. Sansovino was a sculptor and an architect. It is worthy of note, in passing, how many great men were brought to light, or obtained honour, by working at the statues and other decorations of the Or San Michele. Sansovino attracted notice by a model that he prepared for one of the statues, as, though another obtained the commission, as the elder master, Sansovino's was the most beautiful, in consequence of which he was taken to Rome by Giuliano San Gallo, architect of Pope Julius II. Now, when Jacopo came to Rome, what charmed him most; and what did he earnestly set himself to do? To measure all the antique buildings? No! Vasari says, "when," that is to say, when he had been brought to Rome, "the statues of the Belvedere attracting him beyond measure, he set himself to copy the same. Now Bramante, who was also architect to Pope Julius, holding the first place, and having rooms in the Belvedere, chanced to see the designs of Jacopo, with a nude figure of clay in a recumbent attitude, holding a vase for ink, which he had also made, and these things pleased him so much that he began to favour the youth, and ordered him to make a large copy in wax of a certain subject, which he was also having copied by other artists, intending to cast it in bronze. When all had completed their work, Bramante showed the models to Raffaele Sanzio, inquiring of him which he thought the best. It was then judged by Raffaele that Sansovino had greatly surpassed the others, wherefore, by the advice of Domenico, Cardinal Grimani, Bramante was commanded to have the model of Jacopo cast in bronze." After several works in sculpture, he made designs for several triumphal arches to celebrate the arrival of Leo X. at Florence; and, in company with Andrea del Sarto, he was employed to decorate temporarily the unfinished façade of Santa Maria, after which he was almost constantly employed in architecture. \* \*

We have now considered how the architects of some of the principal and most admired buildings in Italy were educated, what sort of men they were, what they considered necessary to the perfection of their art, and what different occupations they considered compatible with the study and practice of architecture. We find that the architect of Santa Maria del Fiore was educated by a sculptor, and learnt drawing and design under a painter; that the architect of St. Antonio, at Padua, was a sculptor; of the Santo

Campo, a sculptor; also that the Giotto campanile was the work of a painter, at the end of a long life devoted to painting; that it was carried on to completion under the superintendence of a painter; that the same hand that covered the walls of the Santo Campo, at Pisa, with frescoes, designed and superintended the erection of the Loggia de Lanzi, and designed the beautiful tabernacle in the Or San Michele, even to a new method of fitting and joining the stones; while at the same time he executed the chief and most beautiful of its sculptured ornaments. That the same man who defeated the far-famed Donatello in his own art, and was second in the celebrated competition for the doors of the San Giovanni, conceived and executed the boldest thought of constructive skill that the history of architecture can show; while the first architect of St. Peter's was educated as a painter; the second was the greatest painter that the world had produced; and the final director of the works, and author of most of the present building, was equally a king among painters and sculptors. Thus we see wherein is the difference between the education and practice of those days and that of our own times. It seems to me to be in the simple difference of opinion as to what amount of knowledge of the sister arts is requisite to make a good architect. Now, I will put it to you: you have both systems before you; you see how our present one has gradually arisen, from the observance of filed rules and measured proportions in the study of the revived Classic architecture. The results of which of the two do you prefer? Is there not in the present time, and has there not been for ages, a greater lack of originality than formerly? Are not any two buildings in the same styles you can point out more alike and less stamped with the individual mind and genius of their respective authors? Then, again, do not the merits of many of our buildings rest more upon their display of antiquarian research and archaeological knowledge, than upon the grace and beauty of their proportions dependent upon the long and carefully-trained eye of the artist, or than upon the beauty and richness of their sculpture, which only masters in the art could produce, and only the same hand that planned the building could design and arrange with harmony? It is true that there is a greater movement in that direction at the present time; but to whom are we principally indebted for that? Is it not to those young architects who at the time they belonged to our class of design, showed a greater power of artistic drawing and colouring than had been seen for many a long year in the profession? But the improvement is as yet with the few. The many are divided into the designers—shall we call them rather the arrangers—according to the precedent and old models in both Gothic and Classic styles, and those who, for the sake of apparent originality, sacrifice good taste. Now what remedy for this state of things do the lives of these great men suggest? To see this, let us begin at the starting-point of a modern architectural career, and see what practical additions and antidotes the consideration of their education and practice would suggest to the present usual mode. The young architect comes from school,—a fair amount of school knowledge, and probably (or else he would not have chosen the profession) with a small amount of skill in copying drawings, into an office where everybody is busy, and nobody has much time to attend to him. Well, what is he first set to do? According to the office he enters, he may either be set to copy "Pugin's Examples," or "Chambers's," or other measured representations of old works of different periods. Now this is useful in two ways, if properly taken advantage of. It teaches geometrical drawing, and, at the same time gives them a knowledge of the buildings of old time, and is only hurtful if it gives him an idea that he will have attained the height of architectural excellence, if he can in after-life reproduce these buildings, or even buildings adapted to his purpose. With these details let him, therefore, work at these with all his might: if he is to copy them, let him copy them with all his might. Many of us, I doubt not, now regret we wasted time which would have perfected our power of geometrical drawing, exercised our mind in correctness and precision, and given us an intimate knowledge of those valuable examples of ancient art, which never can be lost time as long as we keep in their real use. But while at work at them, we should always remember that it is the general principles of taste and design involved in the production of these works—not their actual proportions or details—that ought to be useful to us in after-life. For instance, that in the Norman and Byzantine styles, it is the simplicity and massiveness of their piers and arches contrasted with the richness of appearance and varied forms of the carved ornaments that is so kept in mind—not whether the arch is round or the moulding fretted; that in the Early Gothic, grace of general proportion of the arches and piers—not the exact form of the mouldings; and that the lesson to be learnt while drawing the carved foliage in the Early Decorated capitals in



Pugin's or Collings's Gothic ornaments is the use of natural foliage when designing capitals for yourselves. From the Greeks you can derive the general principles of purity, of vast and perfect sculpture, and from the Romans the general principles of richness of ornament and profusion of sculpture; but I would advise the young student as speedily as possible to make himself useful in the actual practice of the office, for that after all is the legitimate teaching of the office, and that which at the present time it is principally capable of imparting, and in this let him imitate the masters whose lives I have brought before your notice, for we see that they speedily learnt all that their masters could teach them, and soon raised themselves from pupils to disciples or assistants. But I have said that the practice of the office is all that can be learnt in it, as if there was still something more to be learned. It is because we must remember that while we are copying engravings of ancient buildings, while we are making drawings from the direction, or from original drawings of our masters, we are not exercising our imagination and invention, taste, or faculty of choice.

Then what is to be done? Let us consider what the men did whose lives we have been considering, and we find that, although they, like ourselves, were placed with masters to learn the different arts with which they began their professional lives, they were after all principally self-taught. I would, therefore, advise those who are still in an office to exercise in the evening those faculties that have not been used during the day with some different art or occupation: for instance, while they are at their elementary work during the day of learning geometrical drawings, to exercise themselves in the evening with the freehand drawing from leaves and other natural objects, and from casts, as in the Architectural Museum, which I particularly recommend to their notice. While engaged during the day at copying such works as Pugin's or Collings's Gothic ornaments, let them get some clay or a piece of Cast stone, and try to produce, in full size capitals and other ornaments (having natural leaves by them), similar to those which they have been drawing during the day, and this for at least an hour each evening previous to beginning the study of the necessary books on construction and other subjects, without which they can make no progress. While copying at the office any of the outline engravings of Greek sculpture, they should try in the evening, while studying books on the proportions of the human figure, what sort of a figure they can produce in clay of the like proportions of their day copies. When they have got into the regular work of the office, they should vary their evening's exercises by availing themselves of the power of modelling they will by this time have acquired in making models of buildings that they are engaged in at the time in the office, practising the perspective they have learnt in copying them, and studying them in different positions. Then in visiting the buildings of their masters in town or the neighbourhood, they would do well to watch carefully the carvers at their work, and in the evening endeavour to surpass them in design and execution, and to note the construction of arches, roofs, floors, church-seats, and other points of construction and ornament, while in the course of construction, and while their mode of joining and other particulars can be seen; when at home, endeavour to make models of them in wood and other materials, and also plans, drawings, and models of designs of their own. In the vacation and other leisure time in the summer, they should fill their sketch-book with the works of nature, rather than the works of man. They should seek to know all the leaves of the forest, and all the curves of the trees; the foliage of the ferns on the rocks, and the forms of the birds on the branches; and upon their return home, let them endeavour to reproduce them in their clay or stone. Let them learn outline from the mountain, and colour from the heaths and the mosses; and they will, to a considerable extent, have supplied by the evening and vacation study the deficiencies of an office education; and I am sure that their first building will show that much has been effected. And let me also point out that they will have qualified themselves for profitable employment in designing for manufactures, and also the smaller objects of architectural design, such as monuments, memorial crosses, and many other works, while they are yet deemed too young and inexperienced to be entrusted with the erection of large buildings. Perhaps the older members and those who are no longer pupils, will allow me to remind them that the masters in question were always learning. If they consider that any of the acquirements thought necessary of old would be useful to them, I should advise them to begin at once, and that it would be in accordance with their principles if we each of us took stock of our qualifications for the art we are practising, to hope to practise; and let him who is accomplished in design and the art representation, but deficient in practical knowledge, not be the least ashamed of

beginning that study at its very beginning, while those that on the contrary are well skilled in construction, but as it is often the case, deficient in design, begin at once to exercise their imagination, and improve their hand in drawing. We all of us have our weak points: let us, that the art of our age may be of the best, each of us begin to fortify our weak places, and supply our deficiencies. And there is one branch of our art that we have all neglected, viz. the study of sculpture and use of models, for the remedy of which I will conclude by proposing that, in our new quarters at Conduit-street, two new classes be formed on the principle of our present class of design, viz.—an architectural sculpture class, or class of design in the "Round," and a class of constructive modelling; also that steps should be taken for establishing in the rooms, and in connection with the Architectural Exhibition, an annual exhibition of architectural sculpture. As in the well-known, and I hope much-loved, words of the poet:—

"Lives of great men all remind us,  
We can make our lives sublime;  
And, departing, leave behind us  
Foot-prints in the sands of time;—

Let us then be up and doing,  
With a heart for any foe;  
Still achieving, still pursuing,  
Learn to labour, and to wait."

#### CHURCH-BUILDING NEWS.

**Wells, Somerset.**—St. Thomas's church, which has been erected to the memory of the late Dr. Richard Jenkyns, Master of Balliol and Dean of Wells, at the cost of his widow, who died also in June last, is just completed, and was consecrated on the 21st inst. by Lord Auckland, the diocesan. The plan is a parallelogram, the east end terminating in a five-sided apse, a north aisle, gabled, and a north-western tower and spire. The easternmost bay within the apse is appropriated to the chancel and sanctuary, with a breast-wall of stone dividing it. There is a south transept for the children of the schools. The materials employed are the local stones, being cream-coloured, brown, and grey, which are alternated in the walling, and all the freestone work is of Doulton stone. The interior of the walls is ashared with Doulton stone, having all the arches alternated with Hare-hill stone, and the shafts of the arcading are of blue lias. The exterior presents an Early Decorated church, with its nave and gabled north aisle, north porch, and light-gate; a tower, with its enamelled clock-face beneath a canopy, and its high belfry windows, treated after the manner of the Western churches, surmounted with an octagonal spire, gabled on the cardinals, and pinnacled at the angles, all richly carved and decorated. On a lower stage the buttresses are terminated with sculptures of the Evangelists. The apsidal end is parapeted in tabernacle work, and the roof rising therefrom terminates with a metal cross. The interior has its five apsidal windows occupied by stained glass, by Wailes, presented by the members of Balliol College, the subject being five types and anti-types; and the next window westward, on the south side, is by Clayton. All the other arches are glazed with a floriated glass of colour, by Wilmshurst. The reredos is constructed of stone and Devonshire marble, enriched with mosses, and the empacelling is executed in gold and colour by Fisher. The pulpit is of stone and marble, and also the font, both by Forsyth. Parts are enriched with gold, and the pulpit has a book-tray of wrought brass. All the fittings are of oak. Mr. Teulon was the architect; and Mr. Davies, of Langport, the builder.

**Broxbourne.**—The interior of Broxbourne church has now been restored, as well as the exterior. The chancel, North chapel, and South chapel, or aisle, have been restored at the expense of Mr. G. J. Bosanquet and Mrs. O'Brien. The cost of restoring the nave and aisles has been defrayed by means of a rate, subscription, and grant. The works have been carried out from the plans of Mr. Clarke, the diocesan architect. All the seats are low and open. The chancel and aisles are arranged stall-wise, with carved poppy-heads, and traciced and panelled fronts. The east wall is diapered and painted, the first bay being enclosed with screens. All the woodwork is stained and varnished. The whole of the stonework with the plastering has been restored and renewed. The work has been performed by Mr. Ringham, of Ipswich, and Mr. Pulliam, of Broxbourne. Two new painted windows, by Powell, have been placed in the Saye chapel by Mrs. O'Brien; and it is intended to raise a subscription to fill the west window in the tower, by Lavers. A memorial window, by Willement, has also been placed in the north aisle.

**Blackpool.**—The exterior of the new Roman Catholic church, as described by the *Preston Guardian*, is built with York flag, in narrow courses, hammer-dressed and tuck-pointed, with Minera stone dressings. The interior is worked in Minera and Longridge stone, which, from its colour, is said to give the

church a sombre effect. The plan of the edifice consists of a chancel, north and south transepts, Lady Chapel, two sacristies, confessionals, nave, aisles, south porch, and central western tower. The chancel contains an east window, of five lights, which terminates in tracery; four side windows, of three lights each, with wrought and moulded shafts. The chancel is separated from the nave and transepts by a moulded arch. The Lady Chapel contains three windows, arranged to harmonize with the reredos. This chapel is said to be too small and unimportant compared with the rest of the church. The nave is divided into five bays of 15 feet each. Above each arch rise two clerestory windows, which are connected with and connect the windows with the corbels, supporting the principals of the nave roof, the legs of which run down and subdivide the clerestory wall. The aisle windows are of three lights, each of the transepts containing a large window of four lights each: a similar window also occupies the west end of the church. The western tower rises to the height of 124 feet. A spire would tend to remove the somewhat stilted effect of the angle pinnacles. Almost the whole of the windows are filled with stained glass, by Capronin, of Brussels, Barnett, and Wailes. The first is the author of the east window, which is of a later date than the rest of the building, setting at defiance all true principles of glass staining, says the *Guardian*. The side chancel windows, by Wailes, it adds, possess neither truth of drawing nor taste in colour. The clerestory windows, by the same artist, are designed with more care and judgment. The aisle windows are by Messrs. Barnett. The edifice is in the Decorated style of Pointed architecture, measures 130 feet in length, and is 54 feet broad across the transepts. The nave is 60 feet high: the chancel is 24 feet by 18 feet. The rest of the church is in proportion. It is situated in Talbot-road, Blackpool, leading directly from the railway station. Mr. Yates, of Liverpool, contracted for the entire building, which has cost, independently of the internal fittings, the sum of 5,500*l*.

**Sheffield.**—St. Stephen's church, Netherthorpe district, has been opened. It is situated at the junction of Fawcett-street and Bellfield-street. The edifice, according to the *Independent*, is in the Gothic style of architecture, of the geometrical period, and is in the form of a cross. A tower is placed at the intersection of the nave and the transepts, supported by four internal arches. There are no aisles, and the pews or stalls are ranged on each side of the nave and transept. There are three small galleries, one in each transept, and at the end of the nave. The pulpit, reading-desk, and chancel fittings, are in carved oak, and, along with the font, have been manufactured by Mr. Shaw, of Saddleworth. The roofs are of open timber, which, as well as the stalls and galleries, are stained oak and varnished. There is a vestry on the south side of the chancel, and also a small organ chapel opening into the chancel and transept by an arch. The whole fabric, with its organ and internal fittings, is the gift of Mr. Henry Wilson, of Sharrow, and has cost about 4,500*l*. The architect was Mr. Flockton, and the builders Messrs. Dutton and Heald.

#### STAINED GLASS.

**Cork.**—The chapel belonging to the community of Christian Brothers here has been decorated, and the whole of the windows, six in number, have been filled with stained glass. There are twelve medallions, each containing an emblem of the Passion. The ground is of ornamental quarry work, each having on it a symbolic pattern, and the whole is surrounded with coloured borders. The stained glass was executed by Messrs. Edmundson and Son, of Manchester.

**Penzance.**—A three-light window has just been completed by Mr. Wilmshurst, for the church of Madron, near Penzance. It contains three subjects beneath canopies,—Elijah raising the Widow's Son, the Resurrection of our Lord; and Mary speaking to Christ after the Death of Lazarus. Beneath is a brass, with inscription, showing that the window was erected to the memory of Major Robyns.

#### PROVINCIAL NEWS.

**Bawtry.**—A new infant school has been opened at Bawtry. It is a very plain and unpretending erection, and has been built at an expense of 352*l*. The architect was Mr. J. G. Weightman, of Sheffield; and the builder Mr. Howard, of Bawtry.

**Loddon (Norfolk).**—Tenders for new schools, at Loddon, Mr. James S. Benest, of Norwich, architect, have been received. There were seven tenders, ranging from R. Steward, of Yarmouth, 911*l*. to Griffin, of Norwich, 719*l*. The last-named was accepted.

**Worcester.**—The new water-works, at Pope Iron, will be opened in a week or two. They consist of engine-house, boiler-house, and cottage for engine-driver; two subsiding tanks, with strainers; three sand-filters, a pure water-tank, &c. The engine-



house, boiler-house, chimney-stack, and cottage, are brick structures, with Bath stone dressings. The subsiding tanks and filters are of hard bricks, and the walls coped with Derbyshire grit stone. From the pure water-tank the water is pumped into the main leading through the city to a reservoir on Rainbow-hill, by which the pressure will be kept up constantly during the night, and at such times as the machinery may not be in motion. From the engine-main, branch mains, extending to about 17½ miles in length, are laid throughout the whole district. The vaulted reservoir is placed at Rainbow-hill. The contractors by whom the works have been executed are—For engine-house, filters, &c. at Pope Iron and Rainbow-hill, Messrs. Chambers and Hyllon, of Birmingham; engines, boilers, pumps, and machinery, the Haigh Foundry Company, Wigan; iron pipes, Mr. Barrow, of Staveley. The hydrants and valves were supplied by Messrs. Simpson; and the pipes, &c. were laid by Mr. Aird, of London. The whole of these works were designed by Mr. Hawkley, of London, and carried out under the superintendence of his resident engineer, Mr. Purchas, Mr. Henry Lucy acting as clerk of the works.

**Swansea.**—The Swansea poor-law guardians have decided to build a new union for the aged and decrepit poor of the town and district, with the approbation, it is believed, of the great majority of the ratepayers; but a meeting in opposition to the scheme is announced.

**Manchester.**—The unemployed here have been set to work to mend the roads, &c. the expenses to be paid from the highway rate. Between forty and fifty men have been already set to work, and thus made independent by their own labour, and kept from crowding to an overflowing workhouse.

**Bakewell.**—The Duke of Rutland has provided Bakewell with a partly new town-hall, in which the magistrates' meetings and county courts are now held, and which is adapted for public meetings, lectures, concerts, &c. The principal apartment is 50 feet long, 24 feet wide, and 18 feet high, to the cove of the ceiling: this room is lighted by twenty lattice windows and two skylights, the latter also acting as ventilators. The ornamented roof is partially supported by iron pillars painted to resemble Sienna marble, and the entire screens and divisions of compartments are executed in panelled wainscot, and painted like oak. The portion of the hall allotted to the use of the public is provided with seats for 300 or 400 persons.

**Nottingham.**—St. Matthew's schools are now approaching completion. The walls are built of Croywell (blue) stone, from the immediate vicinity. The dressings, labels, and copings are of Ancaster stone, the whole being upon a base of patent moulded red bricks. The chimneys are of red brick, octagon on plan, with moulded caps and bases: the roofs are covered with blue and red Staffordshire tiles, in alternate bands. The buildings consist of mistress's residences, girls' and boys' schools, all with separate lobbies, entrances, and class-rooms. An entrance gateway has been erected, leading from Wollaton street, ascending up a flight of steps to the right and left hand and meeting in the centre, at a height of 15 feet, or half the height of level. The architect is Mr. Chas. H. Edwards, and the contractor Mr. Hill, of Nottingham.

**Manchester.** Adj. to the town-hall, in York street, Cheadam, preparations have been making for an extensive building, intended exclusively for the balls and parties connected with the "Manchester Assembly Rooms" of former days, a new and select society, according to the *Corier*, having been recently organised. The building will have a frontage of nearly 100 feet, and will cover about 1,100 square yards. The rooms, which will all be on one level, will comprise a ball-room at the back, extending nearly the entire width of the building, 81 feet by 31 feet, exclusive of recesses for seats, orchestra, &c. and 40 feet high; card-room, reception-room, ante-room, refreshment-room, cloak-rooms, vestibule, &c. The chief outlay will be spent upon the interior. The front will be of brick, with stone dressings, in which some novelties of design will, it is said, be introduced. The projecting portico will be formed of pilasters and open arches filled with ornamental ironwork. A stone cornice and pediment will surmount the façade. A tower, similar to an Italian campanile, will adorn the north side, the primary object of which will be to act as a chimney and ventilator. There will be a large fan in the cellar to assist in passing fresh air into the principal rooms, as on assembly nights (says the *Corier*), it is not improbable that the luxury of scented air may be indulged in. A covered carriage-drive will be erected in front of the Assembly-rooms. Upon the ball-room will be lavished the utmost extent of decoration consistent with good taste and a chaste effect. The floor will be constructed so as to ensure a sufficient degree of springiness to the tread of the dancers. There will be an abundance of wall surface for deco-

ration. Messrs. Mills and Murgatroyd are the architects, and Messrs. Bellhouse the contractors, who have sub-let the brickwork and excavating to Messrs. Rutherford and Lamb, and Messrs. Kelly and Evans. The work of excavation is progressing, and the hard clay, of which the ground entirely consists, it being intended to have lofty and roomy kitchens, larder, supper-room, &c. below the principal suite of rooms. The bricksetters' work was at a stand for a time in consequence of the strike.

**Salford.**—A new clock is being placed in the tower of Trinity Church, Salford. It will have four dials, 5 feet 8 inches diameter: they will be illuminated with gas at night. The town council are defraying the expenses. Mr. Bailey, of that place, is the maker.

**South Shields.**—The South Shields Cemetery chapels are approaching completion, and will be ready for use by the commencement of the new year. Each chapel has a tower and spire. The upper part of each tower is an open lantern, having twelve lights, and finished with a panelled parapet; and the lower part forms the entrance porch to the chapel. The angles of the towers are surmounted by crocketed pinnacles, from which spring flying buttresses. The carving is all from natural types, comprising imitations of the maple, ivy, convolvulus, vine, lily, &c. and is well executed. The style of the buildings is Decorated Gothic. The architect is Mr. Robert Lamb, of the firm of Oliver and Lamb, Newcastle-on-Tyne.

#### SCRAPS FROM AMERICA.

A NEW church at West Philadelphia, built at the instigation of Thomas Allibone, is now about being finished. The new bank, in Chestnut-street, is also rapidly approaching completion, and its erection up to the present has cost 250,000 dollars. It is said to be a magnificent structure, to have a granite front, most elaborately ornamented; iron doors of rich design; a counter of the same material, and carved in the most costly manner; a huge vault, of chilled iron plates, erected in the centre of the banking-room, and covered with designs, displaying great artistic beauty; ceilings richly embellished in fresco, floors inlaid with marble, and everything displaying, in fact, a lavish expenditure of money for such a purpose.

In the manager's-room, which is approached by a magnificently wrought spiral staircase of iron, the decorations are said "to baffle description," and the style of the furniture and fittings displays the greatest luxury. The new bank of Nicholas Biddle, immediately opposite this, although an establishment of a much more important nature, is comparatively a plain building. It may be well to mention, as an evidence of how banking matters are sometimes managed by our Transatlantic brethren, that while this outlay was going on, the whole capital of the bank, amounting to 1,875,000 dollars, with a surplus of 400,000 dollars, had been, utterly sunk, and the directors studiously kept in ignorance of the fact by the manager, the aforesaid Thomas Allibone, who has absconded, leaving the bank to close its doors, and heaping ruin on multitudes who fancied themselves in alliance.

The La Crosse railroad will be opened to Manston immediately, and shortly also to Lisbon. This road is steadily progressing, and must become one of the best thoroughfares in the north-west.

The Baptists are building a church in Portage city, and nearly all the outside work is finished. It is plain, but of appropriate character.

The works are stopped on the railway between Fond du Lac and Oshkosh. About eight miles, or half the entire distance, of the rails have been laid.

#### "QUANTITIES" FOR TENDERS.

Will you allow me to say a few words on the subject of quantities?

I think it cannot be denied that in all cases where contracts for work are to be let by certain datum, the tenders should be severally based on one certain datum. Quantities supply this.

But quantities are not to be abstracted unless an expense, in addition to the cost of preparing the drawings and specification, be incurred. The mode of charging this extra expense appears to be settled by general consent, but still there is one question which remains open, viz.,—the best mode of charging for the copies of the quantities, and which, it appears to me, it is unfair to add to the cost of the work to be done at the expense of the client of the architect. I would suggest that, in proportion to the cost of the proposed works, each builder tendering should pay a sum upon deposit on receiving the quantities, and which sum should represent the cost of preparing all the copies of the said quantities; these deposits to be returned, upon sending in tenders, to all but the successful competitor, or, who would thus have to bear at his own cost the expenses incurred in preparing the copies required. Architects know too well that, in many

cases, builders apply for and receive bills of quantities upon which they never send in a tender; but were the course above suggested pursued, it is not too much to assume that tenders would be received from all to whom quantities were furnished; and I also believe that a healthy action would result from the adoption of such a course, which would exclude many who, while they can obtain quantities gratis, or at a charge of half-a-guinea or so, furnish tenders at prices far below cost. Such men, could they command it, would hardly care to risk a deposit for quantities; and in their place would, I expect, be substituted many respectable builders, who now stand aloof in contracts let by public tender.

Then as to errors in quantities? Would not a clause similar to the following have prevented all the recent disagreement and *expatriation* at Braintree, if inserted as a condition upon which the builders receiving quantities were to frame their estimates?—

"The quantities will be assumed as correct unless the contractor, previously to sending in his tender, points out an error, should such exist. The plans and specification will be open for the inspection of the contractor at the office of the architect until —, and no allowance will be made for any error that may be discovered after the tender is delivered."

Surely some such protective clause as this is but mere justice to the architect, surveyor, and contractor, and certainly no less so to the client whose money is expended.

Just allow me to add, by way of inquiry, whether the system of receiving open in place of sealed tenders as a rule is not worthy of consideration, and whether, if such a course became general, important and beneficial results would not accrue to all parties?

I trust, however, that the day is not far distant when the profession will universally adopt one general code of regulations on these and all other matters for which some recognised mode of dealing is now considered necessary. H. J. BROWN.

#### LEEDS WORKHOUSE COMPETITION.

THE subject of architectural competitions has already occupied so much space in the columns of the *Builder*; that you may, perhaps, consider that your readers have had enough of it: it is, however, one of such real importance, both to the profession and to the public at large, that I think it should not be allowed to rest in its present very unsatisfactory state. But to effect any improvement, the profession must do something more than make speeches and write articles: every individual member of it must honestly and consistently abstain from sending drawings in competition, unless the conditions proposed are fair and honourable: this would be a much better course than that of abusing committees for decisions, the injustice of which ought to have been expected, either from the ignorance or unfairness exhibited in the instructions.

I will not, however, occupy your space by reiterating general statements, the force of which all admit, but which few, if any, act up to; but will ask your attention to the conditions contained in the enclosed instructions to architects purposing to send designs for the new intended workhouse at Leeds, viz.,—

"Architects are required to furnish a complete set of plans, sections, elevations, explanatory and working drawings, accompanied by a general and minute specification of the manner of executing the works, sufficient for contracting for the same, and an estimate of the cost in detail." &c.; or, in other words, architects are to furnish all the documents and information necessary to enable the clerk to the guardians, who is, of course, a lawyer, to make a binding contract with a builder to erect the building required, and thus, with perhaps the assistance of a clerk of the works to superintend the erection, the worthy guardians have no doubt shrewdly calculated that they may save the expense of an architect, and even lay claim to a character for liberality, by offering, as premiums, about one-fourth of the amount which the architect legitimately employed would be entitled to.

"It may perhaps be thought that the above conditions are framed in ignorance, but I have reason to think that such an excuse cannot be offered in extenuation. In writing to inquire as to this competition, I took the opportunity of asking whether, in making a selection from the designs sent, the guardians would avail themselves of professional assistance; also whether the author of the design selected as the best would be employed to carry out the work. The reply to these questions from the clerk to the Board is,—

"I think there is no thought, on the Board of guardians' side, of adopting the course you refer to in reference to superintending the building of the new workhouse." If, after this candid avowal, the competing architects should be dissatisfied with the decision which may be made by the Leeds guardians, they can only lay the blame on their own shoulders, and will not be able to say they were not forewarned by

NON-COMPETITOR.











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